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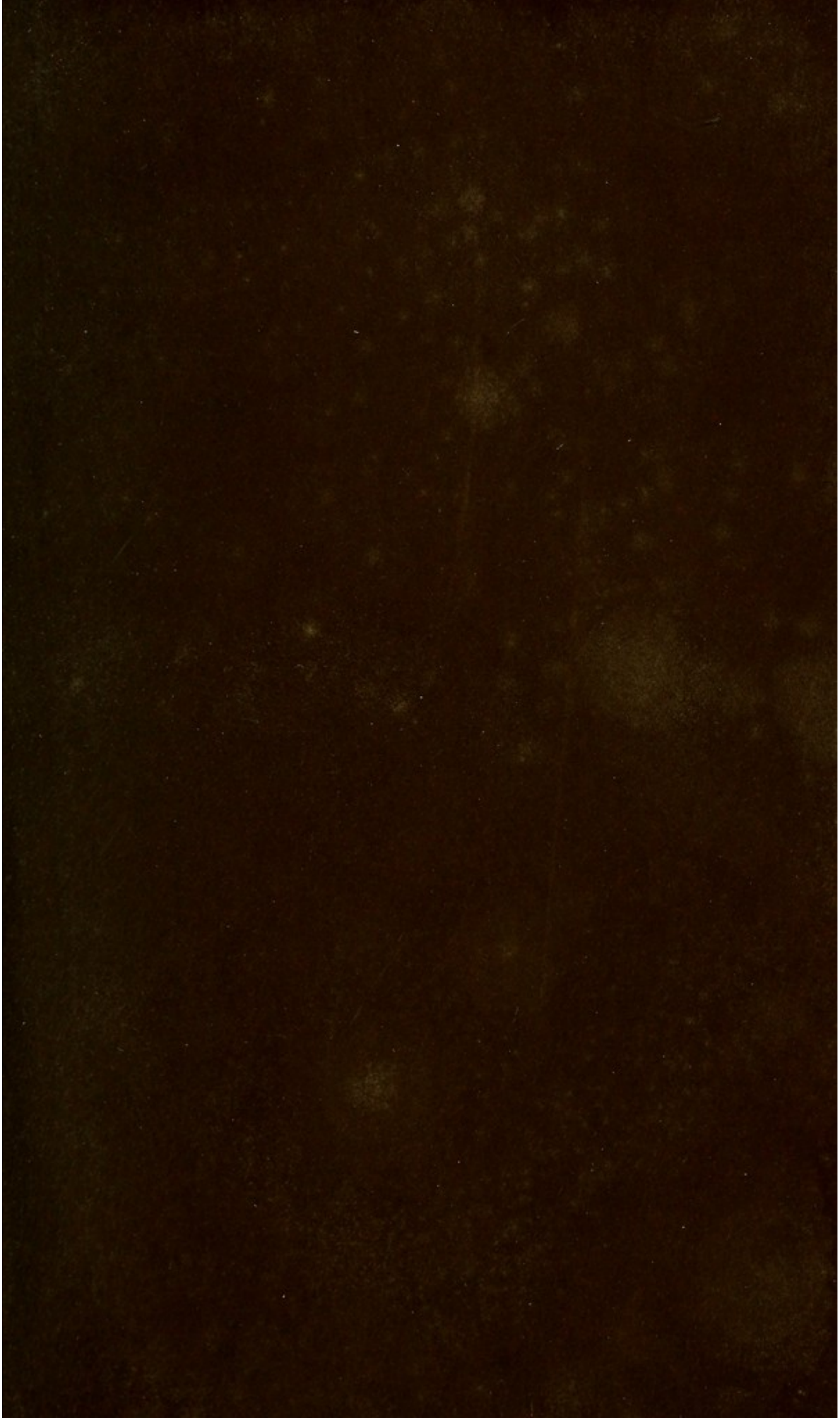
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LECTURES

ON THE

DISEASES OF WOMEN.

BY THE SAME AUTHOR—LATELY ISSUED.

LECTURES ON THE

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Dr. West's book is the best that has ever been written in the English language on the diseases of infancy and childhood.—*Columbus Review of Medicine and Surgery.*

LECTURES

ON THE

DISEASES OF WOMEN.

CHARLES E. BOSWELL
WORCESTER, MASS.
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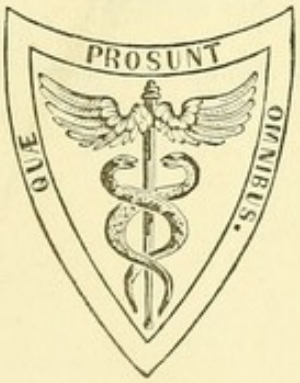
BY

CHARLES WEST, M.D.,

Fellow of the Royal College of Physicians; Examiner in Midwifery at the University of London; Physician to the Hospital for Sick Children; and formerly Physician-Accoucheur to St. Bartholomew's and the Middlesex Hospitals.

Third American,

FROM THE THIRD AND REVISED ENGLISH EDITION.



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TO

PETER MERE LATHAM, M.D.,

PHYSICIAN EXTRAORDINARY TO THE QUEEN,

AND FORMERLY PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL;

WHO FIRST SHOWED ME HOW TO STUDY,

AND HOW TO PRACTISE MEDICINE;

WHO HAS OFTEN GUIDED ME BY HIS ADVICE,

STILL OFTENER TAUGHT ME BY HIS EXAMPLE;

AND WHO SMOOTHED BY HIS UNWEARIED KINDNESS

THE EARLY DIFFICULTIES OF MY CAREER;

TO MY RESPECTED TEACHER, MY GENEROUS FRIEND,

I MOST GRATEFULLY, MOST AFFECTIONATELY,

Dedicate

THIS BOOK.

ADVERTISEMENT TO THE THIRD EDITION.

The adoption of a somewhat fuller page than in the previous editions has enabled me to increase the matter without adding to the size of the book.

The chief additions will be found under the heads of Uterine Hæmatocele and Ovarian Disease; but I have carefully revised the whole work, and added to it wherever larger experience has increased my knowledge.

61 Wimpole Sreet,
April 30, 1864.

ADVERTISEMENT TO THE SECOND EDITION.

The kind indulgence with which the first part of these Lectures was received has already rendered a new edition of it necessary. A shorter time, too, than I feared has sufficed for the fulfilment of my pledge, and the completion of the work.

Many subjects that deserve a longer notice are touched on here but slightly, and others of a purely surgical nature are completely passed over, for I have not ventured to teach concerning matters with reference to which I feel myself to be still altogether a learner; while I have always regarded mere compilation, uncontrolled by large experience, as more apt to perpetuate error than to diffuse truth.

But I have a more agreeable duty to perform than that of confessing my shortcomings, and pleading in their extenuation. To one of my colleagues at St. Bartholomew's Hospital I have been constantly indebted wherever the aid of the surgeon was necessary; and Mr. Paget's dexterous hand, and sound judgment, and ready friendliness, were always given almost without the asking. Many cases, those espe-

cially of ovarian disease, we observed and treated together; and my opinions have often been modified, and my conduct influenced by his suggestions. My readers will reap the benefit; it is for me, with best and warmest thanks, to acknowledge the obligation.

61 Wimpole Street,
October, 1858

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ADVERTISEMENT TO THE FIRST EDITION OF THE FIRST PART.

These Lectures are a first instalment towards the discharge of that debt which the opportunities of a hospital and the responsibilities of a teacher impose upon me. A second volume, which will treat of all the remaining diseases of the female system, will appear, if health and strength are spared me, within three years from this time. I have published this part separately, because I believe that students and junior practitioners stand in much need of that help which, with reference to an important class of these ailments, it may perhaps afford them.

To almost all persons there is probably more of pain than of pleasure in looking back upon a work on which much time and labor have been expended; so wide is in general the distance between the endeavor and its fulfilment. To myself, the consciousness of doubt has often, while engaged upon these Lectures, been very painful, and the sense of imperfect knowledge has pressed heavily upon me, and does so still.

I commend the book, however, to the kindly judgment of my professional brethren, as embodying the results of ten years of observation in the wards of a hospital, and of the honest attempt to gather from each day's added experience something more or better, for the use of those who look to me for help and guidance.

WIMPOLE STREET,
April, 1856.

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THE

DISEASES OF WOMEN.

LECTURE I.

INTRODUCTORY.

Review of subjects already considered in the Lectures on Midwifery—Reasons for having postponed the Study of the Diseases of Women—Twofold Knowledge requisite for their study—Dangers and mistakes arising from want of it—Illustrative cases. Symptoms of these diseases furnished by disturbance of function, alteration of sensibility, and change of texture. Symptoms of first two classes considered.

GENTLEMEN: Some of you, perhaps, remember that I endeavored, at the commencement of my Lectures on Midwifery, to point out to you the various respects in which the generative system plays a more important part in the organism of woman than in that of the man. I called your attention to its constantly recurring activity, as displayed in the periodical return of menstruation, to its far-reaching influence as manifested in the various phenomena that attend upon pregnancy and labor, and to the impress which the whole body bears of the special adaptation of every part for the most complete performance of its functions. I pointed out to you, how, as the child grows, the womb grows with it; how its lowly organized tissues become developed; its vessels increase in size; nerve-matter is deposited within the sheaths, so delicate as to have been almost imperceptible before; and the uterus becomes at length what old anatomists have not hesitated to call it,—Miraculum Naturæ. And next I described to you the means by which all the dangers and difficulties of parturition are surmounted; and then told you how, all the grand functions of the uterus being thus completed, its tissue undergoes degradation and decay, its vessels shrink, its nerves dwindle to their former size, all the emunctories of the body bearing their part in the removal of the now useless materials; while, at the same time, nature labors to form a new uterus, fitted to go once more through the same marvellous changes, and to answer the same important ends. I

entered then into such details, not for the purpose of exciting idle wonder, but in order to lead you to the obvious inference that processes so complicated must be very apt to become disordered; that it must, therefore, be your duty, and ought to be your pleasure, to acquaint yourselves with them and their disorders; that you might learn to know what is healthful, to correct what is contrary to nature, or to render ills that are unavoidable as small as possible. Thus convinced, as I trust, of the importance of the study, you have completed the examination into the physiology of the female sex, in so far as the reproductive processes are concerned, and have inquired, moreover, into the various circumstances by which the generative organs are liable to be disturbed in the performance of their highest functions, the signs of such disturbance, and the means whereby it may be remedied.

But, as the generative system in woman has functions that it performs independent of those highest offices which it discharges when a germ has been impregnated, and becomes developed to a new being, so their disturbance is not without serious influence on the whole organism. The establishment of the sexual power at puberty, and its extinction with advancing age, both exert important influence on the constitution; at both of these epochs there is an increased liability to disease, and at the former a marked increase in the rate of mortality. All through the time of sexual vigor too, a thousand causes may derange the regular recurrence of the manifestations of its activity, and thereby throw the whole complex machinery of the body into disorder.

The disorders of the sexual functions, then, and the way in which they react on the general health, or are acted on by it, call manifestly for some of your attention; but even when you have familiarized yourselves with them most completely, your acquaintance with the diseases of women will be but just beginning, for the organs which subserve these functions may be themselves diseased. These organs, too, are complicated in their structure; formed of various tissues, but bound together by sympathies so close that one part cannot be the seat of suffering without all suffering together; and hence it is often no easy task to unravel the tangled web of symptoms, and to find out where the mischief is, and what it is, to which so many manifestations of disease are due.

I have deferred till now inviting you to enter on the study of these affections, on account of the many difficulties by which it is attended, and on account of the need you will find, in pursuing it, of that special knowledge which you have acquired while attending lectures on midwifery, as well as of that acquaintance with practical medicine which careful observation in the wards of the hospital can alone supply. Knowledge of both of these kinds is equally necessary; the want of the one or of the other is the cause of those two errors into which practitioners not infrequently fall. Some men regard the local ailment as everything; others almost lose sight of its existence, and it is difficult to say which of these two errors is the more mischievous. A woman applies to a prac-

titioner who is guilty of the first-mentioned error, complaining of painful and scanty menstruation; he at once adopts mechanical means for her relief. He introduces bougies to widen the canal, and to remove some, perhaps imaginary, contraction of the cervix uteri, by which he conceives the escape of the menstrual fluid to be impeded, and he even incises it to make sure of enlarging its calibre. After undergoing much pain of body, and much distress of mind, the patient finds herself at the end of these manipulations no better than when they began; the cause of her sufferings lay deeper, and was to have been found in the derangement of her general health, which would have attracted the notice of a better physician, and which well-directed measures would probably have cured. Let me mention another case as illustrative of the opposite error. A patient seeks for relief on account of profuse menstruation, attended with discharge of coagula, but accompanied with little or no pain. General treatment is adopted, the patient is confined to the recumbent posture, in a cool and well-ventilated room, astringents are given internally, cold is applied locally, and no sign of disorder of the general health is allowed to pass without appropriate means for its cure; but yet amendment does not follow, for the bleeding depends upon the presence of a minute polypus, which nothing but careful examination of the uterus could discover. In the one case, a crass mechanical treatment was adopted to cure an affection that depended on the state of the general health; in the other, general treatment failed to remove symptoms which careful investigation would have shown to depend upon a local cause.

But I need not draw upon imaginary cases in order to enforce the caution that I am desirous of impressing on you; the records either of hospital or of private practice afford illustrations of it in abundance.

A middle-aged woman complained of frequent desire to pass water, and of discomfort in voiding it; she was dyspeptic and out of health. Her urine was tested, and found to contain albumen; and the irritable state of her bladder was assumed to be dependent on the disease of her kidneys. Treatment improved her general health, but brought no relief to her dysuria. At length careful observation discovered the albumen to be due to the admixture of vaginal discharges with her urine—a not infrequent source of it in women who suffer from leucorrhœa; while examination, which had been delayed too long, detected a small vascular tumor just within the orifice of the urethra, to the irritation produced by which her symptoms were due, as was shown by their immediate disappearance on its removal.

A young lady whose health had never been robust, began at the age of twenty-two to menstruate irregularly and scantily, and to suffer at the same time from pruritus of the vulva. For this symptom various local applications were resorted to, and more than once she underwent the distress of an examination which discovered nothing more than an increased degree of redness

about the labia and nymphæ. At length, with the decline of her general health, she came under the care of another physician, who ascertained that sugar was present in her urine. The pruritus, like the itching of the urethra in the male subject, was the consequence and the symptom of the diabetes of which the poor girl eventually died.

A woman was admitted into the hospital a few years ago in a state of extreme suffering; her countenance was very anxious; she lay in bed with her knees drawn up, dreading the slightest movement; her abdomen was intolerant even of the slightest pressure. She was reputed to have peritonitis, and had been bled for this, as well as abundantly salivated before her admission, yet without relief. But with all this her skin was perspiring, and her pulse was soft, and not increased in frequency. Her history was, that after vague uterine ailments for a month, she was suddenly attacked by violent pain in the womb, attended with bearing-down efforts equal in intensity to those of labor. These subsided, but the pain was referred to the bladder, and desire to pass water became very frequent. This too abated, and the next complaint was of violent pain in the shoulder, which was encountered by active measures for the relief of alleged inflammation of the shoulder-joint; and the pain in the shoulder suddenly ceasing, the severe abdominal suffering at once succeeded it. A hot hip-bath gave almost immediate relief, though the patient screamed when moved in order to be placed in it; and a full dose of opium was followed by some hours of quiet sleep. The next day no pain was complained of except over the pubes, and this soon disappeared under the use of anodynes; and steel and good food completed the cure of a case of hysterical peritonitis.

Now these cases, to which it would be very easy to add many more, are all examples of the error of making too little or too much of symptoms indicating disorder of the sexual system. Your general medical knowledge must keep you from the latter; it is my special duty to arm you against the former, or rather, as much as in me lies, to defend you from both.

With this view I propose to-day to make a few introductory remarks upon the *signs and symptoms of disease of the generative organs* in the female, and on the means of investigating them.

There are *three* modes, in some or all of which these affections manifest themselves—namely, by causing *disturbance of function*, *alteration of sensibility*, or *change of texture*.

The ovaries are the grand organs of sexual activity in the female; and during the whole time that sexual life continues, they are employed in the healthy individual in bringing ova to maturity, and then in extruding them at certain periods when they have attained a state of fitness for further development, if subjected to the fecundating influence of the semen. Accompanying this internal process, the consequence and the evidence of the local congestion which attends it, we observe a periodical discharge of blood constituting menstruation. The regular return of menstruation,

its accomplishment within a given period, attended by a certain average amount of discharge, and by no more than a certain average degree of discomfort, are regarded by women, and with propriety, as conclusive evidences of the healthy state of the sexual functions. In every inquiry therefore, with regard to supposed disease of the generative apparatus, the mode in which this function is performed must engage your careful attention. You know menstruation to be merely the sign of a more important process going on deeper within the organism. The non-appearance of the discharge, then, or its suppression, suggests at once many important inquiries which must be carefully followed up, till you can return to them a satisfactory reply. Is the system so feeble that, like an ill-thriven plant, its sexual power remains altogether in abeyance? or are the ovaries themselves diseased? or does the internal process go on, while yet, owing to some mechanical cause obstructing the escape of the discharge, its outward manifestation is wanting? or is its appearance prevented by some disorder of the general system, or of the uterus, which incapacitates that organ from performing its usual office as a kind of safety-valve by means of which the congested pelvic vessels are relieved of their superabundant blood? Or is perchance none of these suppositions correct, and is the real explanation of the suppression of the menses to be found in a physiological not in a pathological occurrence, and are the symptoms those of pregnancy, not those of disease? Such are the important questions which, in every case of suppressed menstrual discharge, you must endeavor to answer, and to which, both for your own reputation as well as for your patient's well-being, it is of the greatest moment that you should return a correct reply. Or, again, your patient suffers from what she conceives to be excessive menstruation, her health is breaking down beneath it. Whence comes the discharge? is it due to a state of general plethora, which nature endeavors to relieve by this outlet, though in her endeavors she exceeds the limits of safety? or are the vessels so weak that blood escapes from them with dangerous profusion? or is the hemorrhage due to neither of these causes, but to a breach of surface, to some ulcer of the womb from which the blood flows, or to some morbid growth, or formidable organic disease, the effect of which is rendered more serious just at those times when the uterus becomes more than usually congested? These, and similar inquiries, possess a special importance at certain epochs of a woman's life; for when the sexual powers are on the decline, disease is especially liable to be set up, and you therefore regard all menstrual irregularities at that time with closer attention than at any former period.

But there are other subsidiary functions performed by the generative organs, the disturbance of which is sometimes the occasion of mere discomfort, at other times the indication of serious disease. These organs present a great variety of secreting surfaces, which furnish matters of various kinds, subserving various purposes. A slight secretion moistens the interior of the Fallopian tubes, just

as it does that of all viscera, and except near the monthly periods of sexual activity, it is by little more than a mere halitus that the cavity of the womb itself is lubricated. The large mucous crypts or glands about its neck furnish a peculiar secretion, which is generally present at all times, though most abundant during pregnancy. The mucous follicles of the vagina pour out a somewhat copious secretion upon its surface; and the two glands which are seated one on either side of its entrance, and which, under the name of Duverney's glands, correspond to Cowper's glands in the male, furnish an abundant discharge at the time of sexual congress; and, lastly, numerous mucous crypts and sebaceous follicles on the nymphæ, the interior of the labia, and about the vestibulum, supply a suitable secretion to lubricate those parts. From any or all of these sources secretion may be furnished, excessive in quantity, and more or less altered in character. The secretion may be a mere leucorrhœa, an increased flux from otherwise healthy tissue; it may be a purulent discharge from inflammation of a mucous membrane, or it may be furnished from an ulcer of the womb; or, it may not be simple pus, but an offensive sanies from a wide-spread cancer of the organ, or of some part adjacent. Your patient may come to you in complete ignorance as to which of all these is the cause of the affection under which she is laboring: she looks to you for an answer to her doubts, and for relief to her sufferings.

Diseases of these organs, however, are associated not merely with altered function, but also with *disordered sensibility*, and that not only of the part affected, but also of others more or less distant. There is hardly any more fertile source of erroneous diagnosis with reference to the diseases of women than the overlooking the import of some of these alterations of sensibility, and the not connecting with its proper cause the sympathetic affection of some, perhaps, distant organ. If a woman complain of a sense of heaviness in the pelvis, of bearing-down pain, of pain in the loins and about the sacrum, or shooting down the thighs, our attention is naturally directed to the state of her sexual organs, and we are not likely, with moderate caution, to overlook the real seat of her disease. In many cases too, something beyond the seat of the disease may be learned if we notice the character of the pain from which the patient suffers, since this is usually of one kind if inflammation be present, of another if there be cancerous disease, of a third if there be displacement of the womb. These minutiæ, too, are of all the more importance for us to attend to, since there are no other diseases in which that personal investigation by which so many questions can be at once answered is attended by so many difficulties, both from the natural repugnance of the patient to submit to it, as well as from the imperfection of our means of examination.

But disease of these organs is not seldom attended by pain which is referred not to the real seat of the mischief, but to some other, perhaps some distant part. Women may apply to you who seem

out of health, and in whom you may, perhaps, at first, suspect the existence of uterine disease; but they appear annoyed at inquiries with reference to their sexual functions, or perhaps deny, and with perfect truth, the existence of any pain in the uterus, or its immediate neighborhood. Perhaps, however, they may confess to pain in the rectum, especially at the time of defecation; or may speak of symptoms which they refer to hemorrhoids; or may complain of sciatica, or of lumbago. Always suspect the import of these sufferings; bear in mind the wide sympathies of the pregnant womb, and keep all your vigilance active; it is highly probable that these anomalous symptoms will resolve themselves into the effects of uterine disease.

Nor are they merely strange and intractable forms of local ailment which should call your special attention to the uterus and its functions. The pregnant woman suffers almost invariably from nausea and vomiting; her appetite often becomes capricious, and her digestive functions are frequently ill performed; while it is far from unusual for her to have attacks of headache, or of tic-douloureux, though she may at other times enjoy a complete immunity from all such ailments. But just as disorder of the functions of other organs not seldom attends upon the physiological processes going on in the womb, so may it follow upon uterine irritation produced by disease; and a large proportion of the most obstinate forms of dyspepsia, and a still larger number of hysterical and nervous affections, have been excited and are kept up by disease of the womb. In a great many of these cases, minute inquiry elicits evidence of functional disorder of the generative organs, as shown by disturbed menstruation, by leucorrhœal discharges, or by painful sensations, although none of these symptoms may have been so marked as to have engaged the patient's notice; or she may have regarded them as trivial accidents not worth mention when compared with the other, and to her feelings the more important causes of her sufferings.[1]

Need I guard myself against being misunderstood—against being supposed to say that, in the management of a woman who is dyspeptic, your attention is to be turned less to the state of her stomach than to that of her womb; or that, if a woman suffer from neuralgia, you are at once to suspect the existence of uterine disease? I mean no such thing; but *what I do mean* is, that, in the treatment of diseases occurring among patients of the female sex, you should always bear in mind that, besides the ordinary causes of disease common to both sexes, there is another set of causes peculiar to themselves. Whenever, therefore, the ordinary principles of pathology fail to explain, or the ordinary proceedings of therapeutics prove inadequate to cure the ailments of any female

[1] In vol. ii of Lisfranc's *Clinique Chirurgicale*, 8vo., Paris, 1842, from p. 182 to p. 256, are some remarks, with illustrative cases, on errors of diagnosis in uterine disease, which, though not free from the characteristic faults of that writer, will yet well repay an attentive perusal.

patient, it behooves you to remember that in her sex, and in its peculiar diseases, you may perhaps find a clue to the cause of her present symptoms, and discover indications which may show you how to accomplish their cure.

LECTURE II.

INTRODUCTORY.

Symptoms of disease of generative organs, furnished by alterations of size, texture, or situation, to be ascertained only by examination—General remarks on the subject—Examination either tactile or instrumental—Tactile examination of the abdomen, per vaginam, per rectum—Instrumental examination, by means of the Uterine Sound; description of the instrument, and rules for its introduction; examination with the Speculum; varieties of the instrument; rules for its introduction; attempt to estimate its value.

THERE was not time at our last meeting for the due consideration of the *third and last class of indications of disease of the generative organs*—namely, those *furnished by alterations of their size, texture, or situation.* I must therefore direct your attention to them to-day.

It is, I conceive, quite needless for me to preface what I have to say by any remarks upon the importance of these signs, or upon the necessity of ascertaining the presence or absence of any of these changes in a great majority of the cases in which our patient's symptoms indicate some disorder of her sexual functions.

The examination, however, by which alone this information can be obtained, must be extremely painful to a woman's feelings, since she is not now, as in the time of labor, impelled by the extremity of her sufferings to submit to anything for the sake of relief. She seems, indeed, to be now peculiarly alive to every painful impression; and while she feels almost overwhelmed by a sense of humiliation at having to undergo an examination, of the necessity for which she may yet feel fully convinced, she will judge with painful minuteness each act of yours—any needless delay, any careless exposure of her person, any apparent want of delicacy or consideration. With the greatest care, indeed, you will not always escape from undeserved blame; without it, you will perpetually wound your patient's feelings, and if you do not injure your own prospects, you will yet fail to support the dignity of your profession, and will lead to the inference that there is at least one department of the art of healing incompatible with the tone, and manner, and feeling of a high-bred gentleman. The familiarity which hospital practice begets with these ailments among women whose sensibilities are not always as keen as those of persons in a higher class of life, or the circumstance that they do not venture to express the pain which want of consideration

may have caused them, leads but too often to carelessness in these respects on the part of men who would yet shrink from the idea of inflicting a moment's unnecessary suffering upon any one. I am therefore all the more anxious to impress upon you that the delicacy with which you ought to conduct all your investigations into the diseases of women, is not a thing which can be assumed for the nonce, but that it must be the habit of the mind, must therefore have been acquired now during your pupilage, and in the midst of your intercourse with the poor.

We make ourselves acquainted with the existence of disease of the generative organs, either by manual examination or by ocular inspection; and for the purpose of making such investigations with the greater accuracy, we not infrequently employ instruments of different kinds. The simplest mode of examination, and that which causes our patient the least distress or alarm, is that in which we employ our sense of touch alone, unaided by any apparatus whatever. It is perhaps scarcely necessary for me to remind you that, while it is our duty to use every means essential to the thorough investigation of our patient's condition, it is no less our duty to make no needless examination; never to use an instrument when we can ascertain all that is necessary without it; never to resort to ocular inspection when we can feel a reasonable certainty that by the sense of touch alone we have arrived at a true knowledge of the disease.

We derive information from our sense of touch when applied either through the abdominal walls, or by the vagina, or the rectum. *Examination of the abdomen* is not always called for; when it appears necessary, it is well to begin with it. For this purpose the patient should lie upon her back, with her knees drawn up so as to relax the abdominal muscles. It is very seldom necessary to apply the hand to the uncovered surface; the interposition of the patient's shift little if at all interfering with the accuracy of the examination. Care should be taken that your hands are not cold; if they are, this will not only annoy your patient, but, by exciting contraction of her abdominal muscles, may seriously impede your investigation. Placing both hands upon the abdomen, you make at first very gentle pressure, increasing it by degrees as the patient becomes accustomed to it, and trying to engage her in conversation, and thus to distract her attention, if either pain or alarm should cause her to throw her abdominal muscles into action. You thus make yourself acquainted with the general contour of the abdomen, and by examining at either side as well as in the centre, you detect any tumor which may be present there. Supposing any such growth to be discovered, you must examine well its form, its size, its attachments, its degree of mobility, and the amount of tenderness or pain which meddling with it occasions. Is it due to accumulation of fæces in the large intestine; to enlargement of the liver or spleen; or is it perhaps merely the result of a general fulness of the abdomen produced by flatus in the bowels, or by fat in the omentum or beneath the integuments,

rather than the consequence of any definite disease? If the tumor seem to arise from out of the pelvis, it is most probably formed either by the uterus itself, or by its appendages. If by the former, the chances are that it will be situated in the mesial line of the abdomen; if by the latter, that it will occupy one or other side, or at any rate that it will be learned to have occupied that situation when first discovered. Whether it is solid or fluctuating, even or irregular, will be other points for you now to make out, and you must then proceed to correct or confirm, by a vaginal examination, the impressions received on examining through the abdominal walls.

It is seldom necessary, for the purposes of a *vaginal examination*, that the patient should be in any other than the usual obstetric position. On the Continent, where women are generally delivered on the back, they often assume that position whenever the state of the uterus needs investigation. Sometimes, too, when it is wished to appreciate the degree of prolapse or downward displacement of the uterus, or to estimate its increase in weight, or when the womb is high up and does not come readily within reach, the examination is made with the patient in the standing position; I do not think, however, that any of the alleged advantages of this attitude are sufficient to counterbalance its very obvious inconveniences. The patient, therefore, lying on her left side, the index finger of the right hand is introduced as for an examination in labor, and as it is slowly carried forward, attention is to be paid to the degree of pain excited in each part of its course. The state of the external organs must be noticed, and then that of the vagina—whether it is hot and swollen, or cool and relaxed; whether dry, or abundantly bathed in secretion. The cervix uteri is thus reached, and you observe whether or no it is tender, what are its length, and size, and texture; whether the os uteri is open or closed; whether its lips are small and even, or rough and irregular. You will bear in mind, that after frequent childbearing, the cervix uteri is both shorter and broader than in the woman who has never given birth to children (changes which are especially marked in that portion of it which projects into the vagina, and is commonly called the portio vaginalis); and that the os uteri is frequently open, so as to admit the finger with but little difficulty. In this case, however, the inner surface of the os is smooth, and the tissue of the cervix soft and yielding; while if disease exist, the interior of the os will most likely be rough and uneven, and the substance of the cervix rigid. Sometimes a peculiar and almost velvety smoothness is presented by the surface of the os uteri, or the tissue generally has less than its natural firmness; and any of these peculiarities, or the presence of any foreign body between the lips of the uterus, should be well borne in mind, in order that you may afterwards compare the information obtained by ocular inspection with that previously gained by the sense of touch. While making this examination, you notice, moreover, the situation of the uterus, whether it still

retains its natural direction, or has come to lie with its axis corresponding to the axis of the vagina; whether it is bent upon itself, or in any other way misplaced. Examine next whether the uterus is increased in weight; balance it on your finger, and appreciate as well as you can the size and weight of the organ. If you had discovered any tumor by examination through the abdominal walls, you should now try to ascertain whether there is any connection between it and the uterus, or between it and any other tumor that you may detect within the pelvis, and whether pressure on the one in any way modifies the position of the other. For this purpose, too, it is advisable to let the patient lie on her back, when, with one hand placed over the pubes, and the finger of the other in the vagina, the size of the womb and the relations borne to it by any tumor can be made out far more accurately than is possible while the position on the side is maintained. When all the above-mentioned points have been ascertained, with as much gentleness as possible, the vaginal examination is over, and there is nothing more for you to notice, except it be the appearance or other characters of the discharge.

Sometimes it is expedient to examine *per rectum* as well as per vaginam; if either the patient had made complaints of serious pain in the bowel, or if you had discovered a tumor situated behind or to one side of the uterus, or if on any account you are anxious to examine the posterior part of the pelvis, or of the uterus itself, as completely as possible. The only caution specially applicable to examination per rectum is, that owing to the intervention of the intestine between the finger and the womb, that organ feels much larger than it really is; besides which, as the finger reaches less readily to a level with the cervix uteri when introduced into the rectum than into the vagina, there is some risk of mistaking the cervix for a prominence of the posterior wall of the uterus, or for a tumor in that situation, or for a retroversion or retroflection of the organ, when, in reality, no morbid condition whatever is present.

Of late years it has become customary in many cases to aim at a greater completeness of tactile examination, by means of an instrument which is called the *Uterine Sound*. At different times, indeed, practitioners have in some special instance introduced a catheter into the uterus to satisfy themselves of the size of its cavity, or of the absence of any foreign body from its interior; or have attempted to rectify a retroversion of the unimpregnated womb, by means of an instrument introduced within it.[1] To the best of my knowledge, however, a Frenchman, M. Lair, was the first person who, between thirty and forty years ago, recommended

[1] The late Professor Osiander, of Göttingen, employed his Dilatorium Orificii Uteri, which is described in Rosenmeyer's dissertation, published at Göttingen in 1802, on three occasions, to reduce the retroverted unimpregnated womb. His cases were published in the *Medicinisch Chirurgische Zeitung* for 1808, according to Schmitt, who refers to them in his Essay, *Ueber die Zurückbeugung der Gebärmutter*, 8vo., Wien, 1820.

sounding the interior of the uterus in order to ascertain whether the cervix is free from all impediments, and whether the cavity of the organ generally is in healthy state. His book is illustrated with drawings of the instruments which he employed for this purpose ;[1] and he advised that they should be curved like a catheter at their uterine extremity, in order to facilitate their introduction. He recommends, moreover, that the sound should be introduced through a metallic cylinder or speculum, by which the mouth of the womb is to be first brought into view ; a proceeding which, instead of facilitating the introduction of the instrument, must, in many cases, have rendered it altogether impossible. The practical defects of M. Lair's plans prevented their general adoption ; and his recommendations were in consequence soon forgotten. To Dr. Simpson,[2] of Edinburgh, belongs the merit, not only of having recalled attention to the subject, but of having also invented a Uterine Sound, admirably adapted for the safe and easy exploration of the cavity of the womb. His instrument is made of flexible metal ; and in shape and size closely resembles a sound for the male bladder, having a similar curve, and its handle being flat, and roughened on one side in the same manner. The uterine end of the instrument terminates in a small bulb, to prevent its injuring the interior of the womb, while a notch at every inch serves to indicate the distance to which the sound has entered the womb, and thus to mark the size of its cavity. A slight prominence at two and a half inches shows the *average length of the cavity* of the healthy womb, while a deep depression at four and a half inches marks a size, which, except under very special circumstances, the organ hardly ever exceeds.[3]

The mode of using the instrument is sufficiently simple. Two fingers of the left hand are introduced behind the cervix uteri, as the patient lies on her back or on her left side, and the sound is slid along the fingers till its point reaches the os uteri, when, by depressing the handle towards the perineum, and at the same time carrying the instrument gently forwards, it will enter the uterine cavity. I need not say, that it must never be employed when the least ground exists for suspecting pregnancy ; and that in no circumstances must force be used in its introduction. In the majority of cases the introduction of the sound causes some pain, though this is generally by no means severe, and is almost always of very

[1] *Nouvelle Méthode du Traitement des Ulcères, etc., de l'Uterus*, 8vo., Paris, 1828. Deuxième édition, p. 137. The first edition appeared about two years before.

[2] In a series of papers in *London and Edinburgh Monthly Journal* for 1843.

[3] Many modifications of the Uterine Sound have been suggested by Valleix, Kiwisch, Huguier, and still more recently by Dr. Kugelmann, of Hanover. (*Verhandl. d. Gesellschaft f. Geburtshülfe*, Nov. 1861, *Zeitschr. f. Geburtsk*, vol. xix, p. 120). This last is very ingeniously contrived with a movable scale which slides on the sound itself, and indicates at the handle the distance to which the instrument has entered the uterus, so that the prominence and the notches that interfere with the introduction of Simpson's sound, are done away with. The difficulties in the employment of the original instrument are, however, so slight, and simplicity is of such great value, that I still prefer Simpson's sound to any of the other varieties of the instrument.

short duration; and in no instance which has come under my observation, have dangerous consequences resulted from its use, though awkwardness and foolhardiness have, I know, done mischief with this, as with almost all instruments that have ever been invented.

The information which this instrument places within our reach is often extremely valuable; and of a kind such as otherwise we could not obtain at all, or could arrive at only very slowly, and by frequently repeated examinations. If, in a patient suffering from frequent hemorrhages, we ascertain the uterine cavity to be greatly increased in size, our immediate conclusion is that the womb contains some foreign body, as a polypus or fibrous tumor, the presence of which has excited and serves to keep up the bleeding. If we doubt whether a tumor proceeds from the womb, or from its appendages, or from some other part within the pelvis, the sound enables us to estimate the weight of the organ, and to strengthen the inference drawn from this experiment, by completely isolating the womb from the tumor, and thus ascertaining positively their independence of each other. Or lastly, if the uterus is bent upon itself either forwards or backwards, the diagnosis of this condition, which once was a matter of much difficulty, is now often arrived at with facility, by introducing the sound with its concavity directed towards the swelling we detect per vaginam, and observing whether or no this swelling disappears on turning round the instrument. I will not now go into further detail on the subject, for I shall hereafter have to refer on many occasions to this valuable aid to diagnosis. The uterine sound, indeed, is not always applicable; nor does it, when used, always clear up our doubts; but I do not remember any instance in which a diagnosis based on the information which it afforded turned out afterwards to be erroneous.

The idea of adopting some contrivance by which the condition of the uterus might be examined by the eye was not altogether unknown to the ancients, though for the most part those instruments, of which drawings may be seen in old works on midwifery, and which received the name of *Speculum Matricis*, were used for dilating the mouth of the womb during labor, rather than for examining its condition in disease.[1] An instrument similar in kind, however, appears to have been sometimes employed for the investigation of disease of the uterus and vagina, though it never came into anything like general use. The introduction of the speculum into modern practice as a means of facilitating the investigation of uterine disease does not date further back than the year 1821, when the instrument was first employed by M. Récamier. This, which was merely a cylinder, conical in form, rounded off a little at its uterine extremity, and bevelled at its other end, was next fitted with a small handle by M. Dupuytren, and afterwards

[1] See some remarks and quotations referring to the early history of the speculum, in Balbirnie, *Organic Diseases of the Womb*, pp. 41–45, 8vo., London, 1836.

a plug was adapted to it to render its introduction more easy. Various materials have been used in the fabrication of these instruments, but we owe the greatest improvement in this respect to Mr. Fergusson of King's College. Instead of employing metal, which is very apt to tarnish, and never has a very powerful reflecting surface, or glass, which though very useful when caustics are to be applied to the uterus or vagina, since they do not act upon it, is yet liable to be broken, and moreover, owing to its transparency, does not reflect very powerfully, he adopts the following plan: A glass speculum is silvered on its outside, by which means the inner surface is converted into a mirror easily kept clean, and on which no caustics can act. The speculum is then enveloped in successive layers of cotton-cloth, each of which is covered with a solution of Indian-rubber, and when the glass has thus received a coating of sufficient thickness it is varnished, and forms an instrument which is now in general use. Its funnel-shaped termination is intended to provide for the admission of as much light as possible; a point of the more importance in this country, from the almost universal practice of examining patients on their side, in which posture light has a less ready access to the parts than if, as on the Continent, the patient lay on her back. The object of the instrument being slightly bevelled off at its uterine extremity, is that the same advantage is thereby secured[1] as if the diameter of the cylinder throughout were greater. This sloping off of the instrument, however, must not be carried, as some have recommended, so far as to amount to an angle of forty-five degrees, since by so doing the inconvenience is encountered of a fold of vagina falling down in front of the cervix uteri. The specula which I use may perhaps appear to you of an unnecessary length; but you must bear in mind that the vagina is very extensile, and that when a speculum is introduced into it, the canal is stretched in length as well as in width, so that the ordinary length of the vagina is not to be taken as the measure for the length of the speculum. I believe the attempt to reach the os uteri fails from the shortness of the speculum oftener than from almost any cause, and quite agree with the opinion of the late Professor Lisfranc of Paris,[2] that a speculum ought to be seven inches long.

In spite of the general convenience of the cylindrical speculum, however, there are some drawbacks from its utility. Owing to the entrance of the vagina being narrower than any part of its canal, it happens sometimes that a speculum sufficiently small to pass without causing the patient severe pain, is not large enough to bring the whole of the os uteri into view. But even though its whole surface be exposed, yet the cylindrical speculum pressing the lips of the os together may prevent a good view being obtained of its interior, and may thus render the examination incomplete

[1] This useful modification of the speculum was, I believe, first suggested by Dr. Warden, *London and Edinburgh Monthly Journal*, Dec. 1844.

[2] *Clinique Chirurgicale*, &c., vol. ii, p. 272.

and unsatisfactory. To obviate these disadvantages, specula have been constructed on the principle of the old instruments, composed of two, three, or four blades, and so arranged that by turning a screw or by closing the handle, the uterine extremities separate, and thus expose the os uteri to view without any enlargement of the other end of the instrument. The best known of them are the two-bladed speculum of M. Ricord; a three- and a four-bladed speculum manufactured by M. Charrière, of Paris; and a two-bladed speculum invented by Mr. Coxeter, instrument-maker to University College. M. Ricord's instrument, and to a less extent those of M. Charrière, have the inconvenience that folds of the vagina are apt to fall down between the blades, and thus conceal the os uteri from view. This objection does not apply to nearly the same extent to Mr. Coxeter's instrument; each blade of which being a half-cylinder, does not leave so large a space vacant when it is opened. Two or three different sizes, then, of Fergusson's speculum, and a Coxeter's bivalve speculum—which last it is worth while, for the sake of obtaining a better reflecting surface to have electro-plated—are all the instruments you need for ocular examination of the uterus.

On the Continent, the posture usually assumed by a patient when about to undergo a specular examination, is on the back, with the nates resting on the edge of a bed or table, and the legs bent up towards the body, or the feet resting on two chairs, between which the doctor stands. There can be no doubt but that in this position of the patient the os uteri falls more readily within the orifice of the speculum, and that light is admitted much more thoroughly than in any other attitude; but its apparent indelicacy is so serious an objection to it, that except under special circumstances, it is desirable to introduce the speculum with the patient lying on the left side. In this position, too, unless the os uteri be directed in a remarkable degree backwards towards the sacrum, a very good view can generally be obtained, provided the patient lie with her body directly across the bed, her hips close to its edge, and her thighs drawn up towards the trunk; in the same attitude, indeed, as we should place a person in, on whom we were about to apply the forceps in labor. If the patient be not in bed, the same precautions as to her position must be taken as she lies on a couch or sofa, and a very little care in the arrangement of her dress will prevent any exposure of her person. The speculum, having been previously warmed and lubricated, is then to be introduced with the right hand, while with the left the labia and nymphæ are separated. Care must be taken that the end of the speculum is passed thoroughly within the opening of the vulva, since, if this precaution be neglected, a little duplicature of the fourchette is sometimes pushed before the instrument, and much needless pain is caused to the patient. The great obstacle to the introduction of the speculum is met with at the entrance of the vagina, and this must be overcome by gentle effort, not by anything approaching to violence. The speculum then passes on

with facility, and when it has entered for some distance you withdraw the plug, and possibly find that the os uteri is now within view. You must, however, bear in mind, that the folds of the vagina sometimes hang down at the further end of the speculum, leaving a small aperture between them, which may be mistaken for the os uteri; though, on moving the instrument a little, the contour of the orifice will alter, and the vaginal folds dispose themselves in a different form. If, although you have introduced the speculum for some distance, the os uteri do not appear, the probabilities are that you have passed beyond it, and that the instrument has gone up into the cul-de-sac of the vagina, behind the neck of the womb. In this case by gently and gradually withdrawing it, the os uteri will most probably come into view; if it do not, you may move the speculum slightly from side to side, since it is likely that the uterus is not quite in the mesial line, and that thence arises the difficulty in getting sight of it. When once you have the os uteri within the speculum a little manœuvring will generally suffice to remove any fold of vagina which obstructs your view; though, if the neck of the womb be very large, you may be compelled to examine first the anterior and then the posterior lip of the organ; and in this case you will find a bivalve speculum much more useful than the cylindrical instrument.

There are many other little matters of detail connected with the employment of the speculum well worth the knowing, but to be learned rather by personal observation and actual practice than by any description. Need I say that there are some cases, those of unmarried women, for instance, in which nothing but the most urgent necessity would justify your employing the speculum; others, as the majority of cases of cancer of the womb, in which its use would furnish no important addition to your previous knowledge; and still others in which its employment must be postponed, if not actually interdicted—such, for instance, as cases of extreme sensibility of the parts, of inflammation or ulceration of the vagina or of the external organs? Restrictions to its use, indeed, such as these, speak to the common sense and right feeling of every one too distinctly for there to be much hesitation in subscribing to them. But, while admitting them, some of you may be inclined perhaps to go still further, and to inquire of me, whether on the whole, the advantages arising from the use of the speculum outweigh the evils resulting from its abuse; whether it helps us to so much additional knowledge, or adds so much to our therapeutical resources, as to counterbalance all the suffering, both moral and physical, which its employment not infrequently inflicts upon the patient? Now if I had a strong opinion on the negative side of this question, I should certainly not have taken up so much of your time in describing the instrument, and in directing you how to use it. The restrictions which my present experience leads me to put upon its employment will be best appreciated when I speak of each disease in the management of which it has been advised to have recourse to it; and whether my

views be right or wrong, I do not apprehend much difficulty in expressing them. To answer the broad question, "What is your opinion of the speculum?" I feel, on the other hand, to be a very difficult matter, and to expose me to much risk of being misunderstood.

I will, however, do my best to reply to the inquiry. Those who first introduced the speculum into practice employed it for two purposes; partly as furnishing a new means of diagnosis, partly as enabling them to adopt various modes of local treatment, which, without it, were impracticable. Now I believe that the advantages of those topical medications for which the speculum is needed have been greatly overrated; though there are some cases, and those such as have proved most rebellious under other plans of treatment, in which these local measures may be resorted to with the most signal advantage.

In estimating the value of the speculum as a means of diagnosis, I think that the advances in knowledge of uterine disease, of which it was the indirect occasion, by the impulse which it gave to their study, are sometimes confounded with those positive additions to our information which we owe exclusively to the use of that instrument. The former have been very great indeed, and I think candor compels us to acknowledge that they have been due almost exclusively to persons who, not content with our previous means of investigating uterine disease, have labored to increase them by the employment of instruments. The latter have certainly been less considerable, but nevertheless the speculum enables us in many instances to decide at once, and with certainty, upon the nature of a case, which otherwise we should have understood only after long and careful watching, to discover some minute polypus which the fingers alone would not have detected, to determine the source of a profuse leucorrhœal discharge, and to decide whether it is furnished by the cavity of the womb, or by the walls of the vagina; or, from the redness, congestion, or abrasion of the os uteri to infer the state of the womb generally, and thus to conduct our treatment upon the sure ground of positive observation, not upon bare presumptions. At the same time, however, that I hold the speculum to be in many cases of most essential service, I think that the endeavor of all of us should be to ascertain the minimum of frequency with which its employment is necessary. This is to be done not by decrying the instrument, still less by attributing dishonest motives to those who use it, but by soberly and honestly trying to test the value of the information which we derive from it, and learning to discriminate between those appearances which the speculum discloses that are of moment, and such as are of no importance.

LECTURE III.

MENSTRUATION, AND ITS DISORDERS.

Importance of disorders of menstruation; their three varieties—Relation of tardy puberty to menstrual disorder.

Amenorrhœa, from local causes, from congenital absence or malformation of sexual organs, from retention of menses owing to impediments to their flow.

Amenorrhœa, from constitutional causes—tardy development, influence of previous illness in causing it. Symptoms, chlorosis whereon it depends—state of the blood. Consequences of amenorrhœa.

Treatment—principles which should regulate it—attention to general health, to uterine functions. Vicarious hemorrhages, their import, their management. Importance of habit in all ailments of menstrual function.

I called your attention, in the first Lecture, to the importance of the menstrual function, and to the frequency of its disorders. I told you that almost every serious ailment of the generative system, at least during the period of sexual activity, betrays itself by some disturbance of menstruation; and I may further add, that such disturbance is often the first, and sometimes for a considerable period the only, symptom of even grave disease. But you also know that disordered menstruation does not invariably depend on local mischief, that derangement of function does not always imply altered structure, but that a woman may menstruate scantily, painfully, or in excess, and yet no part of her generative organs may differ in appearance from those of a person in whom that function has always been performed in the most healthy manner.

The disorders of the menstrual function, then, being so numerous, so important, and dependent on such various causes, it will be our best course to study them first, and afterwards to examine into other diseases of the sexual system, in which, though disordered menstruation may occur as a symptom, it is yet not the only one, nor that which calls for the chief consideration in the treatment of the patient.

There are *three* grand classes, to one or other of which it has long been customary to refer the different disorders of menstruation. Either the menses do not appear at that period of life at which their occurrence is naturally expected, or they become suppressed in persons in whom they have already occurred; or their discharge is attended with extreme pain; or it is excessive in quantity, or over frequent in its return. I propose to consider in its turn each of these three varieties of *disordered menstruation*, which have respectively received the names of Amenorrhœa, Dysmenorrhœa, and Menorrhagia.

It is, as you know, wisely ordered that the power of perpetuating the species is the last of nature's gifts, and one which she does not accord until the whole system has, in other respects, attained

nearly to its perfection. Of this new power in woman, menstruation is both the sign and the consequence, indicating that the ovaries have become capable of bringing to maturity the germs, which need only to be impregnated in order to become developed to new beings. In our climate, the date of the first occurrence of menstruation is between the fifteenth and sixteenth year;[1] but the changes at puberty in the maiden, like those at dentition in the babe, are not accomplished all at once, but extend over a period of several months, during which disease is more frequent, and as our Tables of Mortality show, more fatal, as compared with the male sex, than at any former time.[2] The anxiety with which parents regard the approach of this epoch is, then, not unnatural; nor is it without good reason that this anxiety is increased more and more in proportion as delay occurs in the appearance of the first menstruation, since, when the menstrual function has been even once properly performed, many of the dangers of puberty may be regarded as already passed.

Dr. Whitehead, of Manchester, to whom the profession is indebted for some very interesting researches into these subjects, ascertained that the risk of some unfavorable accident complicating the first establishment of menstruation is very much greater when that is tardy in its occurrence than when it is premature; and that in between a third and half of all cases in which it is delayed to nineteen years and upwards, its appearance is associated with either local or constitutional disorders—a statement with which my own experience coincides.[3]

[1] Dr. Whitehead, of Manchester, gives fifteen years six and three-quarter months as the average deduced from 4000 cases, in which he made this point the subject of inquiry. See p. 47 of his *Treatise on Abortion and Sterility*, 8vo., London, 1847.

[2] Thus MM. Quetelet and Smits, in their work *Sur la Reproduction et la Mortalité de l'Homme*, 8vo., Bruxelles, 1832, show that while in childhood the mortality of the two sexes has been equal, or that of the male has predominated, the female mortality at once rises between fourteen and eighteen years of age to 1.28 to 1 male death; sinking again in the succeeding four years to the proportion of 1.05 female to 1 male death.

[3] Mr. Whitehead's table, *lib. cit.* p. 48, yields the following results:

First Menstruation.	Total Number of Cases.	Number Unfavorable.	Percentage of Unfavorable.
From 10 to 14 years, . .	1141	224	19.63
Between 15 and 16, . .	1728	324	18.75
" 17 and 18, . .	892	247	27.69
From 19 and upwards, .	239	97	40.58
Total, ...	4000	892	22.30 av.

In 566 cases in which I ascertained the date of the first menstruation, either excessive pain, excessive discharge, irregularity of its return, or disorder of the general health, occurred with the frequency shown in the following table. The

The mere circumstance, indeed, of a girl having passed the age at which menstruation usually appears, without performing that function, is not of itself a reason for medical interference. The date of puberty varies very widely, and one woman may menstruate at ten, and another at twenty years of age, without the health of either being of necessity impaired. Usually the absence of menstruation in otherwise healthy young women, is associated with the absence of some of the other signs of puberty, indicating a generally tardy sexual development, just as, without apparent cause, one tree will produce blossoms and bear fruit later than another. This, however, is not always the case, and instances are sometimes met with of persons in whom pregnancy has preceded menstruation: completeness of sexual power having existed, though not manifesting itself by its ordinary sign. Such cases were a greater puzzle to physicians in former days than they are to us, who know that the discharge of blood is not the essential part of menstruation, but that the maturation and extrusion of ova may occur independently of it. One instance of it has come under my own notice, in a woman who, never having menstruated, married at the age of twenty, and immediately became pregnant; nor did the menses appear till after the birth of the first child, though she subsequently menstruated regularly, and had a numerous family. This, however, is very rare, and there would always be reason to apprehend that a woman who had not menstruated before marriage would remain sterile afterwards. Besides, it is possible that the non-appearance of the menses depends upon some congenital malformation, which might even prove a bar to sexual intercourse, such as absence of the vagina or its imperfect formation. If, then, your advice be asked as to the propriety of any young person marrying who has not menstruated, I should advise you to recommend delay; and if still further urged, to withhold your sanction until you have ascertained that no serious defect of structure is present. The pain of such an investigation would fall far short of the distress which would be entailed upon all parties, if a woman with some important malformation of her sexual organs were to contract marriage.[1]

conclusions to which it leads are the same as follow from Mr. Whitehead's more extended researches:

First Menstruation.		Unfavorable.	Percentage of Unfavorable.
Under 15, ...	228	41	17.9
Between 15 and 17, . .	220	33	15.
" 17 and 19, . .	92	22	23.9
At 19 and upwards, . .	26	11	46.1
Total, ...	566	107	25.7 av.

[1] An important case illustrative of this subject is related by Dr. Meigs, at p. 119 of his translation of *Colombat on Diseases of Females*, 8vo. Philadelphia, 1845.

Amenorrhœa from imperfect formation of the sexual organs may depend either upon causes which altogether prevent the performance of the menstrual function, or on such as merely interfere with the discharge of the menstrual fluid. Cases of the former kind are fortunately very rare, since, depending on the absence or defective formation of the uterus or ovaries, they are completely beyond the reach of remedy; those of the latter description generally admit of cure. In some of the former class of cases, the sexual character has been altogether imperfectly developed, and the woman has never experienced any periodical occurrence of symptoms such as usually prelude the appearance of the menses, while in others the women have been liable to periodical attacks of pain in the back and loins, and to all those indications of suffering by which the menstrual flux is often attended, and have presented in their outward form all the indications of perfect womanhood. It is not easy to account for all of these differences, since, in some instances, where the sexual character was but imperfectly marked, the ovaries were found after death sufficiently well formed, though the uterus was absent, or merely rudimentary.

A few cases are on record of alleged absence of both ovaries, in spite of the otherwise natural formation of the sexual organs. Such cases, however, are excessively rare, and the probabilities are that in many instances the organs were present, though in a very undeveloped condition. Somewhat less uncommon are the instances of absence of one ovary; a malformation generally associated with absence of the other uterine appendages on the same side, and sometimes also with absence of the corresponding kidney: a circumstance which will not surprise you if you bear in mind the mode of development of the urinary and generative apparatus, and the intimate relation which subsists between them at an early period of fœtal existence. Much less uncommon than the absence of either ovary is the persistence of both through the whole or the greater part of life in the condition which they present in infancy and early childhood, with scarcely a trace of Graafian vesicles in their tissue. This want of development of the ovaries is generally, though not invariably associated with want of development of the uterus and other sexual organs: and I need not say that women in whom it exists are sterile.

Two instances have come under my own notice in which there was reason to suppose that some defect of development of the ovaries was present. The first patient was a woman aged forty-three, who had been married for twenty years, but had never menstruated, nor had ever been pregnant. In her case the sexual organs were well formed, though the uterus was small, and sexual appetite existed. The other case was that of a young girl about twenty years of age, who was for some time under the care of the late Dr. Roupell, suffering from those vague symptoms of disorder of the general health which so frequently exist when the appearance of the menses is delayed. She presented the general signs of puberty, but her vagina was very small, and her uterus was not

larger than that of a young child. I do not know what became of her eventually, but it is quite possible that the evolution of her sexual organs, though long delayed, may at length have taken place, and have been followed by the due performance of their functions.

Conditions[1] such as these which I have been speaking of interest us rather as physiologists than as practitioners; we can only guess at their existence, and can do nothing for their remedy. Though not so obscure, still quite as hopeless are those cases in which the uterus alone is absent, or, as is more frequently the case, is represented by one or two small bodies, of the bigness of a bean, or even smaller, made up of true uterine tissue, rudiments, as it were, of the deficient organ. This absence of the uterus may coexist with a perfectly natural condition of the external organs; the vagina, which is usually much shorter than natural, terminating in a cul-de-sac. The only instance of this malformation which I have seen, existed in a young woman of little more than twenty years of age, who had been married but a few months, and who applied to the late Dr. Hugh Ley, in consequence of some obstacle to complete sexual intercourse. Her appearance was that of a well-developed woman, and her external genitals were quite natural, but the vagina was not above an inch and a half in length, and terminated in a blind pouch, above which no uterus could be felt, neither could any trace of the organ be discovered on examination by the rectum.[2]

Besides these cases, however, in which the non-appearance of the menses is due to a cause wholly beyond the power of art to remedy, there are others in which the ovaries are present, and perform their functions properly, in which the uterus also exists, and the periodical hemorrhage takes place from its lining; but the effused blood finds no means of escape, owing to congenital closure of the os uteri, or to the absence or occlusion of the vagina.

The non-appearance of the menses from any of these causes is unquestionably very rare, and but one instance of imperforate state of the hymen has come under my observation. To judge by the recorded accounts of such cases, however, they all present a certain general resemblance to each other, and are all characterized by the occurrence, at or soon after the ordinary period, of the usual signs of puberty, the appearance of the menses alone excepted. While these are absent, the premonitory symptoms, which in general usher them in, are experienced with even more than ordinary severity. These symptoms subside, and again recur after

[1] Numerous references to cases of absence of the ovaries, or of their imperfect development, are to be found in Chereau, *Traité des Maladies des Ovaires*, Paris, 1844, pp. 73–91; and Meissner, *Frauenkrankheiten*, vol. ii, p. 28; and Dr. Thudicum, of London, has published in the *Monatschrift f. Geburtskunde*, April, 1855, p. 272, a very careful analysis of twenty-one cases, collected from different sources, in which the uterus was either altogether absent, or merely rudimentary.

[2] Any one who wishes to study the subject of uterine malformations in all its bearings, will find ample materials collected in the elaborate work of Kussmaul, *Von dem Mangel, der Verkümmerung, &c., der Gebärmutter*, 8vo., Würzburg, 1859.

the lapse of about a menstrual interval, till, after many months, enlargement of the abdomen becomes apparent, and increases by degrees with each periodical exacerbation of the patient's sufferings.

The history of the patient, the absence of menstruation long after the period when it usually shows itself, and this in spite of the occurrence of the constitutional symptoms which generally accompany it, when coupled with the progressive enlargement of the abdomen, lead in the course of time to the cause of the symptoms being recognized, and to surgical means being adopted for their removal. Still, there are several circumstances which concur to prevent the abdominal enlargement from becoming apparent so early, and from attaining, even after a long lapse of time, to so great a size, as might at first have been anticipated. Wherever any mechanical obstacle exists to the outflow of the menses, they are almost invariably poured out in far smaller quantity than natural—a fact which I shall have again to refer to when I have to speak of some forms of dysmenorrhœa. In the next place, it must not be supposed that the blood poured out into the uterine cavity collects there uninfluenced by the vital processes which go on in the rest of the economy. On the contrary, the absorbents are very active in getting rid of the effused blood; and microscopic examinations show that it undergoes alterations of the same kind as take place in blood poured out elsewhere, and is removed by a similar process.[1] But besides this, the blood itself seems in some instances to escape through the fimbriated extremities of the Fallopian tubes into the abdominal cavity, where sometimes it is absorbed without giving rise to any dangerous symptoms, though, in other cases, fatal peritonitis has followed this occurrence.[2]

One other caution with reference to these cases may not be out of place here, and that concerns the prognosis which we may express with reference to the result of any operation for their cure. Though generally favorable, it yet must be borne in mind, that a fatal result due to the occurrence of inflammation, has sometimes followed an operation as simple as the mere division of an imperforate hymen; and that this has in some instances been produced by blood being poured through the Fallopian tubes into the abdominal cavity—notwithstanding that an opening in the vagina existed of ample size to allow of its ready escape in the natural way.[3]

[1] See the interesting account, by Dr. H. Müller, of his examination of the retained menstrual blood in two cases of congenital atresia vaginæ, in Henle and Pfeuffer's *Zeitschrift*, vol. v, 1846, p. 140.

[2] A series of papers, by M. Bernutz, in the *Archives de Médecine* for June, August, and December, 1848, and for November, 1849, bear on this subject, and may be consulted with advantage. These papers will be found reproduced in a more extended form, and with many additional observations, in the first volume of the work, *Sur les Maladies des Femmes*, 8vo., Paris, 1860, published by him in conjunction with M. Goupil.

[3] As in a case related by M. Marchand de Massé, in the *Archives de Médecine*, July, 1851, in several collected by M. Bernutz, *lib. cit.*, and in one which came under my own cognizance at Bartholomew's Hospital.

Attacks of inflammation of the sexual organs in women who have already menstruated, and have even already borne children, are sometimes followed by amenorrhœa; either from abiding mischief inflicted on the ovaria altogether putting a stop to the performance of the function, or from cohesion between the edges of the os uteri, or agglutination of the walls of its cervix, or from injury to the vagina, sloughing of its walls, and subsequent obliteration of its canal. In some of these cases, as in cases of congenital malformation, the menstrual fluid may collect within the cavity of the womb, and require to be evacuated by a surgical proceeding. Mere obstruction of the passages through which the menstrual discharge ought to flow, seems, however, to be sometimes followed by its complete suppression. I have known the menses permanently to cease after severe labor, followed by obliteration of the os uteri and adhesion between the vaginal walls, even though there was no reason for supposing that either the body of the womb or the ovaries had been the seat of any serious inflammatory mischief.

Though I have made these few remarks on the non-appearance or suppression of the menses from causes requiring surgical interference, I wish to call your attention chiefly to cases of *amenorrhœa from causes which require the interference of the physician.*

But before going into any details on this subject, I will once more remind you, that the mere postponement of the appearance of the menses beyond the time at which they usually show themselves, does not of itself call for interference, does not even warrant anxiety. Like all the other processes of development, so that of the generative system admits of considerable variations in point of time without of necessity passing the limits of health. Indeed, just as one child cuts its first tooth at seven months, and another not till a year old, so one girl may menstruate at fourteen or fifteen years of age, and another not till seventeen, without any obvious reason existing for the early performance of the function in the one case, or for its tardy accomplishment in the other. Mothers are often anxious about their children, if they do not menstruate till somewhat later than the average period; or even as that period approaches, will often attribute to its influence the most diverse symptoms of disordered health; and will urge on you the employment of emmenagogue medicines as essential to their removal.

Again, the occurrence of serious illness of almost any kind a few months, or even a few years, before the arrival of the period of puberty, will often postpone for a long time the manifestation of its signs, and, in particular, the appearance of the menses. Not long since I saw a young woman, twenty years of age, who had never menstruated, who, perhaps, never will. Her health had been good until she experienced a severe attack of scarlet fever at the age of fifteen. Her recovery from this illness had been very slow, and she was dwarfed by it in body, and apparently in mind too, and her feeble frame was unequal to the task of bringing her reproductive

powers to perfection. In idiots, with whom the imperfect development of mind is generally associated with imperfect development of body, puberty is almost always late in its occurrence. It appears, too, from the elaborate Report on Cretinism, presented to the Sardinian Government in 1848, that in extreme degrees of that condition, the reproductive powers are never developed at all; in less degrees, menstruation appears late, and continues scanty and irregular through life; while even in cases of the slightest description, the average date of the first menstruation is as late as the eighteenth year.[1]

Further, even when there is no bodily disease, nor any local cause rendering impossible the due performance of the sexual functions, it must yet be borne in mind that those functions are seldom completely performed from the very moment when they give the first indication of their activity. It oftens happens, that after the first menstruation there is an interval, not of one month, but of two or three, before the menses again make their appearance; or, perhaps, that the signs premonitory of menstruation are followed by a discharge, not of blood, but of mucus, the *menstruæ albæ* of old writers. We know that such discharges, though once regarded as morbid, are far from being necessarily so. If the congestion of the uterus attending the menstrual effort be slight, the quantity of blood poured out from the organ will be but small, and mucus and epithelium corpuscles will then make up the bulk of the discharge. In such a case, however, menstruation may be as really performed, as in the woman from whose sexual organs hemorrhage takes place with the greatest abundance. Time rarely fails to bring the function, in a few months, to the strictest conformity, in all respects, to those laws by which it is governed in the healthy and fully developed woman.

Still, after every allowance has been made for cases of mere tardy development, and for those in which the complete performance of the sexual functions is accomplished by degrees, as well as for others in which the activity of the reproductive powers is postponed almost indefinitely by previous bodily ailment, there yet remain a number of instances where the non-accomplishment of the menstrual process, at the time when the changes of puberty are usually completed, is the prominent symptom of disordered health, and seems to be the chief occasion of all the various forms of illness with which it may be associated.

There are *two* different *classes of symptoms*, with one or the other of which the non-appearance of the menses is in these cases usually associated—symptoms differing widely in their general characters, but probably far less widely separated in their essential causes. In the one case the *condition* is apparently *of plethora*, in the *other of anæmia;* but the tendency of the former is to pass into the latter, and this transition often takes place very rapidly.

[1] *Rapport de la Commission crèe par S. M. le Roi de Sardaigne pour étudier la Crétinisme*, 4to., Turin, 1848, see p. 25.

A girl, previously in good health, approaches the time of puberty; some of the changes characteristic of it take place, the form assumes the contour of womanhood, and nothing but the occurrence of menstruation is wanting to announce the completion of the change. The menses, however, do not show themselves, but the girl begins to suffer from frequent headache and a flushed face, frequent backache, pain in the hypogastrium, and constipated bowels, a furred tongue and a full pulse, and all these signs of constitutional disorder undergo a marked increase at stated periods of about a month. At length menstruation occurs, though in all probability scantily, and attended with much pain, and then for several months together there is no sign of its return; or, perhaps, when the proper period comes round again, the bleeding, instead of taking place, as it ought to do, from the womb, occurs from the stomach, or, less frequently, from the intestines. The general health was at first probably not seriously disturbed, or at least its disorder was limited to certain times of peculiar suffering, but by degrees the patient becomes habitually ailing, the appetite falls off, the powers of digestion are weakened, the strength becomes unequal to ordinary exertion, the pulse grows feeble and frequent, and the face itself assumes the pallid sallow tinge whence the term *chlorosis* has been selected as the most appropriate designation of the condition; while the stethoscope detects a peculiar sound attendant on the passage of the blood through the cavities of the heart and along the arterial and venous trunks, and which is known to be significant of changes in its composition, often of diminution of its quantity.

In other instances, the signs of plethora have not at any time been present, but the health, never very robust, fails more and more as the period of puberty approaches; the feeble pulse, the cold skin, the bloodless countenance, the deficient and depraved appetite come on by degrees, while the outward signs of puberty appear slowly and imperfectly. The frail child never passes completely into womanhood, but fades and droops in the transition stage, through which she has not strength to pass.

In cases of both these kinds there is unquestionably a certain degree of obscurity, though scarcely more than we should find in the endeavor to explain how in infancy the state of the general health influences dentition, or the process of teething reacts on the general health. The weakly child cuts its teeth painfully, tardily, irregularly; and there seems to be no essential difference between cases in which the health falls off before any teeth have actually appeared, and those in which the symptoms come on after one or two of the teeth have cut through the gum. In both cases we look beyond the local phenomena for the explanation of the symptoms; and we do the same in the girl at puberty as in the infant in whom the period of dentition has commenced.

In the case of the girl at puberty there seems, however, to be another element to be taken into consideration,—namely, the composition of the blood. Of all the various processes of development

which at different times go on in the system, none seem to make such great demands upon the circulating fluid as those which concern the reproductive organs. During pregnancy, even in a healthy woman, certain changes in the blood (a diminution of its red particles, an increase in its watery elements) are of constant occurrence; while in some instances these changes are so considerable as to give rise to disorder of the general health precisely similar in all its characters to chlorosis.[1] The growth of the womb, the development of the fœtus, are, indeed, accomplished, for they are subject to a law not easily broken through; but they are accomplished at the expense of the woman's constitution, and leave her often incapable of suckling her infant, and probably liable to all that class of inflammatory affections, the remote cause of which, as of phlegmasia dolens, for instance, is to be sought in some morbid state of the blood.

To originate a new function, to bring to perfection a hitherto unexercised power, makes larger demands on the strength than are required for its continued activity. The feeble phthisical child fails, as the time of womanhood approaches, to menstruate, and the signs of chlorosis gradually manifest themselves in her, while in spite of advanced tubercular disease, the grown woman sometimes continues to menstruate with regularity, or even to bring forth children. These, however, are, it must be confessed, exceptional occurrences; the tendency of almost all diseases which originate in, or in their course produce important alterations in the blood, is to disturb, to impair, and at length to interrupt the performance of the reproductive functions. In one instance only,[2] out of all the cases of phthisis among women that form the materials of M. Louis' great work on that disease, did menstruation continue up to the time of death; and it suffices to watch with moderate care any one suffering from uterine cancer in order to feel satisfied, that even though hemorrhage may still occasionally take place from the diseased womb, yet the periodical activity of the reproductive organs ceased when once the cancerous cachexia had become developed.

There is another peculiarity connected with the sexual functions in woman which must not be left altogether without notice, since it suggests a reason why their tardy or imperfect development, or their subsequent disorder, should be associated with symptoms to which we nowhere else find the slightest analogy. It is a law of the female economy that for some thirty years of life, unless interrupted by pregnancy or its results, a certain quantity of blood shall be periodically discharged from the system. This periodical

[1] The merit of the first observations on chlorosis in pregnancy must be divided between M. Cazeaux, of Paris, and the late Professor von Kiwisch, of Prague, though the claims of the latter appear to be the stronger. The best remarks on the subject will be found in Cazeaux, *Traité des Accouchemens*, Paris, 1850, pp. 291–301; Kiwisch, *Die Geburtskunde*, Erlangen, 1851, vol. i, p. 227, and vol. ii, p. 33; and Scanzoni, *Lehrbuch der Geburtshülfe*, Vienna, 1849, vol. i, p. 192.

[2] Louis, *Recherches sur la Phthisie*, deuxième ed., 8vo., Paris, 1843, p. 334.

discharge alone engaged the attention of observers in bygone times, and various hypotheses were framed, which, differing in other respects, yet agreed in this,—that they all regarded the menstrual function as a great depurative agent, a means supplemental to the lungs themselves, for eliminating superfluous carbon from the system. Though we, with the light of modern physiology, are able to look deeper than our predecessors, and can see in the discharge of blood from the sexual organs the outward sign of a still more important process going on within, we yet must not forget that it cannot be a matter of indifference to the health of a woman whether excretion of four or six ounces of blood takes place every month, or not; that the arrest of this phenomenon or its non-occurrence cannot but be associated with much constitutional disorder. We find, indeed, that even when, with the lapse of years, the time arrives at which the discharge naturally ceases, its cessation is almost invariably followed by a class of symptoms which show that the balance of the circulation has been disturbed, while many months are often needed to complete its readjustment. The liver now has extra work to do in the depuration of the blood, its disorders are now more frequent than at other times, and though hemorrhages not infrequently take place which relieve the overtasked organ, yet they often pass the limits of health, and become themselves a fresh cause of suffering, or even an occasion of danger.

But the very accidents to which there is a disposition when menstruation ceases, may also precede its occurrence. If menstruation is postponed beyond the ordinary period, the system suffers in the same way as it often does at its cessation. The same double duty is thrown on the liver, the same disposition to its disorder exists, the same tendency to congestion of different viscera manifests itself, and frequently the same outbursts of hemorrhage give temporary relief to the congestion, too often also at the expense of the general constitutional vigor. No one who is familiar with the symptoms that are often associated with granular degeneration of the kidney will be at a loss to understand how local plethora may be associated with an altered and impoverished condition of the circulating fluid, or will fail to see how it may sometimes happen that leeches, purgative medicines, and active exercise, may take that place in the cure of amenorrhœa which tonic remedies, ferruginous preparations, and wine occupy in general.

The exact mode of applying these principles in cases where menstruation has never occurred, must vary much in different instances, though in all, our chief endeavor must be directed to the establishment of that function through the medium of the general health, rather than by means of remedies acting or supposed to act, immediately on the sexual system. While, then, the tardy occurrence of puberty, just as the tardy appearance of the teeth in infancy, furnishes, when unattended by constitutional disorder, no indication for medical interference, the first question that in these cases presents itself is, whether the symptoms which accompany

the amenorrhœa are those of simple debility or of that kind of plethora which may yet be associated with an altered and deteriorated state of the circulating fluid.

But though the decision of this point, with a view to the adoption of a suitable constitutional treatment, claims our first attention, there is yet another which must not be wholly lost sight of. When its establishment is long postponed, the performance of the menstrual function generally takes place painfully, difficultly, and for a long time imperfectly, while, as already mentioned, it sometimes happens that the blood which is not poured out from the uterus makes its escape through other channels; such a discharge, too, vicarious of menstruation, sometimes continues to recur for months together, not merely injuring the patient's health, but, through the mysterious influence of habit, offering a serious impediment to the proper performance of the menstrual function. How, and why this is so, I will not pretend to explain. Deficient innervation of the sexual organs has been assumed to be its cause by some; while others have spoken of some special density of the uterine tissue, preventing the ready outflow of blood; or of some peculiar thickness of the blood itself, which therefore could not escape from the pores that otherwise would give it exit. Statements of this kind, however, are but the expression of very crude hypotheses; they add nothing to our knowledge, they do not even present it to us in a clearer form. What we have to do with is the fact, that there are certain periods more or less well marked in the regularity of their return, when a special disorder of the nervous and vascular systems, and various forms of local suffering, referred more or less distinctly to the womb or to the parts adjacent, announce a sort of imperfect menstrual effort, and that at those times various local measures addressed to the uterus are not infrequently succeeded by the establishment of menstruation, though the same measures, if had recourse to at another time, would be altogether unavailing, or even positively mischievous.

Treatment then resolves itself into what is to be done for the improvement of the general health, and what is to be done on special occasions with a particular view to the excitement of the uterine function; while it follows as a necessary corollary, that when no sign of menstrual effort shows itself, then no local measures are indicated. In cases where general debility characterizes the patient's condition, tonics in the widest sense of the term are indicated; and by them I understand not merely tonic medicines, or preparations of iron, though they will almost always be appropriate, but the tonic influence of pure air, healthful pursuits, and exercise short of fatigue. In these cases, too, the one great danger to watch against, is that of the supervention of phthisis, and a winter's residence at Torquay or Ventnor is useful in many instances, not only as a means of guarding the delicate lungs from the cold of many inland places, but also because the warm climate and the sea air appear of themselves to have a beneficial influence in favoring the healthy development of the reproductive system.

The constipated state of the bowels, which is so troublesome a symptom in these cases, must be encountered, not by drastic purgatives, but by gentler aperients, among which the watery extract of aloes has a well-merited reputation. In some instances all preparations of iron have the effect of increasing the sluggish state of the intestines, but this difficulty can in general be got rid of by combining the iron with some aperient salt.[1] At other times the delicate stomach is unable to bear the mildest ferruginous preparation, and in these circumstances, chalybeate mineral waters will often produce good effects, far beyond what might be anticipated if we regarded merely the quantity of the remedy they contain. The waters of Spa and Pyrmont are especially suitable to cases of this description; the former being the milder and better borne by patients whose digestive power is very feeble. Both these waters are very well prepared at Brighton, but patients of this description benefit as much by the change of scene, the healthful exercise, the sort of busy idleness of a watering-place, as by the virtues of the spring to which it owes its reputation.

Even when a state of apparent plethora predominates, much the same kind of treatment is nevertheless appropriate; with the exception, however, that the preparations of iron are often not needed at all, while a much more active system of purgation is generally indicated. A nutritious, though not a stimulating diet, the shower-bath, and horse exercise, are remedies of greater power than any which Apothecaries' Hall contains. The sluggish state of the liver, which constitutes one of the great difficulties that in these cases we have to contend with, must not lead us to the too frequent use of mercurials, especially of mercurial purgatives. There are some exceptional cases, however, where other remedies fail to excite a due secretion of bile, in which the steady employment of small doses of bichloride of mercury, persevered in for several weeks, while a general tonic plan of treatment in other respects is continued, proves of most essential service.

But while the general health must be administered to by means such as I have just described, the appearance of any attempt at menstruation, as it indicates a different object to be aimed at, so calls for an immediate change in the remedies to be employed.

The patient should be kept quiet, and if there be any considerable suffering, or much disturbance of the circulation, it is desirable that she should remain in bed, while the hot hip-bath, night and morning, rendered still more stimulating in cases where the local pain is not very considerable by the addition of some mustard, will often have the effect of inducing the menstrual flux. It is at this time that the stimulant diuretics, such as nitrous ether,

[1] (No. 1.)

℞. Ferri Sulphatis, ... gr. ix
Magnesiæ Sulphatis, . . . ℥iij
Acid. Sulph. dil., ... ℥ss
Syrupi Aurantii, ... ℥iv
Aquæ Carui, ad, ... ℥vi—M. ℥j bis quotidie.

turpentine, spirits of juniper, or the domestic emmenagogue gin, sometimes prove useful, and by increasing the congestion of the pelvic viscera, induce a hemorrhage from the uterus, and relieve the patient from much suffering. Much care, however, is needed in the employment of any of these remedies; while all violent measures, such as the administration of cantharides, or of the oil of savin in large doses, or of very powerful local stimulants, such as vaginal injections of liquor ammoniæ mixed with milk, or the introduction of nitrate of silver into the uterine cavity, by means of Lallemand's *porte-caustique*, appear to me to deserve reprobation, as both uncertain and unsafe. Electricity, applied by means of the ordinary electro-magnetic apparatus, one disk being placed over the pubes and the other over the sacrum, has in some cases been of service, though its results, just as when employed for other purposes, appear to vary much, and causelessly. It was at one time anticipated that the ergot of rye would prove a very valuable emmenagogue, and indeed it was employed as a popular means of inducing menstruation, long before its introduction into obstetric practice. Though it has been tried, however, in various forms of powder, tincture, infusion, and essence, and though experiments have been made with its essential principle, the *ergotine*, yet its peculiar power over the muscular activity of the womb does not appear to extend to any other function of the sexual organs.

In some instances, the pain experienced in the uterine region with the return of each menstrual period, is very severe indeed; and in such cases, while stimulating hip-baths are out of place, the application of leeches to the hypogastrium not only relieves the pain, but is often followed by the occurrence of menstruation. The explanation that used to be given of this fact, founded on the circumstance that excessive congestion of a secretory organ often puts a stop to its activity, is scarcely applicable now that we know the menstrual discharge to be a simple hemorrhage, not a secretion. The fact, however, still holds good, and the practice founded on it is worth remembering.

I have already referred to the occurrence of hemorrhage from various organs as an occasional attendant on amenorrhœa, and have suggested an explanation of its cause. Medical writings[1] are full of illustrations of this vicarious menstruation, as it is often, though not quite correctly, termed; and from them it appears that the hemorrhages may occur, not merely from any of the mucous surfaces, as the stomach, intestinal canal, or air-passages, but also from any casual wound, from the surface of an ulcer, from the nipple, from the eye; in short, from almost any conceivable part of the body. Now it is no part of my object to occupy your time with a detail of these mere medical wonders; but there are several things with reference to them which I wish you to bear in mind.

[1] Abundant references may be found in Brierre de Boismont, *De la Menstruation*, &c., 8vo., Paris, 1842, chap. vi, p. 374; and in Meissner's *Frauenkrankheiten*, 8vo., Leipsig, 1845, vol. ii, p. 860.

The first is, that after the arrival of the period of puberty, the non-appearance of the menses, or their accidental suppression, is likely to be followed by occasional outbursts of hemorrhage, which by no means invariably correspond with any real activity of the sexual organs, or observe any distinct periodicity of return. Next, it is to be remembered that such discharges, not being genuine menstruation, may nevertheless take place from the uterus, and amenorrhœa and a seeming menorrhagia may alternate with each other. Such hemorrhage, too, may be extremely profuse; and even within my own observation it proved fatal to a young lady, in whom it succeeded to long-continued suppression of the menses, and whose uterus as far as could be ascertained by examination during life, was perfectly healthy. Lastly, the occurrence of this hemorrhage does not in any material respect alter the indications which we are to pursue in our treatment, or the means by which we must endeavor to accomplish them. If so profuse as to be hazardous, the discharge must be checked by appropriate means; but it is to the state of the general health, and the excitement of the true menstrual function, that our chief care must be directed. Habit, "the memory of the body,"[1] as John Hunter beautifully terms it, while it plays a prominent part in many of the functions of the animal economy, exerts over none so powerful an influence as over those of the sexual system of the female. The hemorrhage vicarious of menstruation, in its first occurrence perhaps the result of mere accident, needs but to return two or three times for its cure to become difficult. After a time, even though the general health may be perfectly good, and though the ovaries, as far as we can tell, perform their office properly, yet with each return of that excitement of the circulation which should relieve itself through the medium of the uterus, the long-established habit interferes, and bleeding takes place from the lungs or from the stomach, or from the surface of the body, instead of from the womb.

But the application of this fact is wider than to the mere determining the prognosis of cases of hemorrhage vicarious of menstruation, though it will at once be obvious that they admit of cure easily, or with difficulty, in almost exact proportion to their duration. The principle which it involves is to be borne in mind in the management of all the ailments that disturb the menstrual function. It is not enough to take precautions till menstruation has for the first time occurred; the period for its return should, even in the healthiest girl, be watched for, and all previous precautions should be once more repeated; and this should be done again and again, until at length the *habit* of regular, healthy menstruation is established; and if this be once secured, the risks of its subsequent disorder will be very much lessened. Need I say that this truth bears with tenfold force on all cases in which menstruation has been tardily, painfully, or difficultly accomplished; for in these

[1] *Works*, Palmer's edition, vol. i, p. 274.

the bad habit has to be broken through, and a new one formed. If this be not accomplished during the first few years of womanhood, it will, in all probability, never be attained.

LECTURE IV.

MENSTRUATION AND ITS DISORDERS.

AMENORRHŒA, continued—Suppression of the Menses—Their premature cessation—Irregularities before final extinction of function—Various causes suspending the menses—Treatment.

MENORRHAGIA—Its two principal causes—1st, constitutional; 2d local—illustrations of each

Treatment of both classes of cases—general precautions—cases requiring antiphlogistic measures—cases requiring tonics and astringents—local remedies—conditions calling for the plug, and for intra-uterine injections.

WE were engaged during the last Lecture with the study of those cases in which the menstrual discharge has never made its appearance. Another, and equally important class, still remains for consideration, in which *menstruation* is either *interrupted or suppressed.*

It is of course out of the question to attempt an examination of all the various circumstances that may give rise to suppression of the menses, or that may lead to their permanent cessation; for a very large number both of constitutional disorders as well as of local diseases tend directly to produce this result. Reference has already been made to the remarkable influence of phthisis in its more advanced stages in leading to suppression of the menses, and many other cachectic diseases exert a similar influence on the menstrual function; while severe uterine or ovarian inflammation, various forms of ovarian degeneration or of uterine tumor, often suspend menstruation for months together, sometimes put a final stop to its occurrence, many years before, in the natural course of events, the sexual powers would lose their vigor.

But besides those cases in which a definite reason can be assigned for the arrest or cessation of the menstrual discharge, there are others occasionally met with, in which it disappears as the result of a premature senescence, just as we have observed it sometimes to come on late in life in consequence of the tardy occurrence of puberty. Thus while the average duration of the menstrual function is about thirty years, and the age of its cessation in the majority of instances, at or a little after forty-five, it has been known to continue less than ten years, and to cease before the age of thirty, and this, too, without any peculiarity in the history of the woman suggesting an adequate reason for so wide a deviation from the ordinary rule.[1]

[1] Elaborate tables showing the duration of menstruation, and the age at its cessation, are to be found in Brierre de Boismont, *op. cit.*, pp. 209, 211; in Dr.

To a great extent the date of the cessation of the menstrual function is, I apprehend, a matter of indifference, and just as some persons of our own sex retain sexual vigor to extreme old age, while with others it soon grows feeble or becomes sluggish, so women may long retain their reproductive powers, or may lose them early, without their health being better in the one instance, or less good in the other.

Cases, however, are sometimes met with, in which a permanent cessation of the menstrual function is associated with the same state of health, the same condition of general debility, as I have already referred to when speaking of the non-appearance of the menses, and accompanied with all that collection of symptoms which constitute chlorosis. In these circumstances the same general treatment, the same chalybeate remedies as are suited to the young girl, find their fit application in the illness of the matron, and generally with the result of improving the health and reproducing the menstruation.[1] Sometimes, indeed, though the health amends under appropriate means, yet the sexual functions are never re-established; a result with which, although far from usual, it is nevertheless important that you should be acquainted.

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But there are many instances in which, though menstruation is not finally arrested, yet the function is suspended for a time, and this accident is attended by very various degrees of constitutional disorder. At the commencement of sexual activity and towards its close, menstruation is often irregular, in the one instance owing to the organs not having arrived at perfection, in the other owing to the gradual loss of their power. So frequent, indeed, is this irregular menstruation as a prelude to its final cessation, that women have a homely phrase, the "dodging time," by which they designate the period of its occurrence. I have already told you how in the former case you must watch over the function, and endeavor to bring on by degrees its regular performance. In the latter, you must confine your attention to the general health, without endeavoring to re-excite the activity of organs which are thus giving evidence of their waning powers.

The irregular menstruation in the above case is almost a physiological occurrence; its suppression, in other circumstances, may be due to a great variety of causes; it may be owing to pregnancy —to pregnancy unsuspected by the person who seeks your advice. I refer to this chiefly in order to remind you that in every case of causeless suppression of the menses, just as in every case of abdominal tumor in women, you must bear in mind the possibility of

[1] Whitehead's *Treatise on Sterility and Abortion*, &c., 8vo., London, 1847, p. 150; and in Dr. Tilt's work on the *Diseases of Women*, 8vo., 2d ed., London, 1853, pp. 44 and 46. My own observations on the subject correspond with these in showing the differences to be very wide indeed in this respect between different and apparently equally healthy women. In my cases the age at cessation of the menses varied from twenty-six years in one instance, and thirty-one in another, to fifty-eight in the instance in which it continued longest, while the actual duration of the function was only eight years in one person, and extended to thirty-eight in another, in whom it lasted for the longest time.

pregnancy. I do not mean by this that you are to doubt every woman's word, or to question every woman's chastity, even in thought, but that, bearing in mind how little you can know of the intimate history of many of your patients, you must not allow your respect as men, your gallantry as gentlemen, to make you quite lose sight of what may much import you as physicians.

Independently of pregnancy, however, mere sexual intercourse not infrequently arrests menstruation for a time, so that in recently married women, the existence of pregnancy is sometimes suspected for two or three months, till, at the end of that time the hopes are dissipated by the unwelcome return of the menstrual discharge. Habitual sexual excesses, though they sometimes have an opposite effect, and induce menorrhagia, yet, in the great majority of cases, suppress menstruation altogether, or render its return irregular, and the quantity of discharge small.[1]

Any sudden shock, either acting locally on the uterine organs, as the application of cold to the vulva, or through the medium of the general system, as when a person gets wet-footed, or suffers during menstruation from exposure to wet or cold, will often check the menstrual flux. In many of these cases, too, the sudden arrest of the discharge is followed by extreme uterine pain and tenderness, by all the symptoms of intense uterine congestion, sometimes, indeed, by actual uterine inflammation. The mind, too, reacts upon the body, as we see perpetually illustrated in the case even of those functions that might be supposed most independent of its influence, and many instances might be related of sudden grief, or fear, or anger, at once arresting the menstrual discharge.

But various though its causes may be, yet the treatment of suppression of the menses rests for the most part on very simple principles, and those the same in almost all instances. Two points require attention: first, to re-excite menstruation at once, if possible; second, to provide for its re-establishment when the proper period once more comes round. If the hot hip-bath, or a warm bath, bed, and a cordial or diaphoretic, fail to reproduce the menses when suddenly checked by cold, or by any other cause, we must wait patiently till the next menstrual period comes round, unless indeed urgent symptoms supervene, betokening great congestion or inflammation of the uterus, and they may require free local depletion, or even venesection, and other active measures to arrest their progress.

With the return of the ensuing menstrual period, the greatest care must be taken to secure the proper performance of the function, by the use of all those means which I mentioned in my last lecture, when speaking of amenorrhœa. The importance of doing this cannot be overrated, since many cases of habitual dysmenorrhœa, due probably to a state of chronic irritation or inflammation

[1] See on this subject the remarks of M. Parent-Duchâtelet,—*De la Prostitution dans la Ville de Paris*, vol. i, p. 228.

of the ovaries, date back to some accidental suppression of the menses; and the suffering has been confirmed by want of due care at the return of the next few periods.

It is no part of my plan to occupy your time with passing minutely over ground already often trod before; and, therefore, in considering the different disorders of the menstrual function, I shall content myself with pointing out to you the grand principles by which your management of them must be regulated, rather than attempt to enter into detail concerning any.

This being so, we may now pass from the consideration of cases in which the menses have been scanty, or suppressed, or have failed to appear in due time, to the study of disorders of the menstrual function of an exactly opposite character,—to cases of what is termed *menorrhagia*, or excessive menstruation.

This excess of menstruation may show itself either in the great profuseness of the flow, or in its long duration, or in its frequent return. It is, as you will find hereafter, by no means a matter of indifference, in which of these respects the excessive menstruation first or chiefly shows itself, since from these variations important conclusions may often be drawn, both as to the cause of the ailment and its means of cure. It must, however, be borne in mind that menstruation seldom continues long to be excessive in one respect alone; but if the menorrhagia be not speedily checked, the patient will menstruate not only in greater quantity, but for a longer time, and at shorter intervals than natural.

Divisions and subdivisions of menorrhagia into many different kinds, have been needlessly multiplied. The only classification that seems to me of real practical utility, is that which recognizes two forms, depending, either—

1st, On some cause seated in the constitution generally.

2d, On some affection of the sexual system.

This distinction should never be lost sight of in practice, though we may seldom meet with instances in which the actual line of demarcation is drawn with the same precision as we attempt to observe in our nosologies.

One caution is, perhaps, worth giving, before I say anything more about menorrhagia. It is, that every excessive hemorrhage from the unimpregnated uterus, during the years of sexual activity, is not necessarily menorrhagia. Women themselves are apt so to regard all losses of blood during that period of their life, and practitioners are too often guilty of the same oversight. Menorrhagia is an excess of menstrual discharge, an over-abundant hemorrhage, the cause of which, in the first instance, is that congestion of the sexual organs which attends the maturation and escape of an ovule from the ovary. As I mentioned yesterday, outbursts of bleeding may take place from the womb in some cases where the menses have been long suppressed, affording relief to the system, or even, by their excess, jeopardizing the patient's well-being, and this with no more real reference to the function of which menstruation is the sign, than exists in a case of hemorrhage from the bowels, or

of bleeding from hemorrhoids. In the same way, too, a patient may bleed to death from a cancer of the womb, or from a polypus, or from a fibrous tumor of that organ, and yet such hemorrhage may be no real menorrhagia.

In this case, again, the distinction cannot always be drawn, for the incipient uterine disease may at first have betrayed its existence by the excessive congestion of the sexual system, and consequent abundant discharge of blood at a menstrual period, but, with the advance of the mischief, bleeding may take place at any time, and independent of any special occasion of uterine excitement. I need not say that a distinction does not cease to be useful because it is not always practicable to make it.

But to return,[1] *menorrhagia* was stated to *depend* in some instances *on causes acting through the medium of the general system*. Thus, for instance, some years ago I saw a widow lady of about forty years of age, whose time was divided between a sojourn in this country for two or three months at a time and a residence during the other part of the year in a somewhat damp situation in Ireland. Menstruation was always regular in the time of its recurrence and natural in quantity during her stay in this country, but for some two or three years her return to Ireland had been followed by an excessively profuse discharge at each menstrual period, and by its continuance for more than twice as long as usual; symptoms which subsided once more after a few weeks' stay in England. How the change of climate acted in this case it is not possible to say, though illustrations of a somewhat similar influence of locality in modifying the uterine functions are far from unusual.

Cases are sometimes met with in which an altered state of the circulating fluid, such as even our rough chemistry can detect, coexists with and appears to be the exciting cause of menorrhagia. In cases of granular degeneration of the kidneys, menorrhagia is far from being of uncommon occurrence. The altered, attenuated

[1] Premature menstruation, *menstruatio præcox*, has been classed by some writers as a form of menorrhagia. I have preferred, however, passing over the subject, since cases of precocious puberty in either sex concern the physiologist rather than the physician. Two remarks only suggest themselves as in place here. First, that those instances in which the sexual system has been stimulated to premature activity by various injurious influences both physical and moral, are not genuine cases of precocious puberty; and second, that neither are all cases to be so regarded in which once, or oftener, sanguineous discharges have taken place from the sexual organs of infants and very young female children.

Cases of genuine precocious puberty, in which the whole body has undergone in early childhood the various changes that usually take place in later years, and announce the arrival of womanhood, are far less common than the numerous references to be found to their occurrence in medical works would at first lead one to imagine. A very sound criticism on many of the earlier cases is to be found in Naegele, *Abhandlungen, &c., aus dem Gebiete der Krankheiten des weiblichen Geschlechtes*, 8vo., Mainz, 1812, pp. 312–328. Numerous references, though some of them are of doubtful authenticity, are to be found in Meissner, *Frauenkrankheiten*, vol. ii, 8vo., Leipsig, 1845, p. 723–739; and in Busch, *Das Geschlechtsleben des Weibes*, vol. iv, 8vo., Leipsig, 1843, § 243, pp. 459–465; and, lastly, an interesting case, with very sensible remarks on many previous histories of cases of premature menstruation, will be found in a small tract of 47 pages, by Dr. Reuter, *Ueber die Præcocität der Menstruation*, 8vo., Wiesbaden, 1846.

blood seems to escape more readily than natural from the uterine vessels when they are congested at the return of a menstrual period; and three or four cases of supposed disease of the womb have come under my notice, in which the most careful examination could detect no local cause for the profuse menstruation, but in which the urine was discovered to be loaded with albumen. The hint which this fact suggests as to the expediency of examining the urine, even though no symptoms should seem to point to the existence of renal disease, is worth remembering, and the test-tube will sometimes help to clear up an obscure case of supposed uterine ailment. You are not to be specialists, even though chance should lead you to have most to do with one special class of ailments, but you are to be physicians, and in proportion as you learn to estimate aright the influence of the disorders of one part on the functions of another, will you be likely to prove good and successful practitioners in the treatment even of local diseases.

Somewhat similar in their nature are those cases of menorrhagia met with most frequently towards the decline of sexual activity, in which, with general disposition to plethora of the abdominal vessels, a sluggish liver, and constipated bowels, menstruation is sometimes irregular in its occurrence, often anticipates the proper date of its return, and is often excessive in its quantity. Such hemorrhages are not of necessity menstrual, though they usually take place at or near a menstrual period, the congestion of the womb which then exists favoring the occurrence of profuse bleeding at that time from the uterus rather than from any other organ.

A tendency to hemorrhage is a frequent attendant on many conditions of debility, and we look, probably with propriety, on some change and deterioration in the circulating fluid as accounting both for the general feebleness, and for the local accident. In women whose strength has been exhausted, or whose blood has been impoverished by prolonged lactation, the reappearance of the menses often takes place with an undue abundance of discharge, often in such quantity as to constitute real menorrhagia; while in many instances the long duration of the hemorrhage is at least as trying to the patient as the profuseness with which it flows. Here then is another illustration of menorrhagia from constitutional causes.

These cases, indeed, are so frequent in their occurrence, and often cause so much anxiety, as to claim a moment's special notice. A woman who has reached the period at which menstruation commonly ceases, finds that, independent of any cause to which to attribute it, the flow becomes far more profuse than was its wont. It lasts longer, is more abundant during its flow, and often returns more frequently than before; but it is unattended by pain, and is not succeeded by purulent or mucous leucorrhœa, though a sero-sanguineous discharge not infrequently continues in the intervals of menstruation, or is induced by very slight exertion. The absence of all local discomfort often leads the patient to postpone any treatment for months, under the impression that the ailment

will soon disappear with the spontaneous cessation of menstruation, until at length the daily increasing weakness, the dyspnœa on slight exertion, the swollen ankles and impaired digestion, urge her to seek relief from symptoms which even then she scarcely connects with the perpetually-recurring bleeding. Such patients come to the out-patient rooms of hospitals, or even present themselves in the consulting-room of the practitioner, after long delays, with the worn aspect, the pale and sallow countenance which at once raise the suspicion that they are suffering from malignant disease. This suspicion, too, is not infrequently strengthened by the statement that the discharge is occasionally fœtid—a condition by no means unusual in cases of long-continued hemorrhage, if the blood is not washed away from the vagina by daily syringing. In every instance of the causeless occurrence of menorrhagia in advancing life, the probable existence of cancer must not be lost sight of, since to that, or to the presence of small fibrous tumors or polypi, the hemorrhage is often due. In these special cases, however, no uterine disease exists, though sometimes, from the perpetual afflux of blood towards it, the womb is increased in size. Often the organ is no larger than natural; it is not hard, nor in any respect unhealthy, and one feels at a loss to account for such grave functional disorder with such complete absence of local mischief.

But though in cases such as these the sexual system is not the part first in fault, yet no serious disorder of its functions can take place, still less can recur frequently, without being accompanied by some sign of uterine ailment. A sense of weight in the pelvis, a feeling of bearing down and sympathetic pains in the back, tell that the uterus is heavier than natural, and that its vessels, from habitual congestion, are overloaded with blood; while the mucous discharge which persists in the intervals between the menstrual periods is but the effect of the same condition, which, increased at the time of each ovarian excitement, gives rise then to the profuse outflow of blood. Moreover, since the menstrual effort returns every twenty-eight days, the congested womb has not time to recover itself between each period. The blood has scarcely ceased to flow before it is again determined to the organ by a renewed ovarian excitement; and, its tissue being looser, its vessels more dilated on each succeeding occasion, allow more and more readily of the escape of blood, till at length no interval is left at all, but the flow goes on constantly, and menstruation is marked only by a larger hemorrhage than takes place at other times. The influence of habit, too, to which I referred when speaking of amenorrhœa, is not less marked in cases of menorrhagia, tending to perpetuate the evil, and to render its removal difficult, long after the cause to which it was originally due has ceased to be in action.

Some inferences applicable to practice may be deduced from what has already been said.

1*st*. The importance of determining whether the cause of the menorrhagia is to be sought in the state of the general system or of the sexual organs.

2*d*. The necessity of bearing in mind that even when the ailment depends on a constitutional cause, it will yet be attended by certain local symptoms; and further, that the latter may persist long after the removal of the former.

3*d*. It follows as a corollary from the two preceding statements, that it is essential in every case of long-continued menorrhagia to determine by careful examination the presence or absence of local disease; and this the rather since the early stages of organic uterine affections are not only often accompanied by menorrhagia, but also are often unattended by any other symptom.

But there is a *second* class of cases in which *menorrhagia* occurs as the *result of some cause acting directly on the sexual system*. We meet sometimes with instances of what seems like a special susceptibility of the sexual system, in which any sudden excitement, even though unconnected with the sexual functions, is followed by hemorrhage lasting perhaps only for a few hours, or for a day, but sometimes continuing longer, and even passing into regular menorrhagia; while in all patients who are liable to this accident, menstruation is almost invariably profuse. A similar effect is produced by causes acting directly on the sexual system; and hence, while in some cases we find the unaccustomed stimulus of sexual intercourse lead to suppression of the menses, we also observe it in other instances followed by their excess. Menstruation in these cases generally continues to observe its proper periods of return, but lasts on each occasion much longer than natural; while abstinence from intercourse for a season, and moderate use of it afterwards, are almost always followed by the menstruation resuming its natural character. More difficult of cure, however, are those cases in which, from some cause or other, the marriage is sterile, and especially those in which, from disparity of years, or from constitutional feebleness on the husband's part, the act is but imperfectly accomplished. In these circumstances a sort of chronic ovarian irritation and chronic congestion of the womb are kept up, which lead to a degree of hypertrophy of the uterine substance, and to profuse bleeding from its lining membrane. Menorrhagia, too, not seldom occurs in prostitutes from the constant over-excitement of their sexual organs, and its cure is almost impossible by any means short of the complete abandonment of their habits.

The local causes, however, which may give rise to menorrhagia are manifold. Whatever produces undue ovarian excitement, whatever causes undue uterine congestion, is likely to occasion it, while any circumstance that renders the womb larger, its texture looser, its vessels of greater size than usual, by just so much facilitates its occurrence. Premature exertion after delivery is often followed by hemorrhage. If this hemorrhage is not speedily checked by treatment, and its return guarded against by watchful care, it soon assumes the menstrual type, and soon also becomes excessive in quantity, from the very circumstance that it takes place from an organ in which the processes of involution are as

yet incomplete, and whose vascular supply is much more abundant than it would be if menstruation were delayed till the lapse of the ordinary period after delivery. From a similar cause the foundation of menorrhagia is often laid in a want of due care at the time of the first appearance of the menses after a miscarriage; an occasion, by-the-bye, on which you should not fail to impress on your patient the need for what may seem to be almost exaggerated precaution. This condition of the womb, too, sometimes persists for long periods after the delivery or the miscarriage to which it was originally due; or in weakly persons exists even independent of any appreciable cause, and this to so great an extent that the uterine sound may sometimes discover the length of the uterine cavity to vary as much as half an inch within the course of a single week. This state of relaxation of the tissue of the womb likewise coexists very frequently with a granular, abraded, or ulcerated condition of the os uteri; local affections which, slight though they may seem, yet help to keep up an habitual congestion of the womb, and thus furnish an ever present occasion of menorrhagia.

Other causes still might be enumerated as giving rise to excessive menstruation, such as blows or other injuries inflicted on the uterus during a menstrual period. Misplacements of the uterus, as retroflexion or anteflexion, are often associated with it, and various organic diseases, as polypus, fibrous tumor, or cancer, which eventually produce constant hemorrhages, at first manifest their existence in many cases by an increased flow of blood at the ordinary menstrual period. Inflammation of the uterus, especially, I believe, of its lining membrane, has this effect in very many instances, and not only produces it on a single occasion, but gives rise to a state in which menorrhagia often becomes habitual. It has also been alleged[1] that many cases of obstinate menorrhagia are dependent on a morbid state of the uterine lining membrane, in which it becomes the seat of minute polypoid granulations, whose removal, by scraping away the membrane itself, is essential to the patient's cure. There can, however, be no doubt but that the frequency of these granulations has been greatly overrated; their existence is not referred to by Pichard in his table of examinations of 800 uteri;[2] Rokitansky does not allude to them; and they did not come under my notice in any one of seventy uteri which I examined carefully some years since at St. Bartholomew's Hospital. There is no doubt, however, of their occasional existence, or of their identity in structure with the uterine mucous membrane itself,[3] though, while they have been found in the uteri

[1] First described by M. Récamier in the *Journal de Chirurgie* for 1843. M. Nonat, who embraces M. Récamier's opinions, and adopts his practice, gives a sketch of the literature of the subject at p. 193 of his *Traité des Maladies de l'Uterus*, 8vo., Paris, 1860.

[2] Appended to his book, *Des abus de la cauterisation, etc., dans les maladies de la matrice*, Paris, 8vo., 1846.

[3] See the account of their microscopic structure by M. Robin, in the *Archives de Médecine*, 1847, vol. xvii, p. 411.

of women who had never suffered from any form of hemorrhage, there is no evidence to show that they have any necessary connection with the occurrence of menorrhagia, or that menorrhagia, when associated with them is distinguishable by any peculiar symptoms. The supposition that it is possible to distinguish them by exploring the uterine cavity with the *curette* is ridiculed, fairly enough, by M. Aran,[1] who criticizes the hazardous proceedings which their presence has been supposed to justify, and on account of which I make this reference to a pathological condition in itself of no great importance.

Lastly, various affections of the ovaries are attended by the same result; and misplacement of those organs, their inflammation, and more rarely their degeneration, may be characterized by abundant and over-frequent menstruation. Each of these causes of menorrhagia, however, as well as all the different affections of the uterus itself, must engage our attention at a future day, and may therefore be passed over now without further notice.

In entering on the consideration of the *treatment* of menorrhagia, it is almost superfluous to observe that this can be by no means uniform, but must differ almost as widely as the various causes to which the excessive loss of blood is due.

In every instance, however, we have to fulfil two indications, of which sometimes the one, sometimes the other is the more urgent; namely, to arrest the present hemorrhage, and to remove the cause on which it depends. The principle which must guide us in endeavoring to accomplish the latter are too obvious to need more than the very briefest reference. In those patients, for instance, in whom the menorrhagia is but a sign and a consequence of general debility, the tonic remedies and ferruginous preparations which tend to invigorate the health and to improve the composition of the blood, will of themselves have a most powerful influence in checking the excessive discharge at the menstrual period. In some of these cases, too, the menstruation is excessive relatively to the patient's strength, rather than absolutely, compared with the quantity of blood lost by women in general at a menstrual period. This is so not infrequently with women in whom menstruation appears during suckling; and in such circumstances, it usually suffices to wean the child, and to give some simple tonic, in order to effect the patient's cure. Less amenable to treatment, of course, are those cases in which the alteration in the circulating fluid depends on some deep-seated cause, such, for instance, as exists in cases of granular degeneration of the kidney; though in such it is at once obvious that our attention must

[1] In his *Leçons sur les Maladies de l'Uterus*, 8vo., Paris, 1858, p. 475. "What!" says he, "do they seriously profess to be able to distinguish by means of the curette —that is to say, at the end of a stem a foot in length—these fungosities which measure in every direction three or four millimeters, and which scarcely project one or two millimeters beyond the surface of the mucous membrane; and this, too, in spite of their extreme softness, and of their continuity, without any distinct line of demarcation with the healthy mucous membrane?"

be directed chiefly to something more than the mere suppression of the present hemorrhage.

Again, the excessive hemorrhage that occurs in connection with a state of general plethora of the abdominal vessels, showing itself in a disposition to hemorrhoids, a sluggish action of the liver, and a constipated state of the bowels (a condition most frequent towards the decline of the sexual powers), admits less of remedies immediately addressed to the suppression of the bleeding than of attempts to remove it by indirect means. These are the cases in which a carefully regulated diet, whence all stimulants should be banished, great attention to the bowels, with the habitual employment of small doses of saline aperients, such as the sulphate of magnesia, the potassio-tartrate of soda, or some of the aperient mineral waters, as the Pullna water, for instance, continued for weeks together, will seldom fail to be successful. In such cases, too, as well as in those of younger women, in whom, with a general state of plethora, and rather sluggish condition of the bowels, the menses are with every month becoming more and more profuse, an active aperient taken the day before their expected occurrence often has a most remarkable influence in restraining the excessive hemorrhage.

But there are many cases in which the sexual organs themselves either are the immediate cause of the menorrhagia, or in which changes that they have undergone tend in great measure to perpetuate or to aggravate it. In all the more important forms of uterine or ovarian disease, the menorrhagia is but one out of several symptoms, each of which may claim our attention and necessitate our interference. Here, then, the empirical recourse to measures for checking the hemorrhage may be either out of place or useless; and just as the peculiar state of the constitution calls for consideration in some cases, so the precise character of the local ailment requires investigation in others.

Not to enter, however, into details which would occupy much time now, and must yet of necessity be incomplete, I will endeavor to furnish you with some general rules applicable to cases of menorrhagia in general, and then to give you special directions for the management of those in which the amount of the bleeding, or its persistence, or the state of the patient's health, requires that decided measures should be adopted for its suppression.

Under all varieties of condition, there are certain precautions which the known liability of any woman to menorrhagia should lead her to adopt with the return of each menstrual period. First among the rules may be mentioned the strict observance of the horizontal posture, from the commencement of the discharge, and the maintenance of it till the discharge ceases. If with this be associated due care that the bowels are not constipated, and the pelvic viscera consequently not congested at the onset of the period, it is surprising how many cases of obstinate menorrhagia will be relieved in a very short time, and the hemorrhage restrained within proper limits, and this even though all kinds of remedies had pre-

viously been long and fruitlessly employed. To secure this benefit, however, it is necessary that the precaution be repeated for two or three successive periods, and that afterwards a much greater degree of care should be taken at the return of each menstruation than many women are ready to observe.

But while these precautionary measures are alike applicable to all forms of menorrhagia, the management of the case in other respects differs completely, according to whether the hemorrhage assumes an active or a passive character. In the latter case, we employ astringent remedies both generally and locally, and this with a confident expectation of success; in the former, astringents would be out of place, and we rely on antiphlogistic measures, of greater or less activity, according to the urgency of the symptoms.

There is one variety of excessive menstruation, dependent on a state of intense uterine congestion, if not on actual inflammation of the womb, in which the profuse loss of blood is associated with general febrile disturbance of the system, with a very distressing sense of weight and bearing down, great abdominal and uterine tenderness, together with pains of a periodical character, like those of threatening miscarriage, or of the early stage of labor. These symptoms, to which the name of *metritis hemorrhagica* has been applied by some continental writers, require both for their relief, as well as for the suppression of the hemorrhage, the abstraction of blood from the arm, or the free application of leeches over the lower part of the abdomen; measures which are most efficacious if taken just before the occurrence of a menstrual period, or within the first day or two from the commencement of the discharge. But there are besides, other cases, in which, though the symptoms are less urgent, yet any attempt directly to stop the discharge would be equally unsuitable. Such are all those instances of menorrhagia that are associated with a state of general plethora, where a flushed face, and a full pulse, and an aching head, at the commencement of the period, become by degrees relieved as the blood flows, and where the hemorrhage seems to be almost salutary, were it not that it tends to become excessive, and tends also to become habitual, persisting long after the cause which first occasioned it has ceased. In these cases a modified antiphlogistic treatment must be pursued; small doses of the sulphate of magnesia with sulphuric acid, and the tincture of henbane, if much uterine pain be present; or the nitrate of potash, with tincture of digitalis, must be given, and will scarcely ever fail to check the bleeding.[1]

[1] (No. 2.)

℞ Magnesiæ Sulphatis, . ℥iv
Acid. Sulph. diluti, . ℥j
Tinct. Hyosciami, . . ℥ij
Aquæ Cinnamomi, . . ℥jss
Aquæ puræ, ... ℥iv
M. ft. mist., cujus sumat cochl. ij ampla 4tâ quâque horâ.

(No. 3.)

℞ Potassæ Nitratis, . . ℥j
Tinct. Digitalis, . . ♏ xl
Syrupi Limonum, . . ℥iv
Aquæ puræ, ... ℥vss
M. ft. mist., cujus sumat cochl. ij ampla 4tâ quâque horâ.

Cases presenting an active character, however, or calling for any approach to antiphlogistic measures in their treatment, are decidedly exceptional. Menorrhagia is most commonly met with in conjunction with a state of debility, and the obvious indication in the majority of instances is to check the bleeding as promptly and by as direct means as we can. With this view it is desirable, in all cases of passive menorrhagia, particularly when the affection has been of long standing, to employ astringent remedies,[1] such as alum, gallic acid, lead, or matico, from the moment when the discharge commences, and not to delay their administration until the hemorrhage has become considerable. Of the four remedies which I have just mentioned, the gallic acid and the matico are those in which I have the greatest confidence, while I place the least reliance on the acetate of lead. I do not know, however, of any special indication by which we can judge beforehand of the probability of one or the other remedy proving specially applicable in any particular case, but am accustomed to employ each in succession, provided one should fail to produce the desired effect.

The ergot of rye is employed by many practitioners in cases of menorrhagia, and this not simply on account of its action on the uterus, but also from its supposed styptic property. I used to think that it was not possessed of any power of arresting hemorrhage, independent of that which it exerts as an excitant of the muscular contractions of the womb. I hesitate, now, however, to express that opinion so confidently as heretofore, since I have observed several instances in which bleeding has been stanched by its employment without any sensible uterine contraction having been produced. If one were sure of always obtaining the drug perfectly fresh, I believe the infusion of ℥ij of the ergot in ℥vi of boiling water, to be its most efficient preparation, while the greater number of the essences and tinctures which are in such general use have seemed to be almost equally inert. Of the essential principle of the ergot (*ergotine*) I have no experience; but I believe that it has not justified the high expectations of the

[1] (No. 4.)

℞. Aluminis, ... ℥js
Solve in
Aquæ puræ, ... ℥v
adde
Tinct. Cinnamomi co.
Syrupi Papav. alb., āā, . ℥iv
M. ft. mist., cujus sumat cochl. ij magna 3tiâ vel 4tâ quâque horâ.

(No. 5.)

℞. Acidi Gallici, . . . gt. xlviij
Syrupi simplicis, . . . ℥iv
Aq. Cinnamomi, . . . ℥ijss
Aquæ puræ, ... ℥iij
M. ft. mist., sumat cochl. ij magna 4tâ quâque horâ.

(No. 6.)

℞. Plumbi Acetatis, ... ℥ss
Aceti destillati, ... ℥ij
Tinct. Opii, ... ♏ xx
Syrupi Papav. alb., . . . ℥iv
Aquæ puræ, ad . . . . . ℥vj
M. ft. mist., sumat cochl. ij magna 4tâ quâque horâ.

(No. 7.)

℞. Fol. Piperis Angustifoliæ (Matico), ... ℥ss
Aquæ ferventis, ... ℥vj
Macera per horas ij et cola.
℞. Liquor. colati, ... ℥vss
Tinct. Card. co., ... ℥iv
M. ft. mist., sumat cyathum vinosum 4tâ quâque horâ.

French physicians who first introduced it into practice. Quite recently my attention has been called to a new preparation of ergot made by Mr. Squire of Oxford Street, which I have used in doses of ℥xx to ʒss. every four or every six hours, with very good results. In the menorrhagia of the climacteric period, to which I referred a short time ago, this preparation has seemed specially useful, particularly when combined with the tincture of sesquichloride of iron;[1] a combination which is also very serviceable in many instances of excessive menstruation in weakly women.

Within the last few years a valuable addition has been made to our means of checking hemorrhage from the uterus, by the employment of digitalis in large doses. The discovery that it was possessed of marked hæmostatic powers, independent of its indirect influence exerted through the circulation, was made almost by accident. Dr. Robert Lee, of St. George's Hospital, and Dr. Dickinson, then his obstetric assistant, pursued with much diligence the observations first made in the wards of that institution, and came to the conclusion that the digitalis arrests menorrhagia by virtue of its direct action on the muscular tissue of the womb. In support of this opinion, Dr. Dickinson mentions,[2] that while the cessation of the hemorrhage was by no means constantly associated with any change in the frequency or the force of the circulation, severe pain referred to the womb was almost invariably experienced after the administration of a large dose of the infusion, and was speedily followed by the expulsion of a gush of coagulated blood; effects which were commonly repeated after each dose. I have given the digitalis in a considerable number of cases, but have never observed this latter result, though I have always questioned my patient closely as to any sensation which followed the medicine; and even where its action has been most marked, I have not found that pain accompanied the cessation of bleeding. At the same time, its action is by no means proportionate to the influence which it exerts on the circulation; for though a diminution in the frequency of the pulse was always observable, yet those cases in which the peculiar power of the drug over the heart's action was most marked were by no means the instances in which hemorrhage was soonest checked; while sometimes, though it became necessary to suspend the remedy altogether, the bleeding continued unabated.

The cases in which, in my hands, the digitalis proved most useful, were cases of simple menorrhagia, often of long standing; but either unaccompanied by appreciable changes in the womb, or at most associated only with some degree of hypertrophy. In

[1] (No. 8.)

℞. Extracti Ergotæ liquidi, ... ʒij
Glycerine purificati, ... ʒiv
Tinct. Ferri Sesquichloridi, ... ʒj
Syrupi Zinziberis, ... ʒiv
Aquæ puræ ad . . . . . ʒvi
M. ft. mist., sumat cochl. ij ampla 6tâ vel 4tâ quâque horâ.

[2] *Medico-Chirurgical Transactions*, vol. xxxix, p. 1.

many instances, too, this hypertrophy was apparently due to imperfect involution of the uterus after delivery or abortion, occurrences which in a good many instances had been the starting-point of the evil. In such cases I have been accustomed to give ℥iv of the infusion of digitalis every four hours, the patient remaining in bed, and being cautioned at once to discontinue the medicine if it produced faintness or dizziness. In most instances when it proved of benefit, it gave some earnest of this within twenty-four hours from its first employment, while if no effect were produced within forty-eight hours, I have always discontinued its further administration; and in no instance have I continued its use for longer than between three and four days.

The existence of a very considerable degree of exhaustion, and the necessity for giving wine or brandy, do not contraindicate a trial of digitalis, though in cases of great feebleness I generally begin with only ℥ij instead of ℥iv of the infusion for the first few doses. The medicine has seemed to me of little or no utility in cases where the hemorrhage depends on tumor or other organic disease of the womb, but in other circumstances I know of no means by which we can determine beforehand, with any considerable certainty, whether it will prove successful. In spite of all these drawbacks, however, the digitalis is a very valuable medicine in cases of menorrhagia; in no instance have I seen any serious mischief result from its employment, and in many cases it has certainly effected great good.

In the great majority of instances the observation of precautions and the employment of internal remedies such as I have recommended, suffice to restrain the loss of blood within safe limits; and it then remains only by judicious treatment in the interval to guard against the recurrence of hemorrhage at the next menstrual period. But now and then we meet with cases in which these measures prove nearly useless, or in which the loss of blood on former occasions has already been so considerable, or so often repeated, as to render each ounce of almost inestimable importance for the maintenance of the patient's health, possibly even for the preservation of her life. Rarely though it happens, you must yet bear in mind that women sometimes die from loss of blood at a menstrual period, and this wholly independent of uterine disease. Two instances of this occurrence have come under my notice; I have already referred to one case, and the second was even more important, since the person was not only in previously good health, but an examination after death ascertained that not only her uterus, but every organ of her body, was free from any sign of disease. She was a young woman who, having been sentenced to transportation for some offence committed in Scotland, was sent by ship during a stormy season from Edinburgh to London. Menstruation appeared during the voyage, but her exhaustion was not unnaturally attributed in great measure to sea-sickness. She improved on being landed, and though menstruation continued profuse, yet she made no complaint to the officers of the prison.

At length, having fainted one day, she was removed to the infirmary of the institution. No profuse loss of blood took place during the three or four days that she was there, but only a slight draining, which went on in spite both of astringent remedies and of cold applications, and under which she sank exhausted. A small coagulum was found within the uterus, but nowhere was there any trace of disease.

Now the bare possibility of any such occurrence happening is reason enough for watching most anxiously every case of very profuse menstruation, and for being ready with appropriate means to combat the symptoms as they increase in urgency. One of the first and most obvious means of checking bleeding from any part consists in the application of cold. After the menses then have continued for two or three days, provided they do not show any disposition to abate, the loins and vulva should be sponged every few hours with cold water, and the patient should besides have an enema of about four ounces of cold water night and morning. If in spite of these means, which, however, are generally successful, the loss of blood should still continue, wet cloths must be applied to the vulva, and astringent injections thrown into the vagina, for which purpose I know of nothing better than the infusion of matico.

If even these means should fail, there remain then but two resources, the plugging the vagina, and the injecting the cavity of the uterus itself. The expediency of resorting to either of these measures must be determined by a careful consideration of the patient's general condition, quite as much as by the mere amount of the hemorrhage. It is not indeed in general while blood is flowing profusely that the necessity for their employment arises, but at a later period, when, with great depression of the vital powers, blood still drains away in quantities so small as at another time would be of no importance.

I need give you no special directions as to how to plug the vagina, except to remind you that you will find the speculum of service in enabling you to introduce a considerable portion of the tow, wool, or whatever material you may employ, much more speedily, and with much less irritation of the vaginal walls, than would otherwise be practicable. A much better mode of plugging the vagina, however, as well in the unimpregnated condition, as during hemorrhage accompanying labor, is furnished by the simple apparatus first introduced into practice by two German physicians, MM. Braun and Chiari,[1] but which can now be obtained of most instrument makers. It consists of an India-rubber bottle, to which is attached a metal tube furnished with a stopcock, and also a ring to which straps can be fastened for securing it in its place after it has been introduced into the vagina. It is introduced empty, and may then be distended with cold water to any extent, so as to form a most efficient plug, while its withdrawal requires nothing

[1] *Klinik der Geburtshülfe*, 8vo., Erlangen, 1852, 1ste Lieferung, p. 125.

more than to turn the stopcock and let off the water. I have made two alterations in it which I think will increase its usefulness, and which consist in adapting its tube to that of an ordinary Reid's syringe, in order that it may be filled more conveniently; and in substituting the soft and yielding vulcanized India-rubber for the hard caoutchouc flask of the original inventors.

The injection of the uterine cavity, though a powerful means of repressing hemorrhage, is yet a proceeding of much hazard, which has given rise, in many instances, to severe inflammatory symptoms. Its use should therefore, I conceive, be limited to cases (and these are of extremely rare occurrence), in which, though hemorrhage may for the moment be restrained by means of the plug, it yet returns so soon as that is withdrawn, while remedies fail to exercise any influence on its flow.

Such a case was that of a woman aged fifty-one, who was admitted into the Middlesex Hospital under my care on September 21st, 1848. Her health had been good till about a year before, when her menstruation became irregular and over-frequent, and in the previous April she had an attack of hemorrhage, for which she was treated with advantage in University College Hospital, though bleeding returned soon after her discharge from that institution, and had ever since recurred frequently.

On her admission, her appearance was extremely anæmic, her pulse small, and her voice almost inaudible. She complained of constant pain in the lumbar and right iliac regions, increased after each attack of flooding; but a vaginal examination discovered nothing wrong about the uterus, except that it was somewhat larger and heavier than natural. The whole class of astringent remedies and astringent injections were employed with varying result till November 16th; the bleeding sometimes ceasing for a day or two, and then again returning. On that day, however, the discharge was so profuse that it was considered necessary to introduce the plug. This means arrested it; but at 11 A. M. on November 17th, the plug having been removed for six hours, hemorrhage again returned, and greatly exhausted the patient. After being reintroduced, and allowed to remain for twelve hours, the plug was once more withdrawn, and no return of hemorrhage took place; the infusion of matico, which the patient began to take about this time, appearing to restrain the bleeding very effectually. During the remainder of November, and the first few days of December, improvement continued, but the patient now again experienced frequent returns of hemorrhage, either in the form of a draining away of a pale sanguineous fluid, or in that of frequent sudden gushes of profuse bleeding. Previous to any profuse gush, she complained of pain in one or other iliac region, most frequently the right. Remedies seemed to have completely lost all influence, and on December 18th, though the hemorrhage was not at that moment very profuse, yet the patient was reduced by it to a state of extreme exhaustion, her pulse was scarcely perceptible, her voice a mere whisper, and her stomach rejected everything. The os

uteri was open wide enough to admit the finger as far as the first joint, but its tissue seemed quite healthy, and under the speculum the appearance of the os was perfectly natural. About three drachms of a mixture of a scruple of gallic acid in an ounce of water were now thrown into the uterine cavity, and no considerable pain was excited by the injection. At the same time pure brandy was given to rally the patient's powers, and as soon as her stomach could bear it, the infusion of ergot of rye was administered every few hours. It is needless to detail the daily treatment adopted from this period, for convalescence, as might be anticipated, was tardy. From the time of the injection of the uterus, however, the hemorrhage completely ceased, its place being taken by a puriform discharge just tinged with blood, and no hemorrhage reappeared until the 26th of January, when it was neither excessive in quantity nor of long duration. At intervals of rather less than a month hemorrhage recurred, though it was always readily controlled by treatment, and on April 10th she was discharged from the hospital, well, though still rather weak; her life having to all appearance been saved, when in most imminent peril, by the injection into the uterine cavity.

I have no experience of the employment of turpentine as an injection into the uterine cavity in cases of uncontrollable hemorrhage. I should fear to employ such an agent, which, indeed, has been followed,[1] when thus used, by violent inflammation of the womb. The infusion of matico, a solution of gallic acid, or a mixture of one part of the muriated tincture of iron and nine parts of water, would appear to me to be safer remedies.

The distressing symptoms which have not seldom followed the employment of intra-uterine injections are probably, in most instances, due to the irritation of the mucous membrane itself, and are by no means invariably dependent on the passage of the fluid into the peritoneal cavity. There can be no doubt, indeed, but that this accident has occasionally happened, but recent observations and experiments seem to prove that the chances are considerably against its occurrence. The precautions suggested by M. Guyon,[2] who has most recently investigated the subject, ought, however, never to be omitted. These consist in introducing the tube of any syringe which may be employed only a very few lines within the cervical canal in those cases in which it is wished to limit the action of the injection to the neck of the uterus. Whenever it is intended to throw fluid into the cavity of the womb itself, the tube of any syringe must be very narrow, so as to admit of the ready and immediate outflow of the fluid; the quantity injected must be extremely small, not above forty minims in the case of a person who has never been pregnant, and a little more than a drachm into the uterus of a woman who has borne children.

[1] See a case related in Ashwell's *Treatise on Diseases of Women*, 8vo., 1843, p. 155.

[2] *Etude sur les Cavités de l'Uterus à l'Etat de Vacuité*, in Journal de Physiologie, vol. ii, 1859. See p. 413.

Lastly, I wish to add a word of caution with reference to the scraping of the mucous membrane of the uterus, with a gouge, as a means of arresting menorrhagia—a proceeding which, while falling into disuse in France, has recently met with strong advocates in this country.[1] I own that I have not practised it myself, but that my conclusions with reference to it are drawn partly from the admissions of its advocates, partly from the arguments of its opponents. I reproduce, therefore, as perfectly conclusive to my own mind, the observations of M. Aran on the subject[2]—a physician whose premature death has been a loss not only to his own friends and his own country, but has been felt by all who are engaged in the cultivation of medicine, and who can ill afford to lose thus early one of the most diligent, most acute, and most honest of their fellow-laborers. "I am surprised," says he, in words which I am merely condensing, "that the advocates of this operation have not made a few experiments on the dead subject. They would then have found that the *curette* does not act equally on all points of the uterine cavity; that while it easily reaches the posterior and lateral walls of the organ, it can scarcely be applied at all to the anterior surface and the vicinity of the tubes, though these are the very situations where the vegetations are most frequently met with. They would farther have found that these little bodies, varying in size from a millet-seed to a pea, can be scraped out of the cavity of any uterus, since they are neither more nor less than little bits of epithelium frayed from the mucous membrane by the action of the instrument. It is not, indeed, that I absolutely deny that in some few cases genuine vegetations may have been detached by its means, but what I maintain is, that that is nothing more than a lucky accident, and that one cannot raise to the rank of a regular operation a proceeding which is nothing more than a sort of blindfold shooting at a mark."

M. Aran then suggests, in explanation of the success which has sometimes followed this mode of treatment, the probability that it acts, as to such proceedings as the cauterization of the interior of the uterus, by exciting the womb to very vigorous contractions; while further it is possible that some modification may also be produced by the inflammatory action induced in the mucous membrane. He concludes by stating that three instances of death have come to his own knowledge where the operation was resorted to by some of its most skilful advocates; that he believes similar occurrences have come under the observation of other practitioners; and that he retains a painful recollection of "the numerous instances of perforation of the uterine cavity, some of them followed by death, which M. Récamier communicated to the Academy of Medicine a few years since, and which produced a general impression of surprise and regret."

It is almost superfluous to add two other remarks, in which my

[1] Dr. Routh in *Obstetrical Transactions*, vol. ii, p. 117.
[2] *Op. cit.*, vol. i, pp. 472–481.

own observation entirely coincides with that of M. Aran—namely, that, in the first place, in very few of the published cases in which the scraping of the uterus was had recourse to, had a suitable treatment been adopted beforehand; and, in the next place, these hemorrhages admit of being put a stop to by other and less hazardous proceedings.

LECTURE V.

MENSTRUATION, AND ITS DISORDERS.

DYSMENORRHŒA—its three varieties—neuralgic, congestive, mechanical. Symptoms of neuralgic form; of congestive form, sometimes attended with expulsion of a membrane. Relation of congestive dysmenorrhœa to rheumatic, or gouty diathesis. Mechanical dysmenorrhœa, from contraction of cervix uteri, a rare occurrence.

Treatment of the neuralgic form; various sedatives, and their comparative results—of the congestive form; depletion, and how to apply leeches—treatment of the rheumatic variety—of the mechanical form; cautions with reference to its treatment.

I FEAR you may think that I am uttering a very superfluous truism when I remind you that almost every function of the body, if ill performed, is performed with an unusual amount of pain. The feeble stomach is pained by the presence of the food which it is unable to digest; the eye whose vision is imperfect, is pained by the effort to decipher even the most legible characters; and the head of the convalescent aches on the first attempt to resume his ordinary mental occupations.

Just so the menstrual function when deviating from its most exact performance, either in excess or in defect, is almost always attended by suffering far exceeding that discomfort by which, in the case of healthy women, it is usually accompanied. Amenorrhœa and menorrhagia are both almost invariably associated with suffering, and in the case of the most various disorders of the sexual organs, an undue amount of pain at each menstrual period is a symptom scarcely ever absent. But, besides these instances in which the pain is but one among many ills for which the patient seeks our aid (and probably even in her estimate by no means the gravest), there are other cases where the suffering of menstruation is so intense in its severity, or so importunate from its continuance, as to constitute a distinct affection, and to claim a place in our nosologies as *dysmenorrhœa*.

It has been customary to recognize three different varieties of this dysmenorrhœa, or painful menstruation; and the distinction of neuralgic, congestive, and mechanical dysmenorrhœa, terms which interpret themselves, seems to me to rest on good grounds, and to merit being generally adopted.

There are some instances in which pain alone, unattended by any other symptom, is the only important respect in which menstruation differs from a healthy state. This *neuralgic dysmenorrhœa* occurs most frequently, and in its simplest form, in young women whose sexual system has not been developed till a comparatively late period, and who have not begun to menstruate till a year or two after the average date. The pain, in such cases, precedes menstruation for a day or two, generally reaches its greatest intensity in the course of the first thirty-six hours of the catamenial flow, being sometimes so intense that the patient writhes on the floor in agony, and then by degrees subsides, though it does not cease entirely till the period is over. Though severest in the uterine and pelvic regions, the pain is not in general limited to those situations, but is experienced also in the back and loins, is referred to either groin, or rather to each ovarian region, and shoots down the inside of the thighs. The pain, too, is aggravated at intervals, and becomes paroxysmal, like that of colic or of labor, while the whole abdominal surface is so tender as scarcely to bear the slightest touch. In addition to these pains, all radiating more or less obviously from the sexual organs, there is often much suffering in other parts. Intense headache is very frequent, often confined to one side of the head, or presenting the well-known characters of clavus hystericus; or, in other cases, the stomach is disordered, and the patient distressed by constant nausea or frequent vomiting. In many instances, various other hysterical symptoms manifest themselves, often, indeed, with peculiar intensity, and I knew a patient in whom an attack of hysterical mania ushered in on more than one occasion a menstrual period. This neuralgic dysmenorrhœa, however, is by no means invariably associated with an hysterical temperament, and patients who suffer most intensely during menstruation, sometimes manifest no symptom of hysteria, but, on the contrary, are remarkable for quiet self-possession and well-regulated minds.

In some instances, it seems as if the disorder of the nerves extended to the whole system, while in others it is limited to those which supply the sexual organs, and is then usually of shorter duration on each occasion, though not by any means of necessity slighter in the suffering which attends it than when the sympathies which it awakens are more extensive. Even when pain has altogether subsided after the cessation of a menstrual period, any excitement of the sexual system will, in very many instances, suffice to reproduce suffering. In married women affected with this form of dysmenorrhœa, sexual congress is almost invariably extremely painful, while pregnancy is attended by more than the ordinary degree of local discomfort, and the pain of parturition amounts to intolerable anguish.

I have referred to this neuralgic dysmenorrhœa as occurring in its simplest form in young women in whom there was a tardy, and perhaps an incomplete development of the sexual system. It is, however, by no means limited to such persons, but sometimes

comes on after years of healthy and comparatively painless menstruation. I have known menstruation become painful during convalescence from some serious illness wholly unconnected with the sexual functions, and continue so long after the patient had, in other respects, regained her usual health. In other cases, the sudden suppression of the menses by cold, or some other accidental cause, is succeeded by obstinate dysmenorrhœa; and this although no obvious uterine ailment had followed the accident. At other times, inflammation of the uterus, after delivery or miscarriage, is followed by painful menstruation, which persists long after every trace of inflammation or of its consequences has completely disappeared.

But there is another form of dysmenorrhœa which has been termed the *congestive*, from the peculiar circumstances that attend it. Unlike the purely neuralgic variety, it is less frequent at the commencement of sexual vigor than as an acquired condition at a later period of life. A sense of weight about the pelvis, and a tendency to hemorrhoidal affections, generally exist in the interval between the menstrual periods; and these symptoms increase considerably a few days before the discharge comes on. During the first twenty-four or thirty-six hours of each menstruation, the discharge in general is but scanty, and the pain is very severe. At the end of this time, however, sometimes even sooner, the hemorrhage often becomes abundant; and as the blood flows the pain abates, and then ceases altogether. The congested womb ached till nature bled it, just as the head aches, when the brain is congested, till the cupping-glasses or the leeches have relieved the overloaded cerebral vessels. Sometimes in these cases the menstrual flux at no time becomes abundant, and consequently the relief which nature gives is very partial. When this is so, the womb continues to ache and throb during the whole of the menstrual period, and is left afterwards tender and painful. When this is not the case, however, the end of the menstrual period generally leaves the patient in a state of comparative comfort. For the next week or ten days she continues to enjoy a comparative immunity from suffering; but then the symptoms gradually return, and reach their climax of severity with the commencement of the next menstruation.

In some instances of this form of dysmenorrhœa, not only is the amount of blood lost at a menstrual period insufficient to relieve the congested womb, but it is absolutely as well as relatively scanty. In some of the cases the discharge having continued for a few hours, ceases, and then comes on again; while, though scanty, it is intermixed with small coagula, owing, probably, to the blood having been poured out so slowly as to allow of its coagulating within the uterine cavity; an occurrence prevented during healthy menstruation by its comparatively rapid flow into the vagina, where its fibrine is at once dissolved by the acid secretion of that canal, and its coagulating property destroyed.

In others of these cases we find intermingled with the menstrual

discharge, shreds, or strips, or distinct laminæ of membrane, or even a small membranous sac, which is seen, on careful examination, to form a complete cast of the uterine cavity. This occurrence sometimes takes place only once, but oftener it reappears during a long succession of menstrual periods. The discharge of the membrane is generally associated with very considerable aggravation of the patient's suffering; sometimes with distinct periodical pains, like those of abortion; and when to them profuse hemorrhage is superadded, an occurrence which is frequent, though not invariable, unfounded suspicions have in some instances been entertained with reference to the chastity of women who have had the misfortune to present this combination of symptoms.

In the ignorance which till lately prevailed with reference to the real structure of the uterine lining membrane, it was customary to speak of the dysmenorrhœal membrane as the product of inflammation, or of some process akin to it. We know, however, that during menstruation the epithelium of the uterine cavity is thrown off in greater or less abundance; while an examination of the membrane suffices to show that what has occurred in its formation and detachment is merely an exaggeration of the process which to a less degree takes place at every menstrual period.[1] The membrane is smooth on one surface, rough, almost villous, on the other, and presents the remains of numerous dilated uterine glands; characters that prove it to be the analogue of that decidua which, under the physiological stimulus of conception, passes through a more complete development to serve important purposes.[2]

I scarcely need say that it is not a matter of indifference in a practical point of view, whether or no, you entertain correct opinions with reference to the structure of this membrane. To regard it as a layer of plastic lymph similar to that which is poured out in croup, at once suggests the employment for its removal of active antiphlogistic measures, such as experience would by no means justify. Reasoning, however, even independent of the actual observation to which I have appealed, would suffice to show the fallacy of this opinion. It is utterly inconceivable that a mucous membrane so inflamed as to become the seat of deposits of lymph should in a few days return to a perfectly healthy condition, and yet periodically undergo the same intense inflammation, issuing

[1] This opinion as to the identity in character of dysmenorrhœal membrane and decidua is now almost universally entertained, both in this country and on the continent. In this country the first to assert this identity were, I believe, Dr. Oldham, in *Med. Gaz.*, April 16, 1846, and Dr. Simpson, in *Edin. Monthly Journal*, Sept. 1846.

[2] All membranes, however, expelled during painful menstruation are not uterine products. Dr. A. Farre, in a paper published in Beale's *Archives of Medicine*, No. II, 1858, shows that occasionally the mucous membrane of the vagina exfoliates in layers forming even a complete cast of the canal. Their expulsion was accompanied in each of the cases related by much suffering, though, as might be expected, referred more to the vagina than to the uterus.

in the same deposit; and this with no serious injury to its functions and no permanent change of its structure.

Allied to this congestive dysmenorrhœa, are cases of painful menstruation dependent on constitutional causes, especially on the gouty or rheumatic diathesis; though I cannot pretend to say why in women this peculiar ailment should result from it so much more frequently than the ordinary forms of those disorders with which we are familiar in the male sex. Such cases, however, are by no means rare in any class of society; and wherever they occur, they are chronic in their course and difficult of cure.[1] A casual attack of cold is in some instances referred to as the occasion of the patient's illness, while in other cases the ailment comes on by degrees, and with no definite exciting cause. Menstruation begins to be more painful than was its wont, often more scanty; an unusual degree of constitutional disturbance attends each period; the pulse at those times is very frequent, the skin hot though perspiring, and lithates abound in the urine. In the intervals, profuse leucorrhœal discharges take place; the pain, though less intense, is yet severe, and is aggravated by trifling causes, or without any obvious reason. The pain at one time is most severe in the back, at another is referred to one or other iliac region, shooting down the legs in the course of the crural nerve, or, like sciatica, affecting the back of the thighs; while occasionally, in addition to these abiding discomforts, the patient is kept in bed for a day or two at a time by slight feverish attacks, accompanied by wandering pains in the limbs, though seldom attended by inflammation and swelling of any of the joints.

The seat of the pain in these cases is no doubt the muscular tissue of the uterus; and the suffering from this cause sometimes outlasts that time of life during which menstruation takes place, though the cessation of the periodical congestion of the womb, which occurs so long as the sexual system retains its activity, is followed by a great diminution of the patient's ills. In the worst cases of this disorder, the womb, though presenting no appreciable alteration, is so intensely tender, that the slightest movement causes intolerable pain; and many instances of an affection which the late Dr. Gooch[2] described with all that graphic skill of which he was so great a master, and for which he proposed the name of the *Irritable Uterus*, may be referred to this category. I shall presently have a few remarks to make on the treatment of this ailment; just now, I will add only that relief for it is to be sought by measures directed to the constitutional cause, and not by any form of local medication.

Such, then, are the two principal forms of dysmenorrhœa: the one the neuralgic, the other the congestive; while often we meet

[1] The observations of Dr. Todd on the subject in section ix, of *Practical Remarks on Gout, Rheumatism, Fever, &c.*, 8vo., London, 1843; and those of Dr. Rigby, in his works on *Dysmenorrhœa*, published in 1844, have more especially called attention to this subject.

[2] *On the More Important Diseases of Women*, 8vo., 2d ed., London, 1831, p. 332.

with cases presenting the mingled characteristics of both varieties. It is probable that in all of these cases a temporary constriction of the internal orifice of the uterus plays a more important part than has commonly been supposed in the production of the symptoms; that not merely is there a non-effusion of the menstrual fluid, but that, even after it has been poured out, a condition either of turgescence or of spasm at the internal os uteri prevents its escape, and keeps up or aggravates the suffering of the patient.[1] But there are other instances in which the influence of mechanical obstruction is both more obvious and more abiding. Such are those in which the painful menstruation is associated with some organic disease of the uterus, as fibrous tumor, or with some malposition, as anteflexion, or retroflection, or in which the canal of the cervix, or its orifice, is permanently contracted. The existence of any of these conditions can of course be ascertained only by a careful vaginal examination, and this should not be omitted wherever the dysmenorrhœa continues for several months in spite of treatment calculated to remove it.

Of late years special attention has been directed to that form of so-called *mechanical dysmenorrhœa*, in which the patient's sufferings are due to the contracted cervix obstructing the escape of the menstrual fluid. This mechanical form of dysmenorrhœa is characterized not only by pain, but also by the slow escape and scanty amount of the blood discharged, which also, for the most part, escapes in small, imperfectly formed coagula. The late Dr. Mackintosh, of Edinburgh,[2] was, I believe, the first person who, in the year 1823, directed attention to this source of difficult menstruation, and in 1826 he advised the mechanical dilatation of the os uteri by bougies, for its relief. The impediment may exist either at the external os uteri, or at some limited part of the cervix, especially at the internal os, where the body and neck of the womb communicate, or it may involve the whole of its canal. It appears, in some instances, to be attributable to inflammation, and probable ulceration of the cervical canal, as in the case of a woman once under my care, the canal of whose cervix was at one point so nearly obliterated as not to allow the passage of the finest catgut bougie, and who referred her sufferings to the effects of a labor twelve years before. In other instances, the dysmenorrhœa is habitual, and the narrow cervix is a congenital condition, or one due at least to some defect of uterine development, and this latter I believe to be the more frequent form of the affection.

An impression has of late years been gaining ground that this form of dysmenorrhœa is very common, and mechanical means

[1] The share of obstruction to the outflow of the menses, from the temporary contraction of the cervical orifice, in giving rise to the pain of dysmenorrhœa, has been dwelt on by Dr. Graily Hewitt in his recent work on the *Diseases of Women*, 8vo., London, 1863 (see pp. 119–125). The able arguments by which Dr. Hewitt supports his views receive further corroboration by the remarks of Mr. Guyon, to which reference has already been made, *op. cit.*, pp. 204–208.

[2] In his *Practice of Physic*, 4th ed., 8vo., London, 1836, vol. ii, pp. 431–436.

of treating it have accordingly come very much into vogue; to the neglect, it is to be feared, in many instances, of those internal remedies, by which painful menstruation is in general much more appropriately treated. One circumstance, which I believe to have much contributed to the support of this opinion, is the fact, that on introducing the uterine sound an obstacle is very often encountered at the internal os uteri to the passage of the instrument into the cavity of the womb. That this obstacle, however, is in reality perfectly natural, can be readily ascertained on the dead subject, since even after the removal of the uterus from the body, a bougie which passes with ease along the cervical canal will there encounter a resistance such as can often be overcome only by considerable effort, or, perhaps, not at all, though a smaller bougie will pass at once with perfect facility, and the uterus, when laid open, will be found to be perfectly healthy. The constriction in this situation which is found to be so considerable even after death, was doubtless in these and many other instances far greater during life, and yet, in spite of it, the history of such persons often gives no account of difficult or painful menstruation.[1] Nor, indeed, need this surprise us, for the discharge takes place during menstruation, not in a continuous stream as the urine flows from the bladder, but oozes from the interior of the womb, the blood escaping drop by drop from the os uteri. If the aperture be so small as scarcely to allow this to take place, menstruation no doubt may be rendered very painful; and just as when stricture of the urethra exists, the bladder, and ureters, and kidneys, become irritated, and disturbed in the performance of their functions, so it is quite conceivable that a similar state of the cervix uteri may exert the same influence on the function of that organ, and render the menstrual flux scanty in quantity and morbid in character, as the consequence of the difficulty in its discharge. The natural constriction of the internal uterine orifice is probably often heightened by functional disorder, and thus becomes the occasion of a great increase of the patient's sufferings. It by no means follows, however, that all cases in which symptoms of obstruction are present require mechanical treatment, any more than that every case of croup or laryngitis is at once, and irrespective of other measures, to be dealt with by the performance of tracheotomy.

And this brings me to notice the *treatment* of dysmenorrhœa, which must vary just as its forms are various. In the dysmenorrhœa of young girls in whom menstruation is not yet completely established, our efforts must chiefly be directed to bringing about the regular performance of the function as speedily as possible, and there is reason to hope, that in proportion as this is effected, the pain will by degrees diminish. If, however, the suffering be so severe as to require the employment of remedies specially directed to its mitigation, they will in the majority of instances be

[1] The fact of the natural constriction of the uterine canal at the situation of the internal os, was very clearly asserted br Dr. Henry Bennet in his work on *Inflammation of the Uterus*. See p. 3 of the 4th edition.

such as are applicable for the relief of nervous dysmenorrhœa. One of the most serviceable of these are the hot hip-bath, which may be had recourse to on the first threatening of pain, and even twenty-four or thirty-six hours before the date at which the commencement of the menstrual discharge is expected. To obtain the full benefit from it the patient should remain in it for half or three-quarters of an hour; the temperature of the water being maintained during the whole time at 96° or 98°; while the bath may often be advantageously rendered more stimulating by the addition of mustard to the water. If pain again returns with severity, the bath may be repeated twice or three times in the twenty-four hours, while after its employment the patient should always retire to bed, and remain there until, with the establishment of the menstrual flux, the pain has in great measure subsided. It will, however, still be wise for the patient to remain during the whole period in her apartment, and to avoid all exertion, as well as all changes of temperature.

If the pain be very severe, some sedative or narcotic will probably be indispensably necessary, and this will be likely to produce the best effect if taken immediately on the patient coming out of her bath. Opium, in some of its various preparations, is of course the most powerful remedy; but there are many reasons why it is undesirable to have recourse to it, unless the milder sedatives have been tried and found inefficacious. In many instances opium deranges the digestive functions seriously, and inflicts on the patient a very distressing headache for hours after its first soothing influence has passed off; but a still more serious objection to its use is furnished by the fact that young women not seldom become habituated to the drug from having had recourse to it as a sort of domestic remedy for deadening the pain of menstruation. In many instances of the purely neuralgic dysmenorrhœa, ether alone suffices to remove the pain, or at least greatly to mitigate it; and when this is so, its transitory influence and the circumstances that it in no way interferes with the digestive functions, render it far preferable to any of the more direct narcotics. A draught containing half a drachm of the compound spirits of ether, and fifteen minims of chloric ether, will generally answer the purpose very well, while in cases where the patient, as sometimes happens, has an insuperable objection to the taste of ether, the eau de luce, or tinctura ammoniæ composita of the Pharmacopœia, forms a very good substitute for it.[1] A single dose of any of these remedies will often suffice, but if not they may be repeated frequently, and at short intervals. Some years ago, the Sumbul, an Indian remedy, was introduced into practice as appli-

[1] (No. 9.)

℞. Tinct. Ammoniæ compositæ, ... ℥vj
Tinct. Aurantii, ... ʒj
Syrupi simplicis, ... ʒj
Inf. Aurantii co., ... ʒiv
Mist. Camphoræ, ... ʒvj—M. ft. haustus.

cable to the relief of neuralgic pains, as well as of other ailments. It certainly seems to possess a measure of that compound stimulant and anodyne property which characterizes ether, though in a far inferior degree. You will, however, always find it useful in the management of the diseases of women to have numerous expedients at hand for the relief of minor ailments, in addition to being well acquainted with the great remedies for more serious ills.

Should none of the above-named simpler means suffice, henbane is that one of the more decided narcotics of which you may make a trial with the least risk of its disagreeing with the patient. Forty minims of the tincture, or five grains of the extract, are an average dose, and the quieting action of the remedy seems to be much increased, especially in the case of uterine pain, by combining it with camphor, five grains of which may be given with each dose of the henbane. Another remedy extremely serviceable in controlling neuralgic pain, and free from many of the inconveniences of opium, is the Indian hemp, or Cannabis Indica. There are two drawbacks, however, from its use. The one is, that owing to the absence of any officinal preparation of the drug, the medicine, as ordered from different druggists, varies much in strength; the other is that the susceptibility of different persons to its influence varies much more than in the case of opium. For these reasons, it is expedient that it should always be procured at the same place, and also that it should always be ordered in a minimum dose at first, until you have ascertained its effect on your patient. The inhalation of chloroform or ether, though its effects are but transitory, yet sometimes exerts a permanent influence in mitigating uterine pain. The remedy, however, is too hazardous to be intrusted to the patient or her friends, but the local application of chloroform to the hypogastric or pubic region, is not only free from risk, but is also often serviceable. If none of these means give relief, opium becomes our last resource, and Dover's powder, morphia, the sedative solution of opium, and the black drop, are all of them, in these cases, to be preferred to the simple tincture, because they generally occasion less sickness or headache, and are less apt to produce constipation of the bowels. Sometimes medicines given by the mouth seem unavailing, or the severity of the pain induces us to seek for a remedy that shall be more rapid in its action, and in these circumstances an opiate suppository, or an opiate enema, the bulk of which must of course be very small, will often afford speedy relief.

I do not think it will be out of place if I here very strongly advise you to look on every case of dysmenorrhœa in young women as of importance, and not content yourselves with giving a few general directions, or with writing a prescription for your patient, if the pain from which she suffers should chance to be very urgent. There is always much greater risk of the attacks becoming habitual, and thus rendering your patient's future life miserable, than there is reason for expecting the popular belief to be realized, and

that the ailment of the girl will spontaneously cease when she attains to full womanhood. Every precaution which I have suggested is of the greatest moment; the confinement of the patient to her room, the absolute rest, the repose in bed during the early part of the menstrual period, are indispensable with each return of menstruation, so long as the tendency to dysmenorrhœa continues, and I believe are much more important, as far as eventual permanent recovery is concerned, than is the employment of remedies to relieve pain on any single occasion. Your care, moreover, must not cease with the cessation of the attack, but your attention must be most watchful during the menstrual intervals, to correct anything wrong in the general health, and to invigorate the patient's system, which in these cases is almost always feeble. One other caution you must allow me to add: there is a popular impression that when the highest functions of the sexual system are brought into play, many ailments, previously troublesome, are likely to cease, and it is beyond a doubt that, in some instances, marriage, and pregnancy, and childbearing are followed by these desirable results. I fear, however, that the chances are the other way; that the girl who suffers from dysmenorrhœa will be likely to suffer more from it after marriage than she did before; that the extreme sensitiveness of her uterine organs will render marriage, in all sexual respects, a very painful condition; that conception will be less likely to occur than in another woman, and that if it should, pregnancy and labor will be attended by far more than the usual amount of distress. If this be so, however, you must see how cogent the reasons are for treating dysmenorrhœa more gravely than may at first sight appear necessary. Good taste and good feeling will not fail to guide you in selecting the best way of conveying your opinions to your patient and her friends, and you will most likely find a ready acquiescence in your directions so soon as the grounds on which they rest are clearly understood.

In the *congestive* form of dysmenorrhœa, anodynes no longer furnish the ready resource for the relief of present suffering which they supply in the neuralgic variety of the affection. The uterus and the pelvic viscera generally are overloaded with blood, and it is only by its abstraction that we can relieve the patient. Cupping to the sacrum, or the application of leeches to the hypogastrium, the anus, or the uterus itself, are the means by which this end is to be accomplished. It is not in general, however, that the abstraction of so large a quantity of blood as seems implied in the application of the cupping-glasses is necessary or desirable. The great benefit of leeching the hypogastric or iliac region seems to be confined to those cases in which the pain, referred especially to the sides of the pelvis, indicates the ovaries to be its seat; but in other cases it is decidedly inferior in efficacy to the application of leeches to the anus. These modes of abstracting blood can be resorted to at any time, even just before menstruation or during the presence of the discharge; leeches cannot, however, be applied to the uterus itself

within three or four days of an expected menstruation without considerable risk of disturbing the regularity of its return.

When depletion has been resorted to, the tepid hip-bath will generally afford some relief, while afterwards the patient should remain in bed, and take some diaphoretic saline, such as the liquor ammoniæ acetatis, combined with small doses of henbane or of opium, the efficacy of which remedy will in these cases be much increased by combining it with nauseating doses of tartar emetic. In some cases of this description the direct narcotics in any form or combination are ill borne, exciting much constitutional disturbance, and relieving the pain but little or not at all. Ipecacuanha in grain or half-grain doses, every hour till a decided nauseating effect is produced, is in these circumstances sometimes of very great service, affording much relief to the pain, and also lessening the amount of discharge, which otherwise not infrequently becomes over-profuse about the second or third day of menstruation.

The treatment of the patients at the menstrual period comprises, however, only a small part of what is needed to bring about their cure. Though relieved for a season by the flow of blood, as is generally the case, the symptoms by degrees return before the next period comes on. It is during this interval that so much is gained by local depletion of the uterus; a proceeding which, although abundantly simple, I may, perhaps, as well stop for a moment to describe to you.

Leeches, when applied to the womb, generally produce a much greater flow of blood than follows their application to any external part; and four, or at the most six, are therefore as many as it is desirable to put on at one time. Metallic tubes, perforated with holes at one end, and capable of being closed by a plug at the other, and some other similar contrivances, are sold in instrument makers' shops, and are very useful for servants or nurses, whenever they are intrusted with the operation of leeching the womb. I prefer, however, to employ a speculum, and generally use one of Fergusson's reflecting glass speculums, by which you can both ascertain more exactly the part to which to apply the leeches, and also, if the os uteri be at all open, have the opportunity of inserting into it a little bit of cotton-wool, in order to prevent the leeches biting within the canal of the cervix; since that accident always gives most acute pain, though otherwise the operation is attended by very little suffering. The speculum being introduced and adjusted as the patient lies upon her left side, the leeches are put into it, and then pushed up to the uterus by means of a little cotton-wool or lint, which may be withdrawn in five or ten minutes, the leeches having generally bitten by that time. Now and then a leech, crawling out of the speculum, will make its way down between the instrument and the vaginal wall, and fixing on the external parts, will cause much pain; but a little care will enable you to guard against any such mischance. I would not have taken up your time with details which may seem so trivial, if it were not

that in the country you may be unable to command the services of a class of women who in London get a very good living by leeching the uterus under medical direction. After the leeches have come away, a warm hip-bath is generally a comfort to the patient; and, unless the bleeding has been very profuse, is desirable as a means of promoting it, on the same principle as we often put on a poultice after the application of leeches externally. The evening is generally the best season for applying leeches to the womb, in order that the rest and sleep of the coming night may relieve the patient, jaded and wearied by the discomfort of the operation.

I may just add, that it has been advised, as a more expeditious and less irksome mode of depleting the uterus, to scarify its lips through a speculum by means of a sharp lancet affixed to a long handle. Such scarifications are by no means painful, and in some instances where the mucous membrane covering the lips of the uterus is the seat of undue vascularity, and presents a peculiar granular, abraded appearance, I have seen much benefit result from it, just in the same manner as scarification of the palpebral conjunctiva sometimes does much good in strumous and other forms of ophthalmia. We cannot, however, abstract by this means any considerable amount of blood; and whenever there is much congestion of the vessels of the uterine substance, which we are anxious to relieve by depletion, leeches to the part are always to be preferred.

Depletion, attention to the bowels, a nutritious but unstimulating diet, and all those little precautions which come under the somewhat vague denomination of attention to the general health, must in all of these cases engage our care during the intervals between each menstrual period. When to this I add, that the backache, if not relieved by a plaster, generally yields to a croton oil liniment, sufficiently weak not to produce a troublesome pustular eruption, and that small blisters in one or other iliac region usually mitigate the pain referred to the situation of the ovaries, I think I have given you all the special directions which are applicable to cases of this description.

I have, howerer, referred to some instances in which the painful menstruation is associated with various evidences of a rheumatic or gouty diathesis, and such cases are both peculiarly painful and peculiarly intractable. Colchicum is often of much utility, and during the paroxysm twenty or thirty minims of the tincture in combination with small doses of laudanum and of antimonial wine, will often give more relief than any other remedies, and prove especially useful when large doses of narcotics will be of no service. The treatment during the menstrual intervals is of particular importance to this class of patients, and yet so various are the symptoms in different cases, that it is impossible to lay down any definite plan as applicable to all. So long as the bowels are very constipated, as the tongue is foul, and the urine loaded with lithates, colchicum may be given two or three times a day, combined with the sulphate and carbonate of magnesia, and a

small dose of blue pill or gray powder with the extract of poppy or of henbane at night. When the constipated state of the bowels has been overcome, the acetous extract of colchicum may still be continued at night, while during the day some mild tonic is given, such as the nitromuriatic acid with extract of taraxacum, or the liquor cinchonæ and taraxacum; for with the disposition to local plethora and congestion there is almost always associated a general want of power in the system. While the tonic plan is generally pursued, any increase of pain, or irritability of the bladder, or an increased deposit of lithates in the urine, will call for a return to the use of the colchicum, and its employment with greater frequency. The persistence of the symptoms and the presence of a profuse leucorrhœal discharge, as well as of an habitual excess of lithates, indicates the employment of the iodide of potassium, which is often of great service when the colchicum has already disappointed our expectations. The dysuria in these cases is frequently much relieved by the patient drinking Vichy water instead of spring water; while the form of tonic that in general suits best is the citrate of iron in doses not exceeding five grains twice a day, for which the Vichy water, sweetened with a little syrup of orange-peel, is a very agreeable vehicle. Lastly, when this condition has existed for years, it becomes, I fear, almost incurable. The waters of Carlsbad and of Wiesbaden do, indeed, effect something towards the alleviation of the patient's sufferings, sometimes, perhaps, even bring about a cure, but at the best slowly, uncertainly, and leave behind a great disposition to relapse. Hence the wealthy lose heart at what seems to be a never-ending treatment, requiring to be renewed year after year, and imposing, as the price of even moderate success, strict self-denial, and precautions which almost exclude from society those who observe them. The poor, unable to afford the luxury of illness, are at least as unfortunate, and endure a life of wearing pain, all the more intolerable, perhaps, from its depending on no dangerous disease, and tending but little to shorten an existence which it yet renders extremely miserable.

With reference to the *last* form of dysmenorrhœa—namely, that dependent on the permanent contraction of the os and cervix uteri, and the consequent mechanical impediment to the escape of the menstrual fluid—I have already expressed my conviction of its rare occurrence, and am far from being alone in this opinion.[1] In some instances in which this was supposed to be the cause of painful menstruation, the result of careful examination has been to show that the cervix was small, and its canal narrow, just because the sexual organs generally were undeveloped. Such cases I need not say, are not cases of mechanical dysmenorrhœa, nor to be relieved by any attempt at dilating the cervix. Nor, indeed, as I have already stated, are the symptoms of menstrual obstruction which accompany many cases of neuralgic or congestive dysmenor-

[1] See with reference to this very point, the remarks of M. Aran, *op. cit.*, p. 324

rhœa, to be looked on as conclusive evidence of abiding contraction of the neck of the womb. I agree with M. Aran in regarding as the best proof of that condition, the painful discharge of small coagula, recurring at several successive monthly periods, instead of an outflow of healthy menstrual fluid.

To judge, indeed, by the multiplicity of contrivances which of late years have been employed for the purpose of dilating the cervix uteri, you would be led to a different conclusion from that which I believe to be the right one; and would suppose that the existence of a narrow cervix uteri was of great frequency. In addition to ordinary bougies, such as were employed by Dr. Mackintosh, and to bougies of flexible metal, which have been found in some respects more convenient, metallic stems with bulbous ends have been introduced, and left in the cervical canal for an hour or two at a time; and these stems have been recently modified by constructing them of two different metals with the view of obtaining some kind of galvanic action in the interior of the uterus. These ingenious contrivances are the inventions of Professor Simpson of Edinburgh. I apprehend, however, that, as in the case of the galvanic rings which some time ago were sold about the streets for the cure of neuralgic and rheumatic affections, so in the case of these stems, the amount of galvanic action set up must be too slight to exert any real influence; while, independent of the difficulty which there always is, especially if the vagina be narrow, in their introduction, the effect of allowing metallic bougies to remain for any considerable time in contact with the interior of the uterus has almost always appeared to me to be that of producing very considerable suffering.

Besides the gradual dilatation of the os and cervix uteri by bougies, instruments not unlike the *speculum matricis* of the ancients have been devised for forcibly widening it, literally screwing it open, and others for incising it by means of a *bistoire caché*. I am perfectly at a loss as to the principle upon which these instruments are recommended. If the cervix uteri be wide enough to admit them, I do not see how its narrowness can offer a mechanical impediment to the escape of the menses. I can, however, readily understand that the uterus may suffer severely from the violence offered to it, and indeed have known pelvic abscesses succeed to some of these manipulations.

These proceedings are, I believe, much less frequently resorted to now, since the mischief to which they are likely to lead has become more evident than it was a few years ago. I cannot, however, refrain, now that the opportunity presents itself, from warning you against plausible errors such as led to this practice; errors into which you are all the more likely to fall, from their being of a kind to receive speedy currency among our patients. Non-professional persons cannot understand the reasons which induce us to adopt one course of medical treatment instead of another; but they can quite understand the popularized pathology which tells them that they menstruate with pain because the passage of the womb is too narrow, and in the hope of a cure will

submit with readiness to almost any amount of mechanical treatment; and will perhaps draw comparisons between the doctor who is resorting to very needless interference and the less officious person who did no more than the necessities of the case required—comparisons, I scarcely need say, very unfavorable to the latter.

If now, after taking all possible care to avoid mistakes, you still come to the conclusion that the painful menstruation is, in part, if not altogether, due to the narrow cervical canal, I think you will find a set of flexible metallic bougies the best and most convenient means for dilating the passage. Those which I use correspond in size with the sounds employed by surgeons for examining the bladder; but I have had a notch made at two and a half inches from the extremity, in order to be able to tell how far the instrument has been introduced. Five or ten minutes are, I think, as long a time as it is desirable to allow the bougies to remain; but they should be introduced daily, and their employment should not be discontinued until the canal admits one corresponding to the ordinary No. 9 bougie. If after frequent attempts the bougie can be introduced only a short distance, a prepared sponge tent, such as Professor Simpson was the first to bring into use, should be introduced, and then a larger, and still larger, till in the course of a couple of days the cervix will be widely dilated throughout: or else we shall find the point at which a decided impassable contraction exists. In the only case in which I discovered this state of things, the patient's sufferings dated from a severe confinement, and the stricture close to the internal os uteri would not allow the passage of the smallest catgut bougie. In this instance I employed Stafford's instrument for dividing impermeable urethral stricture; and the result of this proceeding, and of the subsequent introduction at first of sponge tents, and afterwards of metallic bougies, to keep the passage pervious, was in the highest degree satisfactory.

In no other case, however, has the employment of a cutting instrument for widening a narrow cervix uteri appeared to me either necessary or proper.

LECTURE VI.

DISEASES OF THE UTERUS.

Immediate results of pregnancy and delivery not treated of, though their remote effects are numerous and important.

INFLAMMATION, and kindred processes.

HYPERTROPHY OF THE UTERUS from deficient involution after delivery or abortion—from uterine irritation. Illustrative cases, and treatment. Partial hypertrophy affecting the cervix; its effects. Treatment, removal of enlarged cervix, dangers of hemorrhage.

INFLAMMATION. ACUTE INFLAMMATION; its rarity, its causes, symptoms, and results. Treatment.

A COURSE of lectures on the diseases of women, in which it is not proposed to include the ailments either of the pregnant or of

the puerperal state, must needs present much that is defective in arrangement and incomplete in execution. These defects, however, appear to me to be a smaller evil than would be the occupying of much of your time with the reconsideration of subjects such puerperal fever, or phlegmasia dolens, which have already come before your notice in the lectures on midwifery, and which, besides, have engaged, and to such good purpose, the attention of many writers both in this country and on the continent.

Sacrificing, therefore, accuracy of nosological arrangement to practical convenience, I shall leave unnoticed alike the special diseases of pregnancy, and the morbid conditions which follow immediately on delivery. We shall find, however, over and over again, that conception, pregnancy, and delivery, are among the most frequent exciting causes of disorder of the sexual functions, and of diseases of the sexual organs, and also that many ailments which come under our care, days, or weeks, or even months afterwards, admit of being traced back uninterruptedly to their commencement in a miscarriage, or a severe confinement, or in some interruption to the changes that should occur in the puerperal state. This is especially the case with all the diseases which are the result of *inflammation*, or of kindred processes, such as pelvic abscesses, hypertrophy of the uterus, induration of its cervix, or ulceration of its orifice, with all the varied forms of menstrual disorder and of leucorrhœal discharge which attend upon them.

The active forms of inflammation of the sexual organs, which threaten life soon after delivery, are not, however, those whose sequelæ most frequently present themselves to our notice in hospital practice, or call for our attention in private. In many of these the local mischief is but a part of the disease, one of the consequences of that altered condition of the blood in which the essence of puerperal fever consists, and contributes only in a secondary degree to imperil or destroy the patient's life. In such cases, if the patient survive the constitutional malady, the local mischief is slowly but surely repaired during the course of her tedious convalescence, and the sexual organs, restored to their integrity, resume in time the healthy performance of their functions. In other instances, where the affection has been from the commencement purely local, the severity of the attack and the intensity of the suffering usually lead to corresponding activity and decision in the treatment, while the sense of past danger inspires in the patient and her friends the observance of most minute precautions until her health is completely re-established. Hence it results that the great majority of cases of inflammation and enlargement of the womb, of inflammation of the uterine appendages, or of suppuration in the pelvic cellular tissue, which date back to pregnancy, miscarriage, or delivery, weeks or months before, are not only chronic in their course, but were attended from the very outset by symptoms of comparatively slight severity, and manifested themselves by a state of ailing rather than of serious illness; or succeeded to a sort of imperfect convalescence, for the incom-

pleteness of whose character no adequate cause appeared for some time assignable.

One result of inflammation succeeding to miscarriage or delivery is to *check that process of involution by which the womb ought to be restored* in a few weeks to the size and condition which it presented before pregnancy began. If you examine the body of a woman who died of uterine inflammation after delivery, one of the first things to arrest your attention will be the large size of the womb, which, after the lapse of four or five days, will be found to be as large as the healthy womb when only twenty-four or thirty-six hours have passed since the completion of labor. This increased size of the uterus, too, is not due simply to its natural contractions being arrested, nor to the unusual afflux of blood towards it, nor to the effusion of the products of inflammation into its substance, though possibly all of these causes may in various degrees contribute to it; but is in a great measure owing to the mere suppression of those changes which ought to occur after delivery, and with whose nature the microscope has made us in some measure acquainted. In a perfectly healthy condition, a large amount of the blood previously supplied to the uterus is at once cut off by the powerful contractions which either completely close the vessels distributed through its substance, or at any rate greatly diminish their calibre. Its tissue having performed the function for which it was raised during pregnancy to so high a degree of development, undergoes, as other tissues do previous to removal, a process of degradation or fatty degeneration; and having thus become more readily susceptible of removal, is either absorbed, or is discharged with the lochia from the interior of the womb. For some three or four weeks, little else goes on besides this process of degradation and removal, and this is much more active during the second week[1] after delivery, than either before or after that period. There next begins a process of reconstruction of the organ; and nuclei, and caudate cells, and elements of new fibres are formed, which await only the stimulus of a fresh conception to attain the same perfection of structure as was manifest in the former uterus. Observers are not altogether agreed as to how soon this reparative action begins; whether it is quite secondary to the removal of the elements of the old uterus, or whether, as seems indeed most likely, removal of the old and construction of the new go on actively at the same time. The interior of the uterus undergoes changes as considerable as those which take place in its substance; and it is not until its lining membrane, with the exception of that of the cervix, has been several times reproduced and then cast off in a state of fatty degeneration, that it resumes the same condition as before impregnation.[2]

[1] According to Heschl, *Wiener Zeitschrift*, and Schmidt, *Jahrbücher*, vol. lxxvii, 1853, p. 341.

[2] The best microscopic observations on this subject are those of the late Franz Kilian in Henle's *Zeitschrift*, vol. viii, p. 53, and vol. ix, p. 1, with which those of Heschl, *loc. cit.*, generally correspond, though there are some differences between

The occurrence of inflammation appears to interrupt these processes, for though fatty degeneration of the tissues takes place, yet the removal of the useless material is but imperfectly accomplished, while the elements of the new uterus are themselves, as soon as produced, subjected to the same alteration, and the organ remains, long after all active mischief has passed away, increased in size, and at the same time composed of a tissue inapt for all the physiological processes of conception, pregnancy, and childbearing. I cannot pretend to tell you the intimate nature of the changes which the uterine substance in these cases may afterwards undergo, for the microscope here leaves us for the present at fault, and many circumstances will always render the investigation of the effects of inflammation, and of its kindred processes when seated in the womb, particularly difficult. It must, however, be at once apparent, that after inflammation has passed away, its effects may remain in the larger size and altered structure of the womb, and that the very nature of these changes will be such as to render the repair of the damaged organ both unlikely to occur, and slow to be accomplished, and must leave it in a condition peculiarly liable to be aggravated during the fluctuations of circulation, and alternations of activity and repose, to which the female sexual system is liable. It must also be obvious that for these results to be produced, it is by no means necessary that the inflammation be very severe in character, but that a degree of inflammatory action far short of what is requisite to endanger life or to occasion much suffering, may yet interpose a great obstacle to the complete involution of the womb.

The importance of this condition is due less to the symptoms to which it gives rise, so long as it remains uncomplicated, than to the circumstance, that complications of some kind or other are very apt to occur; that the heavy uterus is very likely to become prolapsed, or the enlarged uterus to become the seat of permanent congestion, or to be attacked by chronic inflammation. A sense of weight in the pelvis, more or less bearing down, and a disposition to excessive and over-frequent menstruation, are seldom absent when any considerable uterine enlargement exists, and in general the size of the womb and the severity of the symptoms are in direct proportion to each other.

One of the best-marked instances of this *deficient involution* of the uterus which I have met with, occurred in the person of a woman aged thirty-one, who had been married twelve years, and had given birth to five children at the full period, and had also miscarried three times. Her last abortion occurred at the third month, six weeks before her admission into St. Bartholomew's Hospital. Since this abortion she had suffered from shooting pains at the lower part of the back and in the abdomen, from

their statements in points of detail. Dr. Simpson was, I believe, the first to call attention to the practical bearings of the subject. See his *Contributions to Obstetric Pathology*, vol. i, p. 26.

bearing down pain during every effort at defecation, and from a constant sanguineous discharge, by which she had been much exhausted. The medical man under whose care she had been, told her that she had a tumor in the womb. On examination the uterus was found low down, completely retroverted, the os uteri being directed forwards, and only a short distance from the vulva. Almost immediately behind the os, the uterus swelled out into a globular tumor of the size of a small apple, elastic to the touch. The canal of the cervix was open so as to admit the finger without difficulty. On introducing the uterine sound, it passed, with the concavity turned backward, for a distance of five inches and three-quarters, and on turning it round, the tumor previously distinguished completely disappeared.[1]

The patient was kept quiet in bed, was allowed a little wine and meat diet, and the hemorrhage ceased, and the canal of the cervix contracted under the use of the ergot of rye, though no sensible uterine action was excited by the remedy. She afterwards took preparations of iron, and began the employment of the cold douche to the uterus, by which she was already much benefited, though the uterus was not much diminished in size, when the outbreak of small-pox in the ward compelled me to discharge her eighteen days after her admission. I saw her three months afterwards; her health was much improved, but she complained of profuse menstruation, returning every fortnight, and her womb was retroverted, though it was much smaller than before. At the end of rather more than three years she again came under my notice, having in the interval miscarried several times at an early period of pregnancy. Her uterus was still retroverted, and the abortions were probably due to the organ having been bound down by adhesions in this unnatural position. It had, however, greatly diminished in size, and was now little if at all larger than the healthy womb.

Besides this form of uterine enlargement from defective involution, there is another, occasionally, though much less frequently met with, in which the *enlargement of the womb* takes place independent of previous pregnancy, and is *the result of a more genuine hypertrophy*. Cases of this kind, which I have met with exclusively in women who have lived for a longer or shorter time in childless marriage, present themselves in most instances without any definite clue to their history; a sense of weight in the pelvis, pain usually of a burning character, and hemorrhages having

[1] Dr. Matthews Duncan has described, in *Edinburgh Monthly Journal*, June 1856, p. 1057, some cases in which he believes that, independently of any disease of the uterus, there existed a state of unnatural patency of the Fallopian tube on one side, admitting of the passage of the uterine sound along it for several inches. Such a state, however, which is probably one of considerable rarity, is not likely to be confounded with instances of enlargement of the womb itself, since an ordinary vaginal examination would at once inform us whether or no that organ is larger and heavier and less movable than natural, conditions which were absent in the instances that Dr. Duncan relates of dilated Fallopian tube.

gradually come on, and forced themselves by their slowly-increasing severity (sometimes not till after the lapse of years) on the patient's notice. Excessive or intemperate sexual intercourse does not produce it, though that leads to its own train of evils; but there has, in many instances, seemed to be good reason for associating the condition with the imperfect performance of that function, and sometimes the evidences of this being the case have been conclusive.

Some years ago I saw a lady, aged forty-three, who, during thirteen years of married life, had never been pregnant. She had always menstruated painfully, and rather profusely; and both these ailments had by degrees grown worse, and this especially during the last few months. She complained of sense of weight and dragging immediately on making any attempt to walk, and induced even by remaining long in the sitting posture. The bowels were constipated, and defecation was difficult. Menstruation was very profuse, accompanied by discharge of coagula, while at uncertain intervals during its continuance most violent paroxysms of uterine pain came on. On examination, the enlarged uterus was distinctly felt above the symphysis pubis as large as the doubled fist, and per vaginam the whole organ was found much enlarged and much heavier than natural; the cervix large and thick, but not indurated; the os uteri small and circular; and the hymen was entire.

Rest, attention to the bowels, local leeching every fortnight, continued for several months, together with the careful employment of preparations of iron combined with small doses of the iodide of potassium, were followed by the gradual suppression of the menorrhagia, by great diminution of all the patient's painful sensations, and by marked lessening of the size of the uterus. I believe, too, that in most cases, a similar plan of treatment, coupled of course with temporary separation from her husband's bed, will be followed by improvement, and, if long enough persevered in, by complete recovery of the patient. In the instance I have just related, the patient's age and the number of years that she had already been married put aside all question as to the possibility, or at least the probability, of her becoming pregnant. A somewhat similar state of things is, however, sometimes observed in younger women, and within a few months after marriage; and the state of the husband's virile powers will be a point concerning which it will be your duty in these cases to make some inquiry, and perhaps even to offer some suggestion. You must bear in mind that not only the old rake, but also the hard student, or the man who has long led a life of perfect chastity, often has but feeble sexual power. Such a person marries: anxiety for children, or some of those complex feelings which at once come into play in all matters concerning the generative functions, lead him to over-frequent attempts at sexual congress. The act is incompletely performed; nervous apprehension leads to its still more frequent attempt and its more incomplete performance; and, unless by

good fortune pregnancy has taken place very soon after marriage, a condition of permanent uterine congestion is induced, which leads to hypertrophy of the organ, and the wife becomes as inapt for conception as the husband is for procreation. But I have said enough concerning a matter which I would gladly have left unnoticed; your own good sense will suggest to you what advice to give, and your good taste will dictate to you how best to give it.

Over and over again in the course of these Lectures, I shall have to speak of hypertrophy of the uterus as a secondary result of many other ailments of the organ, and as greatly increasing the difficulty of their cure. If fibrous tumors form within its substance, the uterus increases in size; and this in a measure proportionate to the intimacy of the relations between the foreign body and the tissue of the womb. If the organ sinks lower down than natural, the result of the unaccustomed irritation to which it thereby becomes exposed is to produce its enlargement, and thus to increase the difficulty of cure of the prolapse. In short, whenever the uterus is exposed to unusual irritation, it increases in size; not necessarily, nor I believe generally, as the result of inflammation, but because the organ is composed of formative material, which excitement of any kind will call into active development, though it is only under the stimulus of pregnancy that development goes on to any useful end, or attains its full perfection.

There still remains *one form of simple uterine hypertrophy* to which I must refer before passing on to other subjects. It is one *in which the enlargement is limited to the neck of the womb*,[1] and sometimes even involves only one lip, generally the anterior. In the latter case it is usually consequent on childbearing, and perhaps is, strictly speaking, rather a result of a partial deficiency of involution of the uterus, than the effect of a genuine hypertrophy of the part.[2] When affecting the whole of the cervix, it has, however, not appeared to be traceable to any such cause, since I have met with it not only in sterile women, but even in those who were unmarried. The ailment seems to consist of simple overgrowth of the part, the neck of the womb being in all respects healthy to the touch, and the os uteri free from any trace of disease. The chief increase is in length, the portio vaginalis, instead of being half or three-quarters of an inch long, measuring an inch and a half, or two, or even three inches. In those instances in which the elongation of the cervix is most considerable, the uterus sinks down in the pelvic cavity, so that the os uteri

[1] Though noticed before by continental writers, Dr. Evory Kennedy was the first in this country to call attention to this affection, in a paper published in the *Dublin Medical Journal* for 1838.

[2] There are two other forms of hypertrophy of the cervix uteri which I shall consider hereafter; one in which the elongation of the neck of the womb is a secondary result of prolapsus of the vagina; the other in which the hypertrophy is limited, or nearly so, to the mucous membrane, and in which the outgrowth assumes the form of a polypus, and has been described under that name. See the Lectures on Prolapsus and on Polypus.

sometimes comes to lie just within the orifice of the vulva, or even projects beyond it, giving rise to many of the symptoms of prolapsus, and being often taken for it by the patient.

The symptoms, as just mentioned, are those of prolapsus, and consist of a sense of weight and bearing down, aggravated by any exertion, and increased also during the increased afflux of blood towards the pelvis at each menstrual period. The condition presents also a mechanical impediment to sexual intercourse, and once or twice discomfort in the act has been the patient's chief reason for applying for relief. I believe the state also to be an occasional cause of sterility, probably from the male organ not coming into contact with the os uteri, and from the consequent difficulty in the access of the fecundating fluid to the womb. For this effect, however, to be produced, the hypertrophy must needs be considerable.

I know no cure for this affection, except the removal of a portion of the superfluous growth. But as the condition is one productive of inconvenience rather than of serious evil, and as the removal of a portion of the cervix uteri is by no means devoid of risk, it is the wiser course to leave the smaller degrees of hypertrophy without interference. Even though the desire of children should prompt your patient to submit to it, I should advise you to be very guarded in the promises you make with reference to this point, for it is quite possible that there may be some deeper seated reason for the woman's sterility, one which no mechanical proceeding can remedy.

If the operation is determined on, the patient lying on her back, and having been brought under the influence of chloroform, the uterus may readily be drawn down with hooks, and a portion of the cervix removed by a pair of curved blunt-pointed scissors, or by means of the *écraseur*. The latter instrument seems to afford a complete guarantee against that formidable hemorrhage so extremely difficult to control by ice, or by styptics, or even by the most careful plugging of the vagina, which used to form one of the great hazards of the operation.[1] The recollection of this accident on two occasions made me shrink from running the same risk again; but, during my connection with St. Bartholemew's Hospital, Mr. Paget removed from a patient of mine, by means of the *écraseur*, a portion of an hypertrophied cervix uteri, an inch and a half long, by five inches in circumference, and which weighed an ounce and a half, without the loss of a single drop of blood. The issue of this case, however, was not favorable, for death from peritonitis occurred fifteen days afterwards, an accident to which the patient was perhaps the more exposed in consequence of the presence of a large fat cyst of the ovary. The cyst did not indeed appear to have been the point of departure of the mischief, though its existence would have been regarded as com-

[1] With reference to which, see the remarks by M. Pauly, at page 473 of his *Maladies de l'Uterus*, &c., 8vo., Paris, 1836.

pletely contraindicating any interference with the womb had not the constant protrusion of the cervix beyond the external parts been the occasion of extreme discomfort, and almost prevented the patient sitting down. Though not a frequent result of amputation of the neck of the womb, peritonitis is still, as even Lisfranc's cases show, a danger by no means to be lost sight of. It must remain for further observation to determine whether the risk of its supervention is increased by the substitution of the slow operation with the *écraseur* for the quick amputation of the cervix with a sharp cutting instrument.

From the study of simple errors of nutrition, leading to the increased growth of an organ, the transition is easy to the examination of the effect produced on it by inflammation. In the case of the uterus, however, there are many circumstances which render this study peculiarly difficult. Though we regard it as a single organ, it is yet made up of parts, differing widely in structure and in function, and having very different tendencies to disease, while these tendencies vary at different times according as the highest functions of the sexual organs have been recently exercised or have never been called into activity, or as the period for their performance has already passed. Moreover, the evidence of pathological anatomy, which corrects so many errors in other departments of medical inquiry, is little available in the case of diseases, which, like the inflammatory affections of the unimpregnated womb, hardly ever lead to a fatal issue; so that we are in constant danger of mistaking pseudo-morbid appearances for serious alterations, or of exaggerating the importance of real changes of structure. Besides, the office of the uterus in the unimpregnated condition is so humble, and its functions are so few, that there must needs be great sameness in the symptoms which attend upon its disorders; and disturbance of menstruation, increase or alteration of the naturally scanty secretion furnished by its mucous membrane, are alike met with in the most diverse affections. Our means of examining the condition of the womb are also very imperfect, compared with those that we possess for investigating the state of other organs; and hence the question often arises, whether the signs of disease which we discover are the cause of the symptoms, or whether they are the index of other and more important changes, or whether they are neither the one nor the other, but mere casual concomitants of graver ailments, concerning whose nature and degree we can from them deduce no conclusion. From these circumstances it has arisen, that the inflammatory diseases of the uterus have been and still are the subject of conflicting opinions, that much of what may seem to me to be true concerning them will be unavoidably at issue with what is taught by others, and that, hereafter, your own expèrience may lead you to conclusions differing on many points from both.

Before entering on debatable ground, however, I may say a few words concerning *acute inflammation* of the unimpregnated uterus, an ailment universally admitted to be of rare occurrence. I have,

however, seen it come on with great severity in the course of gonorrhœa, and believe that not only in this case, but also in the generality of instances, the inflammation begins in the interior of the womb, whence it extends outwards, though it involves the muscular substance of the uterus to a much less degree than its lining membrane. The tendency indeed of inflammation of the uterine mucous membrane to extend along the Fallopian tubes, and to attack the peritoneum, is much stronger than to affect the substance of the organ; and though abscesses sometimes form as a secondary result of the disease, they are yet almost always situated in the pelvic cellular tissue, or within the folds of the broad ligament, and scarcely ever in the uterine wall itself.

The affection is not only infrequent in its occurrence, but it is still rarer for it to endanger life, and the only instance which I have seen after death of the unimpregnated uterus in a state of acute inflammation, was in the case of a lady who died of peritonitis, for the supervention of which no cause could be assigned during her lifetime. On examination, however, her uterus was found to be much enlarged, and a fibrous tumor of the size of a hen's egg was imbedded in its posterior wall. Both the tumor and the thickened uterine walls were of a bright rose-red tint, and presented a remarkable degree of succulence. The cavity of the organ was dilated, and contained at least an ounce of pus, which seemed to be retained within it by the flexure of the body upon the neck of the organ, while its lining membrane had exactly the appearance of bright red velvet, though it afterwards quite lost that character by long immersion in spirit.

I have referred to the extension of gonorrhœal imflammation as one cause of the affection; sudden suppression of the menses may likewise produce it, as also may unaccustomed and intemperate sexual intercourse; while, after one attack, the uterus is often left in a condition in which comparatively slight causes will suffice to produce it. The symptoms by which it is attended are a sense of pain and weight in the pelvis, with a feeling of heat or throbbing, and much tenderness over the tubes. The pain extends down the thighs, is aggravated by exertion, by sitting on a hard seat, by defecation, or by any attempt at sexual intercourse; while in this, as in many other affections of the uterus, there is often more or less irritability of the bladder and desire to pass water frequently, the urine being generally high-colored, though not voided with pain. Another symptom, not peculiar indeed to this affection, though observed during its course in a very marked degree, is the occurrence at irregular intervals of paroxysmal exacerbations of pain of very great severity, lasting for an hour or two, and then subsiding, to recur again, equally causelessly, in twelve or twenty-four hours. Coupled with these attacks of paroxysmal pain, or sometimes occurring independently of them, though usually associated with much suffering, are seizures of diarrhœa, during which the patient has ten or twelve watery evacuations in as many hours, and the bowels then become constipated, and remain so for

two or three days. At the commencement of the attack there is no vaginal discharge, but in a day or two an abundant puriform or sero-purulent secretion is poured out, often offensive to the smell, and not infrequently slightly tinged with blood. On examination per vaginam there is always increased heat of the parts, with tenderness amounting to severe pain on touching the uterus, while the vessels of the cervix may be felt pulsating with great force, and the uterus is found heavier than natural, and in many instances obviously increased in size. The tenderness of the organ has always led me to abstain from any attempt at measuring it by means of the uterine sound, but I can readily believe the statement of the late Professor Kiwisch, who states that he has found its cavity from six to ten lines longer than natural.[1]

The amount both of constitutional disturbance and of local suffering varies greatly in different cases, though, except when the peritoneum becomes affected, it is unusual for the symptoms to be so severe as to warrant any grave apprehensions as to the patient's ultimate recovery. There are, however, two other risks besides that of the occurrence of peritonitis, against which it behoves us to be on the watch during the whole course of this affection. The one is that of the ovary, or the broad ligament, being attacked by inflammation, an accident very likely indeed to issue in the formation of abscess; the other is of the acute evil passing into a subacute or chronic stage, in which the suffering is much less, but the prospect of permanent cure less also; and to this latter result all cases of acute uterine inflammation, if let alone or inadequately treated, seem naturally to tend.

The *treatment* of these cases is abundantly simple, the indications are very clear, and the mistakes which are made seldom consist in doing what is wrong, but rather in pursuing the right end by inadequate means. Some rules are so simple, and the necessity for them is so obvious, that it seems almost superfluous to insist upon them. Rest in bed in the horizontal posture, a simple diet, and antiphlogistic regimen, and, I scarcely need add, abstinence from sexual intercourse, for, indeed, that is usually far too painful to be attempted, are essential to the patient's recovery. Palliatives, however, do not suffice for the patient's cure, but the inflammation must be at once attacked energetically, and depletion can, I believe, never be dispensed with. It is not, indeed, usually necessary to resort to general depletion, but local bleeding is invariably indicated, and in spite of the tenderness of the parts, which makes the patient shrink from the introduction of the speculum or of the leech-tube, much more relief is afforded by the application of four or six leeches to the uterus itself than of four times that number to the hypogastrium or the groins. Still, whenever the constitutional disturbance is considerable, or the local suffering very severe, I think it will be your wiser course to take a small quantity of blood from the arm before you have recourse

[1] *Klinische Vorträge*, &c., 1st vol., 4th edition, Prague, 1854, p. 578, § 249.

to local bleeding. I dare say you may have seen the application of leeches to the abdomen appear to aggravate the symptoms in one case of peritonitis while it entirely removed them in another, and may have found on inquiry that in the latter case the leeching had been preceded by general bleeding, while in the former an attempt had been made to employ local depletion as a substitute for it. Just the same thing I have observed in cases of uterine inflammation, and have known the application of leeches to the womb induce a paroxysm of almost intolerable suffering, though the same measure would have relieved a less severe attack, and even in that very instance perfected the patient's cure after general bleeding had been employed. In any case in which you find severe pain coming on during the application of leeches to the uterus, I would advise you to remove the leeches, and to withdraw the tube as soon as possible. A perseverance in the attempt will issue only in a violent attack of pain. In any case, too, in which violent pain has been induced by local depletion from the uterus, it is expedient not to venture on it again soon, but to substitute for it the application of four or six leeches to the anus, which draw much more blood, and afford far more effectual relief to the organ than double the number applied to the hypogastrium, or to the groins.

After depletion, the tepid hip-bath and anodynes are the remedies on which we must mainly rely. I will not now repeat, with reference to the comparative merit of different remedies of this class, the remarks which I made when speaking about dysmenorrhœa, but there is one very serviceable medicine, belladonna, that I did not then mention. It is well, as the strength of the extract varies considerably, to begin with a small dose, as a sixth or a quarter of a grain, in combination with three grains of camphor, and to repeat it every four hours, increasing the dose if no injurious effect is produced by it. Another means of alleviating pain, which in cases of this description has sometimes proved extremely useful, consists in the application of a linseed poultice, into which an ounce of laudanum has been stirred while it was mixing, and this, if covered over with oiled silk or gutta-percha, as all poultices should be, will keep warm for many hours, and afford much of the ease which a dose of opium would procure, without its unpleasant consequences.

That irritable state of the bowels which gives rise to occasional attacks of diarrhœa is best controlled by small doses of Hydrarg. c. Cretâ and Dover's powder twice a day, while the attacks themselves, as well as the paroxysms of uterine pain, are most speedily arrested by opiate enemata.

It is not possible to lay down any rule as to the repetition of depletion; or as to the extent to which such bleeding must be carried; since these questions must in each case be determined by the urgency of the symptoms. If the pain be seated in one or other iliac region, and still more if there be any distinct swelling or even a sense of fulness in that situation, it may be assumed

that the ovary has become the seat of inflammation, and leeches must then be applied externally to the number of eight or twelve, and repeated once or twice at intervals of a day or two, till all acute pain and all considerable tenderness have disappeared. Afterwards, the application of a succession of small blisters over the affected part has seemed to me very useful in removing all pain and tenderness, and has, I believe, the further good effect of reducing the size of the enlarged ovary. With the same view I have sometimes employed an ointment of six drachms of mercurial ointment, two scruples of camphor, and two drachms of extract of belladonna, which is rubbed upon the affected side twice a day; though usually I confine the use of mercurial remedies to cases where the ailment seems altogether passing into a chronic state, in which permanent enlargement of the womb and induration of its tissue are apt to supervene. In these circumstances a carefully conducted mild mercurial course is often very beneficial, the bichloride of mercury being preferable to other preparations of this drug, from its not readily irritating the bowels or affecting the gums, and from its being quite compatible with the generally tonic plan of treatment which the patient's state usually requires.

In conclusion two other remarks may be made. The first is that a considerable degree of uterine tenderness is often left behind for many weeks when the organ has been the seat of inflammation, and this not infrequently renders sexual intercourse very painful, sometimes almost impossible. This does not, however, warrant anxiety, for it tends by degrees to disappear; and with this assurance you must comfort your patient. The other is, that you cannot, after an attack of uterine inflammation, watch your patient too carefully during the next one or two menstrual periods. It is at these seasons of congestion of the sexual organs that the great danger exists of the fire, which perhaps was merely smouldering, being rekindled; while if your patient passes safely through that process, you may feel confident that not only the recent evil is removed, but also that no ill consequences have remained behind.

LECTURE VII.

INFLAMMATORY NATURE OF THE UTERUS.

Chronic Inflammation. Discrepancies of opinion as to its frequency; influence of invention of speculum on opinion with reference to it. Conflicting views as to frequency of primary uterine ailment; reasons for taking affirmative side of question.

Theory of dependence of almost all ailments on Inflammation of Cervix and Ulceration of Os. Character of ulcerations described. Influence of this opinion on practice; its correctness discussed, and reasons for rejecting it. Injurious nature of practice to which the opinion leads, pointed out and explained.

From the comparatively rare affection, acute inflammation of the unimpregnated uterus, which occupied our attention at the

last lecture, we pass by a natural and easy transition to the study of cases in which *inflammation of a* more *chronic character* attacks the organ, or is left behind after the subsidence of active disorder. Some twenty years ago, this subject also might have been treated briefly, and have been dismissed speedily; but at the present day it may not be so passed over. Inflammation of the uterus is now regarded by many writers as the most frequent of all diseases of the organ, and its consequences as so far-reaching that they may persist for many years, disturbing its functions, altering its structure, and outlasting in their ill effects even the period of sexual vigor. This opinion, too, which tends to bring about a complete revolution in theory and practice concerning uterine ailments, is entertained by persons whose authority is entitled to such weight, is enforced by arguments which seem so plausible, and supported by an appeal to such large experience, that if it do not at once compel our acquiescence, at least it cannot be rejected without much consideration and careful examination.

Unwillingly, therefore, I find myself compelled to quit that simple exposition of generally received truths which is the main object, and constitutes the chief utility of elementary teaching, to place before you opposing views and conflicting statements, and to point out to you the reasons why this opinion appears to me erroneous, and the practice founded on it unsound.

This, however, is neither a very short nor a very easy task. I cannot even enter on it without first asking you to look back with me to the state of knowledge concerning the structure, functions, and diseases of the uterus some thirty or forty years ago. It is only by a just appreciation of the state of science then, that you will be able to understand how its recent increase has yet left room for such wide discrepancies of opinion; how one discovery overrated, and another undervalued, may possibly for a time have ministered to the furtherance of error rather than to the advance of truth; or at least may have mingled them together in a confusion which we need additional light to enable us to disentangle.

So lately even as thirty years ago, neither was the structure nor were the functions of the sexual organs at all correctly understood. The uterus, it is true, was known to be muscular; but neither the process by which its muscularity becomes so marked during pregnancy, while it ceases to be clearly apparent soon after delivery, nor the intimate nature of its structure in the virgin state, had been the subject of inquiry. The interior of its neck was seen to be invested by a membrane arranged in folds, between which minute glands or follicles were present in great abundance, but the existence of a distinct lining membrane in its cavity was rather inferred from the results of observation in some forms of disease, than demonstrated by anatomical investigation in a state of health. Though the structure of the ovaries was in the main understood, yet the ovarian ovule had not been discovered, and the function of the ovaries was supposed to be called into exercise only under the stimulus of sexual congress. Hence it resulted that the im-

port of menstruation continued to be a riddle unread; all that was certainly known about it being that it was a function which bore an important though undefined relation to the generative process.

When the knowledge of healthy structure and of natural function is defective, the knowledge of diseased structure and of perverted function must be imperfect too. It was assumed that an organ of such dense structure as the unimpregnated uterus was little liable to inflammation and its kindred processes, though in some rare cases the neck of the womb was allowed to be their seat. Its lining membrane, supposed to be so rudimentary in the unimpregnated state, was not thought worth consideration among the possible seats of disease; and leucorrhœal discharges, imagined to be almost always furnished by the vagina, were usually regarded as the consequence of the index of general debility. The different morbid growths were not properly discriminated: scirrhus, a disease of extreme rarity, was assumed to be of very frequent occurrence; and to it were attributed almost all chronic affections of the neck of the womb attended by induration of its substance and increase of its size.

In this state of knowledge, when observation must have been perpetually clashing with preconceived opinions, M. Récamier[1] first thought of employing an instrument—the speculum—for the more convenient application of local remedies to cancerous ulcerations of the womb. Its use, however, was not long confined to this object; for practitioners found that by means of it they were enabled to discover various morbid conditions of the uterus with which they were previously unacquainted, and to which it was but natural to attach importance as the probable cause of many before inexplicable symptoms. In fact, by its means one important question was speedily and decisively set at rest; for leucorrhœal discharges were ascertained to be derived in great measure not from the vagina but from the uterus, to be associated with various diseased appearances of its orifice, and to be, sometimes at least, removed by different remedies directed to that part and to the neck of the womb. So long as the lining membrane of the uterine cavity was supposed to exist in the unimpregnated state merely in a rudimentary condition, it was most natural that an exaggerated importance should be attached to the various morbid appearances of the os and cervix uteri; and so long as the ovaries were believed to be called into activity only at the time of sexual congress, it was to be expected that their share in the production of diseased phenomena should be rated very low. Ignorance with reference to these points was shared alike by the advocates of the employment of the speculum and by the opponents of its use; and in these

[1] Not absolutely first, however, according to Hennig, *Der Katarrh der Weiblichen Geschlichtstheile*, 4to., Leipzig, 1862, p. 89; for the suggestion was first made by Bozzini, in a work published at Weimar in 1806, though the form of his speculum was such as to deprive it of all practical utility.

circumstances their controversies were not likely to lead to any satisfactory result.

We need not, indeed, wonder that the disputants on both sides, thus imperfectly furnished for the debate, should have narrowed the question to one of details touching the expediency of employing an instrument which some pronounced to be all-important, whilst others denounced it as useless, mischievous, and even immoral. It must be obvious, however, to us who enjoy the advantage of the additions to physiological knowledge which the past quarter of a century has brought with it, that the subject which we have to consider is one far more extensive than the propriety of adopting or rejecting a certain means of diagnosis and method of treatment; and that it really concerns the opinion which we entertain with reference to the main principles of uterine pathology. Regarded in this light, what might at first have seemed a trivial inquiry at once assumes grave importance, and becomes, I think, deserving of our most serious attention.

The constitutional origin of local diseases has, ever since the time of John Hunter, engaged, and most deservedly, the closest attention of the best practitioners of medicine; and with the advance of knowledge we find the sympathies to be wider and still wider by which the well-being of the whole organism and that of its various parts are bound together. Illustrations of this fact have abounded in the preceding Lectures: and we have seen how the excess of blood, or its deficiency, or its altered quality, may induce menorrhagia, or may render the menstrual flow scanty: or how other more complex ailments may have a similar effect, or may even cause the function to be performed with an unusual amount of suffering. But some practitioners, and those especially who reject the novel modes of investigating uterine disease, and who take small account of the facts which those modes have either revealed or have brought into greater prominence than heretofore, apply this explanation to almost all diseases of the womb, alleging that uterine ailment is generally preceded by constitutional derangement, and is mainly dependent upon it, and that, consequently, treatment must be addressed principally to the latter and more subordinately to the former.[1]

There is another view directly antagonistic to this, which regards the uterine ailment as the primary and more important in almost every instance, and according to which the local disease is everything, the constitutional disorder nothing else than its necessary result. The influence of these latter opinions is apparent in the practice of those who are constantly on the look-out for a mechanical cause of dysmenorrhœa, and who frequently dilate or incise the cervix uteri for its cure, who trace the gravest evils to slight misplacements of the womb, and introduce instruments into its

[1] A series of able papers devoted to the exposition of this view, was published by Dr. F. W. Mackenzie, in vols. iii and iv of the *London Journal of Medicine* for 1851 and 1852.

interior to remedy its malposition; or, lastly, who discover in some very small and limited ailment of the mucous membrane of the os uteri an adequate explanation of the most varied and most distant ills, and who as sedulously adopt as their opponents studiously avoid local treatment for the cure of uterine disorders.

I shall presently have occasion to point out to you what seem to me to be the defects in the latter view, but must first call to your mind certain considerations which must, as it seems to me, prevent us from giving implicit assent to the former, since they render it probable that the uterus, more frequently perhaps than any other organ of the body, should be the seat of certain forms of local ailment, and should consequently require the frequent employment of local treatment.

It would not be easy to imagine a state of things more favorable to the occurrence of ailments dependent on venous congestion, or in which those ailments would be more difficult to remove, or more apt to return, than is observed in the case of the uterus during the whole period of activity of the generative powers. The return of blood from the organ, which is rendered difficult by its situation at the lower part of the trunk, is still further impeded by the absence of valves from its veins; while every month, for several days together, this organ and its appendages are the parts towards which blood flows in superabundant streams. During this period, the natural secretion from the uterus and Fallopian tubes is much increased; the epithelium covering their surface is detached, and reproduced again and again; hemorrhage breaks out along the whole tract,—and it is not until this has continued for some days that the congestion ceases, and the parts subside once more into their former state of quiescence,—the uterus remaining, however, for a short time heavier, and its tissue looser, and more abundantly supplied with blood than it was before. I need not stop to tell how slight a cause may protract this hemorrhage, or how some accident may check it; nor need I labor hard to prove that in either case there must be a general disturbance of the functions of the organ—a general impairment of the health of the individual: exhausted in the one instance by loss of blood, broken down in the other by the suffering, both general and local, which the return of the periodical excitement of the generative organs, unrelieved by their customary depletion, cannot fail to bring with it. In what organ of the body does one find a parallel to this series of occurrences?

Again: the uterus is held in its position by supports which allow to it a large measure of mobility, and whose power is generally diminished by the very causes that increase the weight of the body they have to bear. Hence it is very apt to become displaced, and to be displaced in a downward direction, or prolapsed. And such prolapsus not only brings with it a variety of painful sensations due to the womb dragging upon its ligaments, but the moment the organ ceases to be suspended in the pelvic cavity it

becomes exposed to shocks of various kinds, to irritation from sources from which it was previously safe. The neck of the womb, even when that descent is not very considerable, becomes a sort of stem on which the organ rests upon the floor of the vagina. In this position it is liable to disturbing causes almost numberless; sitting, riding, exertion of any kind, the very passage of the fæces along the rectum, produce pain, keep up congestion, and favor that slow increase of size which seldom fails to occur in parts the seat of long-continued irritation, and which offers one great impediment to the cure of many affections of the womb.

Another peculiar and fertile source of disorders of the womb is furnished by the changes that attend upon conception and parturition, and their frequent interruption. With these changes, even in the healthy state, our acquaintance is at present too imperfect for us to appreciate with accuracy the nature of the mischief that may result from their disturbance. We know, indeed, many things concerning these processes of which our predecessors were ignorant; but our increased knowledge is as yet only sufficient to show us the difficulties of the problem, not sufficient to furnish its solution. The growth of the pregnant womb is not, as it was once supposed to be, a mere increase in size and unfolding of texture of the muscular fibres already present there, but is as much the result of a new formation as is that of the fœtus contained within it; its tissues going through the same development from a rudimentary condition to a high organization. Cells elongate into caudate bodies, these unite into fibrillæ, while the mucous membrane increases in vascularity, grows in thickness, and becomes developed into decidua. The small, dense, lowly-organized uterus becomes the large, vascular, powerful muscle which we see it to be at the end of pregnancy; when having served as the residence of the fœtus, and as the medium through which it derived its support, the organ accomplishes in the act of parturition the last of that wonderful series of processes of which for forty weeks it has been the centre. But even before this period has arrived, indications of decay have manifested themselves in the changes that have taken place in the decidua; while no sooner is the child born than all the tissues of the womb evince the commencement of similar alterations, which go on with a rapidity such as is observed in no other organ and in no other circumstances. The muscular fibres undergo fatty degeneration, and to a great extent disappear; nerve-matter ceases to be apparent within the sheaths which had contained it, while even the fibres of elastic tissue interwoven with the muscular substance of the womb lose their distinctness, or become entirely absorbed. The old uterus has done its work and is removed; but in the midst of its decaying fibres the elements of a new organ are developed, and the microscopist tells us of a new generation of spindle-shaped cells which he can discover in its tissue, just like those which existed in the organ before pregnancy began, and which remain stationary at the same low stage

of formation, till in their turn excited by impregnation to go through higher phases of development.

In these changes the body of the uterus, and the lining of its cavity, bear a far greater part than either the substance of its cervix, or the mucous membrane which lines that canal. The mucous membrane of the body only is developed to the decidua, and it alone is thrown off after delivery; the lining membrane of the neck undergoes much slighter alterations, and is not deciduous. It is in the body of the uterus that its muscularity is most evident; firm fibro-cellular tissue predominates in the cervix, with which are interwoven here and there bundles of narrow, smooth, muscular fibres; and the stimulus of pregnancy which works such changes in the former situation, brings to pass far slighter alterations in the latter.

Though our knowledge is still but imperfect, we yet know something of the results which often succeed to accidents that interrupt the course of pregnancy, and originate the processes of degradation of the uterine tissue prematurely; or which follow on disease succeeding to delivery at the full period. Some of these results were pointed out to you in the last Lecture, when I was speaking of deficient involution of the uterus, and of the evils that may follow in its train; while I referred to other ailments of a somewhat similar character which may come on independent of pregnancy, as the consequence of some form of irritation or excitement of the womb.

In nearly fifty per cent. of the patients who applied at St. Bartholomew's Hospital for the cure of uterine ailments independent of organic disease, marriage, pregnancy, or delivery was assigned as the cause of the patient's symptoms; and it is, I think, fair to assume that in this large proportion of cases the disorder was local in its origin, and that the constitutional affection was but the secondary result of its intensity or persistence. Plausible, indeed, as the argument appears, that the performance of functions for the discharge of which any organ is expressly constituted cannot be likely to produce disease of that organ, you yet must not forget those peculiarities of the uterus which render it a probable exception to such a rule, while the fact is also not without its significance, that of 425 applicants for the relief of non-organic uterine ailments, 404 were married women or widows, and only 21 unmarried.[1]

But while I mention these facts in order to caution you against

[1] It is not possible, from the statistics of the out-patient department of a hospital, to deduce anything like a correct estimate of the comparative frequency of different diseases; and the sources of error are still more numerous in the case of any department of a hospital devoted to the cure of a special class of diseases; since the more serious of those affections are sure to present themselves at it in a very undue proportion. The statements in the text, then, are not intended to represent the absolute frequency of primary uterine disease, in comparison with cases in which the disorder of the womb is secondary to constitutional ailment, but merely to guard against the assumption that the uterine affection is, in almost all instances, secondary in point of time and subordinate in importance.

underrating the frequency or the importance of uterine ailments as primary disorders, it is far from my object to lead you to suppose either that these disorders have one invariable cause, or that they are the results of one constant pathological occurrence. This, however, or something very like it, has been maintained; it has been alleged that there is an invariable, or almost invariable cause of these symptoms,—that be the remote occasion of them what it may, *inflammation and ulceration of the neck of the womb* is their immediate cause,—that the key to the right understanding of uterine diseases is to be found in the correct appreciation of the importance of this condition; and the cardinal point in their treatment consists in the adoption of means for its cure.

The ulcerations to which such important results are attributed are for the most part mere superficial abrasions of the epithelium investing the lips of the os uteri, whose abraded surface is of a vivid red color, and finely granular. This granular appearance seems to be due to the papillæ that beset the surface of the uterine lips having become denuded of their epithelium; while the larger and more distinct granulations, which frequently bleed readily on being touched, are these same papillæ, not merely deprived of their epithelial investment, but actually hypertrophied.[1] In other cases in which the absence of epithelium is less complete, the surface seems beset by a number of minute, superficial, aphthous ulcerations, between which the tissue appears healthy, or slightly redder than natural. The ulcerations of the os uteri seldom or never present an excavated appearance with raised edges, as ulcers of other parts often do; but either their surface is smooth, or it projects a little beyond the level of the surrounding tissue. They are usually, but not constantly, of greater extent on the posterior than on the anterior lip, are sometimes confined to the former, but very rarely indeed limited to the latter. They appear to commence at the inner margin of the os uteri, whence they extend outwards; and sometimes, though by no means invariably, the short extent of the canal of the cervix uteri which can be brought into view by the speculum, appears denuded of its epithelium. The adjacent parts of the os uteri vary considerably in their appearance; sometimes their natural pale rose tint is preserved up to the edge of the abrasion, which is marked by a distinct well-defined line, while at other times the whole surface is of a much more vivid red than natural, and the line of demarcation between the abraded and the healthy surface is irregular and indistinct, the one encroaching on the other. The orifice of the uterus is generally more open than in a state of health, and the disappearance of the abrasion, which always takes place from the periphery towards the centre, is accompanied by the gradual closure of the previously patent orifice. The state of the tissue of the os and cervix varies; sometimes there is a very marked softness of the

[1] See the account of their microscopic structure in the elaborate work of Hennig, *op. cit.*, p. 64.

parts, the condition resembling that of the uterus soon after abortion or delivery, while at other times it is much harder than natural; but it certainly is not at all a common occurrence for extensive abrasion of the os uteri to coexist with a condition of the organ such as would seem healthy to the touch. The secretion from the surface varies considerably in different cases, and the chief part of the leucorrhœal discharge from which the patient suffers is derived from within the canal of the cervix, or from the cavity of the womb, not from the abrasion itself. Still, in some instances, those especially in which the ulceration presents a very marked granular character, the discharge derived from this source alone is far from inconsiderable. The degree of sensibility which the ulcerated surface possesses also varies greatly; now and then the slightest touch is extremely painful; but in the majority of cases, the ulcerated surface is not more sensitive than the adjacent parts, nor is the neck of the uterus whose os is abraded by any means constantly more tender to the touch than the same part of an organ entirely free from that affection.

Such, then, are the chief characters of the ulcerations, abrasions, and granulations of the os uteri, to which so high a pathological import is attached by some writers. It is alleged in explanation and in support of this opinion, that the mucous membrane of the cervix uteri, by reason of its vascularity and of the abundance of mucous follicles which are embedded between its duplicatures, is extremely liable to inflamation; and that this predisposition is still further increased by the abundant afflux of blood towards the neck of the womb, as well as by the position of that part of the organ and its consequent exposure to irritation and injury from various sources. This inflamation of the cervix is said to manifest itself by the secretion of an abundant albuminous matter from the cervical glands, and by the opening of the otherwise closed os uteri; as also, in by far the greater number of instances, by abrasion or ulceration of the os uteri, which usually occurs at a very early period. The cervix becomes swollen and congested, and it increases in size; but while in some instances it remains soft to the touch, even after years of disease, its substance becomes more frequently the seat of inflammation, lymph is effused into it, and it is not merely enlarged, but indurated—a change which takes place to a greater degree in those who have given birth to children than in the unmarried or sterile. The different extent of the ulceration is the only cause assigned for the presence of induration of the cervix in one case and its absence in another; but the relation of the two conditions does not seem to be by any means invariable. The degree to which the ulceration spreads appears also to be uncertain; in the great majority of cases it passes more or less deeply into the canal of the cervix, and sometimes occupies its whole extent, the internal os uteri, however, forming a barrier to its further progress, and preventing almost invariably its extension into the cavity of the womb. It is then inflammation, with its attendant ulceration of

the os and the cervix uteri, and usually with consecutive induration of its tissue, to which, according to these views, the sufferings of the patients are due; and all the varied disorders of the uterine functions—the pain, the leucorrhœa, the hemorrhages, the sterility, or the frequently occurring abortions—are attributed to the sympathies of contiguous parts with that small portion of the womb which is the seat of disease. Ulceration, too, when once it has occurred, is alleged to have scarcely any tendency to heal; while so long as it remains there may perhaps be a lull in the patient's sufferings, and some temporary mitigation of her symptoms; but there can be no real cure until the time when, the period of sexual vigor having expired, the organs which subserved it pass into a common state of atrophy; while cure, even then, is uncertain, and the consequences of disease outlast, by no means rarely, the uses of the part.

As uterine pathology is simplified beyond expectation by the discovery of an almost invariable cause of the most diverse symptoms, so uterine therapeutics also are made easy, according to the writers whose opinions I am relating, by one remedy being found almost always applicable for its cure, be the duration of the disease or its severity what it may. If the evil be slight, its removal will be speedy; if severe, a longer time will be required: but to modify the vitality of the part by caustics is the one unfailing indication; and, this accomplished, the ulceration and the inflammation and its results disappear together, and the sufferings of years are thus almost infallibly got rid of in a few weeks, or at latest in a few months. There are, indeed, some cases of slight mischief, which rest, antiphlogistic treatment, and vaginal injections, may cure; but these are rare. There are also some circumstances in which the local abstraction of blood may be of service; but what caustics to use, how often to repeat their application, how to prevent or to remove those inconveniences which sometimes result from their employment, are questions discussed as of chief importance; since to these remedies all other local measures as well as general treatment are but secondary and subservient.

Having now detailed these opinions, and pointed out the practical consequences which flow from them, I must occupy the remainder of this Lecture in the endeavor to set before you as briefly as possible the reasons which lead me to reject the opinions as erroneous, and to caution you against the practice which they are supposed to warrant.

Among the arguments by which these views have been supported, is one derived from the assumed greater vascularity and higher vitality of the cervix than of the body of the uterus, and its supposed consequent greater liability to become the seat of inflammatory mischief. But not only does a simple examination of the womb suffice to show that blood is distributed in greater abundance to the body than to the neck of the organ, but a consideration of the relative share of the body and of the neck of the womb in furnishing the menstrual discharge, or in the changes

which pregnancy and delivery bring with them, must lead, I think, inevitably to the opposite conclusion. Nor, indeed, with reference to these points, are we confined to inferential reasoning, but the advanced stage which cancerous disease of the neck of the womb not seldom reaches before either general illness or local suffering betrays its existence, leads to the same conclusion, while every-day observation has shown that the cervix uteri may be forcibly dilated, may be incised, its tissue may be burnt with the strongest caustics, or with the hot iron, or portions of it may be removed with the knife, with an impunity wholly incompatible, as I cannot but conceive, with the assumption that the part is one endowed with high vitality and delicate sensibility.

The results of post-mortem examinations have been appealed to by the opponents of these views in order to negative, by the rarity with which ulceration of the os uteri was observed, the idea of its important share in the production of uterine ailments. To my thinking, however, the very frequency with which this condition is discovered, furnishes a still more cogent reason for regarding it as of comparatively little moment. In seventeen out of sixty-five instances in which I examined after death the uteri of women who died of other than uterine affections, or in rather more than a fourth of the total number, abrasion or ulceration of the os uteri was present.[1] But though so often met with, this ulceration was usually very limited in extent, and so superficial as to be unassociated with changes in the basement membrane of the affected surface, and exercising so little influence on the state of the uterus in general as to be unconnected, in a large number of instances, with changes either in the interior of the womb, or in its substance; while induration of the uterine tissue and disease of the lining membrane of the womb were found independently of it or of each other.

As far as it goes, the evidence of anatomical investigation appears to me unexceptionable. It shows the absence of any necessary connection between ulceration of the os and those other changes of the uterine tissue which have been alleged to be dependent on it, and suggests the probability that an affection which was betokened by no marked symptom during life, and is found asso-

[1] *Table showing the Chief Results of the Examination of Sixty-five Uteri.*

Uterus healthy in		36
" diseased in		29
Ulceration of os uteri—		
" existed alone in	11	
" with diseased lining of uterus in	3	
" with induration of walls of uterus in	3	17
Induration of walls of uterus, without ulceration of os,		5
Disease of lining of uterus, without ulceration of os,		7
Total of diseased uteri,		29

For the exact particulars of most of these examinations, as well as for the details of the argument condensed in this lecture, I must refer to my Croonian Lectures, *On the Pathological Importance of Ulceration of the Os Uteri.* 8vo. London, 1854.

ciated with no important alteration after death, must itself be of no great moment.

An additional reason for suspecting that the importance of this condition has been overrated, is furnished by what we observe in cases of prolapse, or procidentia of the womb. From the unavoidable irritation to which it is exposed, the neighborhood of the os uteri becomes in these circumstances almost invariably ulcerated, and this ulceration is usually both extensive and inapt to heal. Now, though the relations of the procident womb differ materially from those of the organ while still in situ, though its sensibilities are unquestionably much blunted by its change of position, yet the general absence of any abundant discharge either from the cavity of the womb, or from the canal of its cervix, as well as of the other symptoms supposed to characterize inflammation of the neck of the womb, cannot but raise a presumption unfavorable to the opinion that ulceration of the os uteri is the all-important affection which it has been assumed to be by some writers.

If, however, we grant that between the procident uterus and the organ still in situ there are differences sufficient to prevent our applying rigorously to the one conclusions drawn from the other, there is yet another source whence evidence may be deduced to show that the os and cervix uteri are less susceptible to disease, and that disease has less disposition to increase and to assume a serious character than has been sometimes imagined. There is no class of persons in whom to such a degree as in prostitutes we meet with the conditions best calculated to inflict local injury on the neck of the uterus. It would therefore be reasonable to expect, if the susceptibility of the cervix uteri have not been greatly overrated, that in these women we should discover with remarkable frequency and intensity an ulcerated condition of the os uteri, an indurated and hypertrophied state of its cervix. Moreover, as an hypertrophied cervix uteri returns, even in favorable circumstances, extremely slowly to its original size, there would be many occasions in which the chronic effects of bygone inflammation must be evident in those who had devoted themselves for months or years to a vicious life.

Observations, however, seem to show that, be the causes of ulceration of the os uteri, of inflammation, hypertrophy, and induration of its cervix what they may, sexual excesses, at any rate, have no great share in their production. I found some years ago, on investigating this subject, that in twenty-seven out of forty women admitted into the venereal wards of the hospital, the os and cervix uteri were quite healthy. In ten more the only morbid condition was a mere excoriation not above a line in breadth, partially or completely circumscribing the os uteri, but associated with no other change of its tissue. In the remaining three the ulceration was more extensive, but in one only of these (and she a woman who had given birth to children) were the lips of the os uteri at all enlarged, while in no instance was there any such

alteration of the texture of the part as to deserve the name of induration.

The conclusion which we are warranted in drawing from the inquiry, as far as we have hitherto pursued it, would seem to be, that the condition of so-called ulceration or abrasion of the os uteri is far from infrequent, even in cases where no uterine symptoms were complained of during life; but that it is usually unassociated with other important affections of the uterus such as may be supposed to be the effect of inflammatory action: and further, that such affections do not seem to be readily excited by causes acting on the neck of the womb, either when displaced or when the organ is in its natural position.

We are bound, however, to go a step further, and to inquire whether, in the case of persons suffering from uterine ailments, there are such differences either in kind, degree, or duration of the symptoms, according as ulceration of the os uteri is either absent or present, as would enable us to connect with it certain definite consequences, or to say that it tends to certain definite results such as do not otherwise occur.

Considering that in the opinion of some writers,[1] so large a

[1] Dr. Henry Bennet, at page 36 of his *Treatise on Inflammation of the Uterus*, &c., 8vo., 3d edition, London, 1853, makes this statement. In accordance with this view, too, he observes at page 6, that "in nearly five cases out of six of uterine disease, in which chronic discharges, mucous, puriform, or sanguinolent, or other well-marked uterine symptoms, are present, there is inflammatory ulceration of the cervix." His theoretical opinions, however, seem to be undergoing modifications more considerable than he himself is fully aware of. In his Review of the Present State of Uterine Pathology, which appeared in the *Lancet* during the spring of 1856, and which was afterwards published as a separate work, he denies having "ever looked upon it as a disease *per se*, having a separate existence—a separate pathological entity;" apparently forgetting statements such as those which I have quoted, and also the no less significant fact that 226 out of the 359 pages of which the first part of his book is composed are occupied with the consideration of inflammation and ulceration of the neck of the womb; only 37 with the study of inflammation, acute or chronic, of the body of the organ. In this Review, too, affections of the body of the uterus are recognized, though only incidentally, in a manner suggestive of a frequency and importance much more considerable than would be inferred by readers of his larger work, while he altogether abandons the doctrine on which so much stress has been laid of the *special* importance of ulceration of the os uteri. I inferred it to be usually of little moment, because, whether it be present or absent, "a very great degree of resemblance exists between the two classes of cases: women of the same age, in similar circumstances, presenting the same symptoms, leading to the same results, having the same duration, and attended with similar structural changes, whether ulceration of the os uteri is present or absent." Dr. Bennet concludes, Review, p. 31, that the "two groups of patients were laboring in a great measure under the same disease, only manifesting its existence in one group by one mode of expression, in the other group by another mode of expression." The indiscriminate use of caustics will probably not very long outlast the recognition of the fact that ulceration of the os uteri is but one mode of expression of uterine disease; in other words, an accident—not an essential character. Dr. Bennet, indeed, considers this conclusion valueless; to my mind it is one of great practical moment, and one which appears to me to be already bearing fruit.

Having had occasion thus to refer to Dr. Bennet, I cannot let pass the opportunity of avowing my sense of the obligation under which he has laid the profession in this country, not only by the attention which he has drawn to the subject of uterine disease in general, but also by many of his own observations, and especially

proportion as 81 per cent. of all women presenting symptoms of uterine ailment are suffering from inflammatory disease of the tissue or canal of the cervix uteri, and 70.4 per cent. likewise from ulceration of the os uteri, this inquiry can scarcely be expected to be difficult to answer.[1] The evidence in support of the importance as well as of the frequency of these affections may fairly be expected to be overwhelming; and the symptoms of ulceration of the os uteri to be characteristic, either from their peculiarity or their severity, or from both together; and to differ in important respects from such as attend upon those uterine ailments which are unassociated with that condition.

There is not time in a course of Lectures on the Diseases of Women to carry you step by step through the whole of this inquiry, which some years since I made the theme of my Croonian Lectures. It must suffice then to say, that, dividing all cases in which the alleged symptoms of uterine ulceration were present into two classes, according as examination with the speculum discovered that condition or showed it to be absent, I endeavored to ascertain whether sterility is more frequent, whether the rate of fecundity is lower, and whether abortion occurs oftener in the one class of cases than in the other? Whether menstrual disorder is more common, more severe, or different in kind; whether leucorrhœa is more abundant, or furnished from a different source; or whether pain is less tolerable when the os uteri is ulcerated than when that condition is absent? And lastly, whether similar or different causes produce the uterine affection in the two classes of cases; whether the duration of illness is the same; whether the structural alterations of the womb are alike or diverse?

Each of these questions was made the subject of special inquiry, and the general results, from which more extended observation has not led me to differ, may be summed up as follows:

1st. Uterine pain, menstrual disorder, and leucorrhœal discharges—the symptoms ordinarily attributable to ulceration of the os uteri—are met with independently of that condition almost as often as in connection with it.

2d. These symptoms are observed in both classes of cases with a vastly preponderating frequency at the time of the greatest vigor of the sexual functions, and no cause has so great a share in their production as the different incidents connected with the active exercise of the reproductive powers. But it does not appear that ulceration of the os uteri exerts any special influence either in causing sterility or in inducing abortion.

3d. While the symptoms are identical in character in the two classes of cases, they seem to present a slightly increased degree

by his remarks on the subject of uterine displacements, and on the diagnosis of uterine cancer.

[1] Hennig, *op. cit.* p. 68, found the proportion to be 17 per cent., and in 9 only of the 17 did the morbid condition of the os coexist with leucorrhœal discharge from the cervix.

of intensity in those cases in which ulceration of the os uteri exists.

4th. In as far as could be ascertained by careful examination, four-fifths of the cases of either class presented appreciable changes in the condition of the uterus—such as misplacement, enlargement, and hardening of its tissue, while frequently several of these conditions coexisted. An indurated and hypertrophied state of the cervix uteri was, however, more frequent in connection with ulceration of the os uteri than independently of that condition.

5th. The inference, however, to which the last-mentioned fact would seem to lead, as to the existence of some necessary relation —such as that of cause and effect—between ulceration of the os uteri and induration of its cervix, is in great measure negatived by two circumstances.

1. That in numerous instances an indurated cervix coexisted with a healthy os uteri.

2. That while in many of the cases in which induration of the cervix existed, the ulceration of the os was very slight, induration was entirely absent in other instances where the ulceration was noticed as having been very extensive.

Since, then, we find that a very great degree of resemblance exists between the two classes of cases; that women of the same age, in similar circumstances, present the same symptoms, leading to the same results, having the same duration, and attended with similar structural changes, whether ulceration of the os uteri is present or absent; it may fairly be inferred, that ulceration of the womb is neither a general cause of uterine disease, nor a trustworthy index of its progress; and it follows, I think, as a necessary corollary that the endeavor by local remedies to remove this condition of the os is not the all-important object in the treatment of uterine disease which the teaching and the practice of some physicians would lead us to imagine.

But opinions, such as these which I have expressed, are met not infrequently by the statement, that recovery from various uterine ailments is daily seen to follow the employment of caustic and the application of various local remedies exclusively directed against ulceration of the os uteri. Now, though I may not fully acquiesce in this statement, it would be worse than idle to deny that, in many instances, the application of caustic to the os uteri has been succeeded by the restoration of the patient to health. The fact, however, admits of a solution, and one involving a principle which finds its application in the treatment of many diseases besides those which are peculiar to the female sex.

It should be borne in mind that in connection with this mode of treatment various other measures are of necessity adopted eminently calculated to relieve many of the slighter forms of uterine ailments. The married woman is for a time taken from her husband's bed; the severe exertion to which either a sense of duty urged or a love of pleasure prompted her, is discontinued; while rest in the recumbent posture places the uterus and the

pelvic viscera in just that position in which the return of blood from them encounters the smallest difficulties. The condition of the bowels, probably before habitually neglected, is now carefully regulated; and the patient's diet, bland, nutritious, and unstimulating, often differs widely from that with which, while all her functions were overtaxed, she vainly strove to tempt her failing appetite. Add to this, that the occurrence of the menstrual period is carefully watched for; that all precautions are then redoubled, and each symptom of disorder, such as on former occasions had been borne uncomplainingly, though often not without much suffering, is at once encountered by its appropriate remedy; while, generally, returning convalescence is met in the higher classes of society by a quiet visit to the country, or to some watering-place, in pursuit not of gayety but of health; and we have assembled just those conditions best fitted to remove three out of four of the disorders to which the sexual system of woman is subject. But the very simplicity of these measures is a bar to their adoption; for it is a matter of constant observation, that the rules which common sense cannot but approve, but which seem to require nothing more than common sense to suggest them, are just those to which our patients least readily submit. The case is altered, however, when the same rules are laid down, not as the means of cure themselves, but only as conditions indispensable to the success of that cauterization which, repeated once or oftener in the week, is the great remedy for the ulceration that the doctor has discovered, and which he assures his patient, and with the most perfect good faith, produces all the symptoms from which she suffers. The caustic used in these milder cases is the nitrate of silver; the surface to which it is applied is covered by a thin layer of albuminous secretion not easy to remove completely, and which serves greatly to diminish the powers of the agent, while the slightly stimulating action that it nevertheless exerts seldom does harm—sometimes, I believe, does real good, though no more than might have been equally attained by vaginal injections, or by other similar remedies, which the patient might have employed without the intervention of her medical attendant.

It would, however, be a matter of comparatively little moment whether the views which I believe to be erroneous were so or not, if their reception involved nothing more than an over-estimate of the value of certain therapeutical proceedings which may in reality be unessential to the patient's cure. But their evil, if they be erroneous, is of a far graver kind, and the manner in which they act injuriously on the patient is not hard to understand. No one engaged in the practice of medicine but must have been often struck with the important part which the sexual system plays, unconsciously to herself, in almost all the diseases of women. The frequent sadness and low spirits in celibacy, the grief, the almost shame, of childless marriage, depend on causes more deeply seated than reason can dispel, and are familiar to us as often stamping a peculiar character on the diseases of our patients. To the same

cause is due the nervous susceptibility which women often manifest on the least symptom of ailment affecting their uterine system; to control which, and to prevent the disposition to unconscious exaggeration of their symptoms, becomes often one of our most important, and at the same time one of our least easy duties. Any course of proceeding, then, which, without the most urgent and absolute necessity, directs the patient's attention in the slighter ailments painfully and frequently to her uterine system, is in the highest degree objectionable. The patient recovers from her illness, but with the impression that all the sensations that for weeks, or months before, she had experienced were exclusively due to the local disease which had called for local remedies. On the first return of any symptoms resembling them, all her apprehensions are revived lest the same painful investigation, the same distressing manipulations as before, should be again required. The fact that it needs but to watch the beatings of one's heart for a few minutes, in order notably to quicken its pulsations, and to become painfully conscious of its action, is one of the most familiar illustrations of that influence of attention upon the functions of the body, of which, both in health and in disease, we see so many instances. Digestion watched through its different stages with the not unnatural anxiety of a dyspeptic invalid, often leaves him a hypochondriac, unable to take other than certain articles of diet, and those cooked in some peculiar fashion; while in many instances, neither in the food itself nor in its mode of preparation is there any reason to be found why that alone should be tolerated by his fastidious stomach. More or less discomfort—often, indeed, much positive pain—attends in the great majority of women upon the performance of the menstrual function, precedes or follows it. These pains are now thought to be of more importance than before; their occurrence is watched for, the suffering of one month is weighed against that of the month before, as the woman thinks she finds in its increase or its diminution grounds for hope or for apprehension. But the sensations thus attended to increase in intensity and in persistence; the slight ailment, which but for the coming evil that it is supposed to portend, would in a few days be forgotten, is noted with anxious vigilance; and the more it is observed, the more it seems to grow; the patient fears she never will be well again, and at length makes up her mind once more to go through the same treatment as before relieved her, though it brought to her the painful revelation of the grave cause on which her sufferings, once thought so little of, in reality depended. Such persons among the poor come to our hospitals, and on questioning them as to their ailments, they at once, and without waiting to describe their symptoms, say that they are suffering from ulceration of the womb; though on examination one finds no traces of it, or at most a little redness of the edges of the os uteri; or it may be even that slight abrasion which I trust that I have shown to be as trivial in importance as it is frequent in occurrence. But though they have no serious disease, they are not the less, or perhaps one might say all the more, real

sufferers, and sufferers most difficult to cure. The treatment they perhaps are once more subjected to serves but to confirm the morbid habit of mind which has been gradually increasing upon them, and destroying both their present happiness and their capacity for it in future years.

But though it is my conviction that, in the great majority of instances in which the nitrate of silver is applied to the os uteri, the proceeding is simply superfluous, it yet would not be right to leave unnoticed other cases in which, the neck of the womb being more or less enlarged, stronger agents are employed. On these occasions the caustic potash is generally used, and by some with the view of destroying outright a certain portion of the enlarged cervix; by others, with the intention of getting rid of the enlargement by means of the inflammation which it sets up in the uterine tissue. With whichever object resorted to, the proceeding is confessedly devoid neither of suffering nor of danger. If the caustic be introduced, as is usually done, within the cervical canal, it is allowed that the pain produced, and which sometimes lasts for two or three days, is very intense, causing nausea or sickness, and sometimes even syncope, or occasioning extreme depression, prostrating a patient so completely as to render her unable to quit her bed or sofa for several days. Thus much for the present effect of this remedy, for which its strongest advocates can scarcely lay claim to such an epithet as *jucunde*. But it does not fare better with it as far as *cito* is concerned. The application of the potassa fusa so as to produce an eschar, implies a subsequent course of treatment with frequent applications of the nitrate of silver for a period of about forty days, at the end of which time, the action of the remedy being supposed to be exhausted, unless the patient is cured, it will be necessary to repeat the same treatment again and again. This treatment, too, it will be observed, confines the patient during the whole time that it is in progress to her room, and almost to her couch, and entails upon her the necessity of one or two examinations with the speculum every week during its continuance. But if it can be said to act neither *cito* nor *jucunde*, it might be hoped that this mode of proceeding had at least the third merit of *tuto;* but it has not. The tendency to contraction or obliteration of the cervical canal after these proceedings is very considerable, and is referred to as even a frequent occurrence; while inflammation both of the uterus generally, and of its appendages, is a contingency far from uncommon. Of the last of these accidents I have seen several instances among patients at the hospital, who, previous to their coming under my care, had been treated with the stronger caustics for ulceration of the os uteri.

I will not attempt to follow the advocates of this practice through the explanation which they give of its mode of action; and the rather, since where some see a healthy stimulus to the affected tissues, others discern what they consider to be a dulling, stupefying influence, as they term it, weakening the vital force; while throughout the language used with reference to this subject there

is a mingling of metaphor with scientific terminology, from which it is extremely difficult to arrive at a clear notion of what is meant. I do not doubt but that by either mode of applying the caustic potass, the cervix uteri may be reduced in size; but my dissent from the practice is founded on the fact that it has none of the three recommendations of painlessless, speed, or safety; while my own experience would lead me to believe that when adopted it is usually either out of place or superfluous. During the presence of any active symptoms of inflammation, such a proceeding as the destruction of a portion of the uterine tissue by caustics cannot but be perilous; after their removal the womb will return slowly, often indeed but imperfectly, to its previous size. This return, however, does take place, as far at least as my experience goes, in the immense majority of cases, and takes place as surely, and not much, if at all, more slowly, under just those conditions which best promote the general health, as under a course of treatment which, apart from other evils, confines a woman for weeks and months to her chamber and her couch, to the grievous impairment of her general health, and the utter ruin of her cheerfulness, as on several occasions I have had the opportunity of observing. Moreover, very wide variations in the size of the womb seem to be equally compatible with the healthy performance of its functions, while the special tendency which it exhibits in any circumstances that produce congestion of its vessels to increase in size must never be forgotten in estimating the pathological importance of hypertrophy, either of the whole or a part of the organ. In this opinion, too, I am further strengthened by the fact that some of the most marked instances of enlargement of the neck of the womb, with increased hardness of its tissues, which have come under my observation, occurred in cases where there was no trace of ulceration either of the os uteri or of the canal of its cervix.

But I must stop here, and reserve for the next lecture the endeavor to show what opinions seem to me better substantiated, and what practice more judicious, than those which I have hitherto been engaged in criticizing.

LECTURE VIII.

INFLAMMATORY AFFECTIONS OF THE UTERUS.

Chronic Inflammation and its Results, continued. Evidence of general dependence of symptoms on affection of body of uterus, and independence of ulceration of os—illustrative cases. Objections answered.

Hypothesis of primary affection of cervical canal considered; and reasons assigned for dissenting from it.

Treatment of these cases; depletion, sedatives, use of mercurials, use and selection of tonics. Vaginal injections. Exceptional cases requiring local treatment of ulceration.

Cases of cervical leucorrhœa; their nature and treatment.

The last Lecture was occupied almost entirely with the endeavor to point out the fallacy of a certain hypothesis which professed to

explain the occurrence of menstrual irregularities, leucorrhœal discharges, and uterine pain, by referring them to a single cause, and regarding them as the invariable, or almost invariable, consequences of inflammation of the cervix and ulceration of the os uteri.

It remains for us now, however, to inquire to what other cause or causes these symptoms may be attributed, and to ascertain, if possible, in what circumstances the local affection of the os uteri is to be regarded as occasioning special aggravation of the patient's symptoms, and as calling for special local treatment.

In the course of former lectures many remarks have been already anticipated, which might otherwise find here a most appropriate place. It can, indeed, scarcely be necessary to repeat what I have already said with reference to the connection of menstrual irregularity and leucorrhœal discharges with hepatic disorder, or with the gouty or rheumatic diathesis. Such conditions are of themselves amply sufficient to account for symptoms which the patient may refer to the womb; and so long as they are unremoved, it is idle, or worse than idle, to attempt a cure by local treatment.

But there is, besides, a large category of cases in which the symptoms date back to pregnancy, delivery, or miscarriage, and in which the enlargement of the uterus, as well as the history of the patient, point to a purely local cause of the ailment. In these cases, however, it is the body of the womb which is the part most affected, since as it bears the greatest part in all the changes that pregnancy brings with it, so any defect in the involution of the organ will leave its body more enlarged, the lining of its cavity more vascular, than are the walls or the lining of the cervical canal. Often, indeed, but by no means always, enlargement of the neck of the womb accompanies enlargement of its body, but the former is not the occasion of the latter,—is, I believe, secondary in the order of time, and subordinate in point of importance.[1]

In 40 per cent. of all the cases that came under my observation, the patient's history went back to one or other of these last-named exciting causes; for, indeed, it is not possible to conceive of a state of things more favorable than they to the supervention

[1] While these sheets were passing through the press, Scanzoni's elaborate treatise on chronic inflammation of the womb (*Die chronische Metritis*, 8vo., Wien, 1863), came into my hands, though too late for me to make that use of it which I should have otherwise wished to do. I may, however, be excused for expressing my satisfaction at finding the opinions which, more than ten years since, I put forth in my Croonian Lectures, so fully borne out by the large experience of the German professor.

"Any unprejudiced observer," says he, "must come to the conclusion that the importance of the so-called inflammatory affections of the neck of the womb has been too much over-estimated in the course of the last twenty years; that many a discomfort, many a symptom of disease, has been attributed to these conditions, without the slightest proof of any real connection subsisting between them."

"We, for our part, are firmly convinced that the pathological changes of the upper portion of the uterus are of much greater moment, both locally as well as with reference to the disorder which they produce in distant organs, than the recently so highly estimated swellings, hypertrophies, granulations, and ulcerations of the cervix," p. 53.

of inflammation and of kindred processes. And if it does come on, we find its attack announced by pain of a severer kind, and of a more distinctly paroxysmal character than was before experienced, sometimes, indeed, excruciating in severity; while even in its absence there is extreme tenderness of the uterus, with great heat of the vagina, and usually a very abundant purulent leucorrhœa; often, though by no means invariably tinged with blood. Moreover, these local symptoms are associated with more or less considerable constitutional disturbance, while on their subsidence the uterine tissue, as far as its state can be ascertained, is felt to be harder in texture than before; and lastly, these symptoms, when once they have occurred, are apt to return at uncertain intervals during a period of many years, presenting on each occasion the same character, amenable to the same treatment, but in spite of it retaining the same disposition to recur over and over again.

In September, 1851, a married woman, aged forty-one, was admitted into St. Bartholomew's Hospital, and told the following history of her ailments: Having married at sixteen, at which time the menstrual discharge was scanty, and irregular in its return, she at once became pregnant, but miscarried at the third month. A second pregnancy terminated at the full period, after a lingering labor of two days and a half duration, in the eighteenth year of her age; and a third pregnancy soon afterwards likewise terminated prematurely at the fourth month. Her symptoms dated from the time of her lingering labor, and consisted of leucorrhœal discharge, sometimes very copious, occasionally also very offensive; constant sense of discomfort in the uterine region, with occasional sharp stabbing pains, chiefly referred to the right groin, and always aggravated at a menstrual period; while the menstrual discharge, which for years had been gradually increasing in quantity, and was now extremely profuse, was always succeeded by temporary relief to the patient's sufferings. The pain and the hemorrhage together had worn down her health; her countenance was anxious, and her pulse 128, and feeble. The uterus was found to be rather low down, but not much enlarged, though very tender; the cervix uteri was indurated, somewhat elongated, and very painful; and the os uteri, which was small and circular, presented no trace of abrasion, either affecting its lips, or extending into the canal of the cervix, though the congestion of that part was very marked. Rest, frequent local leeching, and sedatives, relieved the patient's sufferings, improved diet restored her strength, and when she left the hospital in November, she had lost the sense of pain and bearing down; there was but little leucorrhœa, the tenderness of the uterus was much diminished, and the congestion of its orifice had entirely disappeared. It may be added that once during the course of her treatment, superficial abrasion of the os uteri showed itself, but disappeared of its own accord in a few days. Great as the relief was which this poor woman had obtained, I did not anticipate that she would continue free from suffering if she

returned home to bear a part in the duties and to submit to the hardships which are inseparable from poverty.

Accordingly, in less than twelve months she returned to the hospital, presenting the same symptoms as before, and submitted to a similar plan of treatment with the like result. The os uteri on this occasion also presented no abrasion, though frequent examinations were made with the speculum to ascertain this fact. The patient remained this time somewhat longer than before in the hospital, and took small doses of the bichloride of mercury for several weeks, though never in such quantities as to affect the mouth. For six months after her discharge, she continued almost free from suffering; but in September, 1853, her symptoms began to return: menstruation, though not so profuse as before, became once more very painful; and for some days before her admission into the hospital, on October 20, she had paroxysms of such intense severity that she rolled about the bed in uncontrollable agony, which large doses of sedatives were unable to subdue. On her admission there was the same intense congestion of the os uteri as on former occasions, with a very abundant, highly offensive, purulent discharge, slightly tinged with blood from its interior; the womb itself being low down, somewhat larger than natural, and the cervix large, hard, swollen, and intensely tender; but no trace of abrasion of the os was perceptible. The application of six leeches to the uterus was followed by bleeding so profuse as to cause syncope; but for several days subsequently the patient continued perfectly free from pain, and though it afterwards returned, yet it never again attained the same degree of intensity. She remained in the hospital for six weeks, during which time local leeching was occasionally resorted to; small doses of the bichloride of mercury were again given, together with the syrup of the iodide of iron; and under this treatment improvement once more took place, and the neck of the womb, at the time of the patient's discharge, was at least a third smaller than it had been at her admission.

This case I have related, both for the illustration it affords of the treatment by which these symptoms should be encountered, as well as because it displays the symptoms in their severest form, and recurring with that pertinacity which is one of the most painful characteristics of this class of ailments. I apprehend that one does not err in connecting the commencement of this patient's illness with some inflammatory affection of the mucous membrane of her uterus, which supervened upon her delivery, and which, during the many subsequent years, was every now and then lighted up afresh by causes such as in the household of the poor are not far to seek. It would not be difficult to multiply cases of this description; but in further exemplification of the subject, I will just refer to one other of a kindred nature. In some few, happily very few cases, the inflammation, which in gonorrhœa is usually limited to the vagina, not only attacks the mucous membrane of the bladder, but affects the lining of the uterus also, and even extends to the peritoneum, sometimes endangering the patient's

life. But without causing these most formidable results, acute inflammation of the vagina sometimes extends beyond its original seat, and gives rise to symptoms such as we are now considering. A patient, aged thirty-five, was admitted into St. Bartholomew's Hospital, complaining of dysuria and frequent micturition, of painful and profuse menstruation, and of leucorrhœal discharge,—symptoms which she referred to a somewhat severe attack of gonorrhœa three months before. Her uterus was found much enlarged, anteverted, and fixed in its unnatural position, while its tissue generally was much harder than natural, and the margins of the os uteri, though free from the slightest trace of abrasion, presented very marked congestion, and discharge was poured out from the interior abundantly. It is here, I think, no unfair assumption to suppose that all these symptoms, from which the patient had never suffered previous to the gonorrhœa, were excited by it,—and that had affected the interior of the uterus, and had also bound down the organ in its unnatural position by adhesions consequent on peritoneal inflammation.

It is well to bear in mind, with reference to cases of this and of a similar kind, that the assumption of inflammation affecting the body of the womb is not sufficiently negatived by the absence, in the patient's history, of any mention of symptoms so grave as we might be inclined to imagine that inflammation of the more important parts of this viscus must of necessity produce. In making examinations after death, we constantly find adhesions between the uterus and the rectum, or matting together of the parts within the fold of one or other broad ligament, although the patient during her lifetime may never have mentioned any attack of uterine or abdominal inflammation. Not infrequently, too, we find the uterus firmly fixed in the pelvis, with most obvious thickening of the broad ligament, or of the pelvic cellular tissue; while yet the closest inquiry will fail to elicit anything more definite than the statement, that a bad confinement or a bad miscarriage some time before was succeeded by a painful and tedious convalescence.

Other cases might be mentioned which, I believe, admit of the same interpretation,—cases where the symptoms have succeeded to marriage, or where they have followed suppressed menstruation; nor would I propose a different explanation of those instances in which uterine misplacements, as anteflexion or retroflexion, are succeeded by signs of sexual disorder such as we have been considering, or where they have been associated with misplacement of the ovary. In all of these cases it is, I believe, the interior of the uterine cavity which suffers first; it is thence that the hemorrhages are derived, thence that the greater part of the leucorrhœal discharge is furnished; and it is the irritation of that part of the organ in which its most important functions are transacted, that leads to the increase of its size so apparent in the great proportion of cases of long-continued uterine ailment. That the ovaries suffer too, constant observation proves; and facts illustrative of the affection of the neck of the womb are also perpetually coming under

our notice; but there does not seem to me to be any proof that, as a general rule, the point of departure of the mischief is in the neck of the womb any more than at its orifice, or in its appendages.

There are, indeed, some writers, who, while they concede the comparatively small importance of ulceration of the os uteri, yet appear to me scarcely to attach due weight to the ailments of the uterine cavity. The elaborate secretory apparatus of the cervix uteri, so minutely described and so beautifully delineated by Dr. Tyler Smith and Dr. Hassall,[1] seems, indeed, to furnish an ample source for almost any conceivable amount of discharge. But it must be remembered, that like many other secreting apparatuses, this is by no means in constant activity. Its full action seems to be called forth only during pregnancy, and my own observation does not by any means confirm the statement, that in the intervals between the menstrual periods a mucous plug is secreted, hermetically closing, as it were, the canal of the cervix, for I have observed any such secretion to be as often absent as present in uteri which I have examined. I may further add, that Dr. Hennig,[2] who has devoted so much labor to the subject which we are now considering, expressly states pregnancy to be the only physiological condition in which this mucous plug is formed.

These alleged facts concerning the functions of the cervical glands have, however, been made the groundwork of a theory according to which a sort of antithetical action exists between the cavity and the neck of the womb; the former periodically pouring out the menstrual discharge, the latter periodically forming a secretion by which its canal is closed, until with each menstruation the plug is removed. Hypothetical uses, too, connected with the generative process, are assigned to this secretion, against the validity of which its frequent absence is one of the most cogent arguments. In conformity, too, with this assumption of the physiological condition of these parts, it is alleged that leucorrhœa is in general merely a hypersecretion from the glandular apparatus of the cervix uteri, and most of the ills which in this and the preceding lecture have engaged our notice, are regarded as merely the secondary results either of the local irritation produced by the discharge on adjacent parts, or else of constitutional disorder excited by purulent absorption owing to the constant presence of the morbid secretion in the vagina.

There is something so attractive in ingenious speculations, that we cannot be surprised if sometimes they are propounded a little

[1] In vol. xxxv. of the *Medico-Chirurgical Transactions;* and afterwards by Dr. Tyler Smith, in his work on *Leucorrhœa*, 8vo., London, 1855. M. Huguier was, to the best of my belief, the person who in his Lectures at the *Hôpital de l'Ourcine*, published in the *Gazette des Hôpitaux*, for 1847, clearly enunciated the opinion that the main source of leucorrhœa was to be sought in affection of the glandular apparatus of the cervix uteri, and supported this view by very cogent argument, though, for the reasons assigned in the text, I have ventured to dissent from the conclusion at which both he and other subsequent writers have arrived.

[2] *Op. cit.*, p. 18.

hastily; and this is all the more likely to be the case if the point on which they rest is one which it is almost impossible to determine with certainty by actual observation. I do not for a moment doubt the frequent, perhaps even the constant admixture of secretion from the glands of the cervix with that from the cavity of the womb in ordinary leucorrhœa; I believe that in some cases which will be hereafter noticed, such secretion makes up by far the greater amount of the discharge. There are some considerations, however, which, in the absence of any means of positively determining during the lifetime of our patients whether a discharge poured out from the os uteri is furnished from the cervical canal, or from higher up in the body of the uterus, or from both, should make us hesitate to assign so little importance to affections of the uterine cavity in the production of leucorrhœa and kindred disorders. Some of the most cogent of these have been already so fully detailed, that it seems almost superfluous to refer once again to the changes that succeed delivery, in which the mucous membrane of the cavity of the womb bears so much greater a part than that of the cervix, and continues to pour out a muco-purulent secretion long after all sanguineous flow has ceased. The history of an ordinary menstrual period affords another illustration of the same fact. The mixture of mucus and epithelium, which at its commencement and end constitutes the greater part of the menstrual flux, is not only assumed to be furnished from the congested mucous membrane of the body of the uterus, but on examination after death may be seen not only in its cavity, but even distending the whole length of the Fallopian tubes.[1] Whence, too, but from such a source could it flow, as it sometimes does in the healthy subject for twelve or twenty-four hours after the cessation of all admixture of blood, since the secretion formed in the cervical canal must be removed at the commencement of each menstruation, and the periodical functions of the two parts of the womb are assumed to be performed at different times? Nor must it be forgotten, that the mucous membrane of the uterine cavity is provided with appropriate glands, to furnish such secretion, almost infinite in number, curiously convoluted to increase the extent of their surface, and susceptible of a peculiar hypertrophy more remarkable than any which is observed to take place in the glands of the cervix. Observation also not infrequently discovers the membrane of the uterine cavity abundantly moistened with secretion, while now and then accident and disease bear testimony to the same fact, as in the case of the inverted uterus, of which one of the most constant symptoms, next to the profuse hemorrhage, is the abundant leucorrhœa; or of the inflamed lining membrane of the womb when some accident preventing the escape of the secretion, the

[1] It seems indeed doubtful whether affection of the Fallopian tubes does not play a far more important part than we have been accustomed to suppose, in the production of many of the ailments of the female sexual system. See Hennig's remarks on the preponderance of catarrh of the tubes, over similar affections of the body or neck of the womb, or of the vagina.—*Op. cit.*, p. 28.

cavity of the organ has been found distended by an accumulation of pus.[1]

Rejecting, then, the supposition that the symptoms we have been considering are in general due either to ulceration of the os uteri, or to some affection of the glands of its cervix, we come now to inquire into their most appropriate *treatment*. This, as you will readily understand, differs widely, according as the symptoms have anything of an active character, or, on the other hand, are purely chronic, though in both cases the indications to be met are but few, and the means to be employed abundantly simple. So long as acute symptoms are present, or whenever they reappear in the chronic stage of the disorder, local leeching generally affords more speedy and more decided relief than any other remedial means. The leeches should be applied to the uterus itself; not above four in number at a time; nor is it in general expedient to repeat their application above once in a week or ten days. Another precaution to which your attention has already been called, consists in never leeching the womb within four or five days of a menstrual period, lest the regularity of that function be disturbed, either by being brought on prematurely, or (which, however, is much less frequent) by its occurrence being postponed for several days. The pain which is left behind after menstruation in some of these cases —in those especially in which the discharge is scanty—is often very greatly relieved by the application of a few leeches as the period passes off. Next to the abstraction of blood, the mitigation of suffering by direct sedatives claims our attention. After what has been said in former Lectures on this subject, I will now merely remind you that when sedatives may be long needed, the milder the preparation, and the smaller the dose, the less will be the risk of injury to the health from their continuance. The backache is often relieved by counter-irritation to the sacrum, which is usually more efficient than plasters of opium, or belladonna; while its good effects, also, are in general less transitory. As suitable a preparation for this purpose as any is a croton-oil liniment, composed of one part of croton oil to ten of the simple camphor-liniment, which should not be rubbed into the sacrum, but merely applied with a sponge twice a day; and while thus employed will somewhat irritate the skin, but without producing any troublesome pustular eruption.

[1] There are many such cases on record. In one, the particulars of which are detailed at p. 79 of my Croonian Lectures, and referred to at p. 91 of Lecture VI, a mere flexure of the neck of the womb had prevented the escape of fluids from its cavity, and it was distended by the accumulation of pus within it to the size of a hen's egg. The history of cases of inversion of the womb, as detailed, for instance, in Cross's monograph on that subject, represents profuse leucorrhœa as one of its never-failing symptoms, sometimes indeed, though by no means always, succeeded by a serous discharge, almost continuous in its flow, which takes the place at length, almost or altogether, of the previous hemorrhages. The profuse loss of blood which accompanies in many instances the small mucous polypi of the cervix, is, on the other hand, ample evidence that hemorrhage may follow irritation of the neck of the womb, as well as mucous discharge, irritation of its body or fundus.

The same means as relieve the uterine pain, seldom fail to diminish the irritability of the bladder by which it is often attended, and which, after the first more acute symptoms have passed away, is very generally associated with abundant phosphatic deposits in the urine. Small doses of hydrochloric acid, with tincture of henbane and the extract and decoction of pareira, are the most serviceable. So long as there is much pain or much uterine tenderness, no local applications nor vaginal injections will be of service, except such as are simply soothing, as tepid water; and for the same purpose the tepid hip-bath may be found of benefit. While these measures are employed, absolute rest for a time is needed, though it must never be forgotten, in the treatment of uterine ailments, that there are certain positive evils to which prolonged rest exposes a patient, both by the general interruption of her health, and also by the almost inevitable direction of her thoughts, during the days of seclusion from her ordinary pursuits and ordinary amusements, to the seat of suffering. At the same time much prudence is necessary in breaking through restrictions; and even for months after the patient is convalescent, the approach of a menstrual period, the presence of menstruation, and the first few days after its cessation, are seasons when every precaution must be most strictly observed.

If promptly met, the symptoms sometimes pass away gradually, but uninterruptedly; though the tendency to relapse which each menstrual period brings with it, or which some very slight imprudence suffices to occasion, is one of the most disappointing features of these cases. After several such misadventures, we find the uterus not only enlarged and less movable than natural, but its tissue generally feels harder, and the cervix in particular presents this character. Leeches will still do something in many instances towards removing this condition; though it is in general inexpedient to apply more than two at a time, and the result of their employment must settle the question as to the frequency of their repetition. In these cases the bichloride of mercury steadily employed for many weeks has seemed to me preferable to any other remedy, exercising a decided influence in reducing the enlargement and diminishing the induration of the organ, while it neither irritates the bowels nor affects the mouth, as other mercurial preparations, nor disorders the digestion, nor produces sleeplessness, both of which evils are incidental to the employment of iodide of potassium. I prefer giving it in the form of pill, with a few grains of extract of hemlock, and if this be taken in the course of dinner or luncheon, all risk of irritating the digestive organs is avoided, a matter of no slight importance, where, as in these cases, the appetite is fickle. Some kind of tonic is often needed, and few are so little likely to disagree as the liquor cinchonæ. If the bowels become constipated, or the liver gets out of order, accidents very apt to happen, suspension of the tonic for a day or two, and an aperient with two or three grains of blue pill, or a pill containing

a grain and a half of gray powder, of watery extract of aloes, and of extract of henbane, will usually remove the symptoms.

Pain in either iliac region is a very frequent attendant on this condition. A small blister will generally effectually relieve it; or if the pain be scarcely so severe as to necessitate the employment of a remedy from which patients usually shrink, a liniment of belladonna, aconite, and soap liniment, may be employed instead.[1]

Long after other symptoms have passed away, or have at least been very greatly mitigated, there remains a disposition to excessive menstruation, and also to profuse leucorrhœal discharges, due, I believe, to the persistence of congestion, not of the uterine substance only, but of the lining membrane of the womb in particular. This is a state of things for which chalybeate preparations are generally the best remedy, and I know none better than the compound sulphate of iron, sulphate of magnesia, and sulphuric acid, which I mentioned some time ago.[2] Another remedy which I have tried with advantage on Dr. Tyler Smith's recommendation, as specially adapted to cases where menorrhagia is a prominent symptom, is a compound of alum with sulphate of iron. He speaks of a compound salt[3] which he has employed for his hospital patients; but even in the rough form of extempore prescription, it has seemed to me very useful.

But, besides internal medicines, various external remedies, such as hip-baths and vaginal injections, may be employed with advantage in the more chronic stages of this affection. It is true that we who now believe the main source of the discharge in these cases to be not the vagina, but the uterus, cannot anticipate so much good from their use as was reckoned on by our predecessors, who imagined that the fluid injected into the vagina came into direct contact with the secreting surface whence the leucorrhœal discharge was furnished. Still, mere purposes of cleanliness furnish one very obvious reason why injections should be employed in every case of abundant leucorrhœa; while in addition it may be borne in mind, that almost always, when the ailment is of long standing, a part of the discharge is poured out from the vaginal walls, and some also from the follicles of the cervix, on both of which it may be expected that the medicated fluid will act more or less energetically. The injection also will serve to give tone to the relaxed vagina, and thus to counteract the disposition to prolapsus, which is an almost constant sequela of uterine inflammation, while if fluid be used abundantly, or its injection continued for several

[1] (No. 10.)

℞ Extr. Belladonnæ, ... ℥ss
Tinct. Aconiti (Fleming's), . . . ℥iv
Lin. Saponis, co., ... ℥jss—M. ft. Linimentum.

For this very useful formula I am indebted to a paper of Dr. Oldham's, "On the Use of Bichloride of Mercury in Hypertrophy of the Uterus," *Guy's Hospital Reports*, 2d Series, vol. vi, pt. i, p. 161.

[2] See Formula No. 1, p. 46.

[3] *The Pathology and Treatment of Leucorrhœa*, 8vo., 1855, p. 193.

minutes at a time, it is also not without decided influence on the body and cavity of the womb themselves.

For any such ends to be gained, however, it is essential that injections be employed much more efficiently than can be done by means of the ordinary syringes, or of the India-rubber bottles which are commonly used. Dr. Evory Kennedy's ingenious syringe, or even the cylindrical pump syringe, which is a more convenient application of his original idea, both require a degree of strength of hand which few women possess; but a recent modification of the ordinary syringe, which I have seen at Mr. Ferguson's, instrument-maker, of Giltspur Street, furnished with a foot, that keeps it steady without the use of both hands, appears to me to obviate every difficulty that was experienced in the use of the other instruments. Still more efficacious, however, is the douche, which indeed I am accustomed to employ very generally in hospital practice, in all cases where the uterine cavity appears to be the source of the discharge. The only drawback from its use is, that there is a kind of fuss in getting it ready, which induces me in private practice usually to substitute for it the hip-bath. By dissolving a quarter of a pound of alum in the water of the bath, a very good astringent is obtained. If the patient is apprehensive of taking cold, the bath may at first be warmed to about 70°; and by degrees its temperature may be reduced till it is taken quite cold. The morning is the most convenient time for using it, and the patient should remain in at least ten minutes, in order to derive any important benefit.

With reference to vaginal injections, the point of most importance in their composition is, that they should be inexpensive and readily prepared by the patient herself. The dilute lead lotion, which can be readily made from the Goulard extract, lotions of zinc, or of alum, all have their advantages; while two drachms of tannin, and half an ounce of alum dissolved in a quart of water, form as powerful an astringent as the decoction of oak-bark and alum lotion, which requires much time for its preparation.[1]

Though in the great majority of instances these measures suffice for the gradual recovery of the patient, yet to this rule there are occasional exceptions, and local applications are sometimes necessary to bring about the healing of an ulcerated or abraded condition of the os uteri, which may have persisted, unaffected or but little modified, by the general treatment.

The vivid red appearance of the os uteri, associated with more

[1] A peculiar form of uterine leucorrhœa, limited in its occurrence to the aged, and associated with dilatation of the cavity and atrophy of the walls of the uterus, has been described by Dr. Matthews Duncan, in the *Edinburgh Medical Journal*, March, 1860. Its characteristic symptoms appear to be peculiar lumbar and pelvic pain, accompanied by a sense of constriction, and the discharge of muco-pus. Its cure seems to require the dilatation of the contracted internal os by the sound, and the application of nitrate of silver to the interior of the womb. I believe that I have met with this condition on one or two occasions, but the patients having their minds relieved with reference to the existence of uterine cancer, preferred putting up with the discomfort to submitting to treatment for its cure.

or less extensive abrasion of its surface, and a slightly granular appearance, which is not infrequently met with during the more active stages of these affections, for the most part alters its character, loses its vivid color, and finally disappears under the local depletion which the state of the uterus generally calls for. Sometimes, however, it continues, its granulations become large, soft, very vascular, and bleed easily, while the surface furnishes a very considerable quantity of glairy discharge. In this case the os and cervix uteri are usually tender, sexual intercourse is painful, and is often followed by a little bleeding. This condition, like that swollen and granular state of the palpebral conjunctiva with which we are familiar in the purulent ophthalmia of young children, is generally much benefited by extensive scarifications, which may be followed by the daily application of powdered alum on a piece of cotton-wool, or by the introduction of a piece of cotton-wool soaked in a strong solution of alum. By means of a piece of thread tied to the cotton-wool it can be removed by the patient herself in the course of a few hours, though it must always be introduced through the speculum. In the greater number of instances, the state of the os uteri becomes so much improved in four or five days that this mode of treatment may be then dispensed with, and the sedulous employment of strong astringent injections will usually suffice to complete the patient's cure. When this is not the case, but the morbid condition still continues, more powerful applications may be needed. The nitrate of silver is not in general suitable in these cases, for its application is often followed by pain and also by bleeding. The acid nitrate of mercury, both in this instance, and also whenever a strong caustic is required, has seemed to me the most useful application; and with moderate care its employment is unattended by risk. When it is used, however, the patient must lie on her back, and one of Coxeter's bivalve speculums being introduced so as thoroughly to expose the os and include the cervix, a little cotton-wool must be carefully disposed all round the edge of the speculum, so as to absorb any of the superfluous acid, and to prevent it from running down outside the speculum, and thus injuring the vagina. A brush can easily be extemporized by trimming a little piece of cotton-wool after it is placed in the holder, and the whole diseased surface may then be painted over with the caustic, which immediately forms upon it a white eschar. A piece of dry cotton-wool now pressed against the part will absorb any superfluous caustic: the little strips placed around the edge of the speculum may then be removed and the speculum withdrawn. An additional precaution, however, which it is well to take, consists in introducing, before the withdrawal of the speculum, a piece of moistened cotton-wool up to the os uteri, whence it may be removed in the course of a few hours by the patient. It is seldom that either pain or bleeding follows this application; and at the end of a week the eschar will usually be separated, the surface will be found to have lost its fungous character, and cicatrization to be commencing at its edges. A zinc

lotion of about five grains to the ounce, or the black wash employed as a vaginal injection twice a day, will now generally be sufficient; but sometimes the surface puts on an indolent character again, and it may then be expedient to touch it once or twice with the nitrate of silver, and I have occasionally found it necessary to repeat the application of the nitrate of mercury.

Another state which I have but rarely met with, but which seems usually to call for caustic applications, is one in which the os uteri is the seat of a distinct ulcer, with sharply cut edges, its surface apparently a little depressed below the adjacent tissue, partially covered by a thin layer of dirty yellowish lymph, but red and bleeding on its removal. This condition has usually come under my notice in women whose previous history afforded evidence of syphilitic infection some months before, and it has generally disappeared rapidly under one or two applications of the nitrate of mercury.

Besides the two above-mentioned conditions of the os uteri, which are those that oftenest seem to call for caustic applications, I have in other instances employed them almost empirically, where I have found ulceration or some allied morbid condition of the os uteri to exist independent of any appreciable disease elsewhere, or where a morbid state of the os has persisted after the other symptoms of uterine ailment have been subdued. Neither the one nor the other of these cases has, however, seemed to me of frequent occurrence.

Although I expressed my dissent from the opinion that the sole, or indeed, in the majority of instances, the principal source of leucorrhœal discharge, is the follicular structure of the cervix uteri, it yet must not be forgotten that a very copious secretion may be poured out from that part, and that, in some instances, as, for example, in pregnancy, the discharge may be almost exclusively derived from it. The whole glandular apparatus of the cervix uteri undergoes a remarkable development during pregnancy, and exercises its secretory function with an activity which contrasts remarkably with its non-gravid condition; and then also many of the mucous folicles attaining an unusual size without opening and giving exit to their contents, form those bodies which are usually known under the name of the Nabothian bodies.[1]

But besides pregnancy, there are some other conditions, not very clearly understood, though generally, I believe, connected with some previous irritation of the body of the uterus itself, such as miscarriage leaves behind, or as may be produced by habitual

[1] Further incidental remarks on the much debated question of the nature of these Nabothian bodies will be found in Lecture XIV, under the head of "Glandular Polypi, and Mucous Cysts of the Uterus." It may suffice now, however, to state that the reasons for regarding them as the obstructed mucous follicles of the cervix, which are assigned by M. Huguier, at p. 258 of his paper "Sur les Kystes de la Matrice," &c., in vol. i, of the *Mémoires de la Société de Chirurgie*, seem to me quite conclusive. The same view of their nature is taken also by Dr. Hennig, *op. cit.* p. 63.

sexual excesses, as in the case of prostitutes, in which the cervical glands become enlarged, and pour out an abundant transparent, albuminous discharge. In some instances, the discharge collects within the cervical canal, and escapes in gushes at short intervals. In other cases the discharge is continuous, and may be seen issuing in great abundance from the os uteri, which is usually found open, its lips large but soft, and not tender, and a granular or abraded condition of their surface as often absent as present, while the body of the organ is in general quite movable, and not larger than natural. Between this condition and that in which there is a positive cyst formation in the substance of the cervix uteri, the difference is, I believe, rather of degree than of kind. The distinction between leucorrhœa from this source, and that which is furnished from higher up in the uterine cavity, is furnished by the abundance of the discharge in the former cases, its peculiar transparency and tenacity, and the frequent presence of the Nabothian bodies on the lips, or about the edges of the os. In this case, too, in spite of the long continuance of the leucorrhœa, it is generally unaccompanied by the graver forms of functional disorder of the uterus, such as menorrhagia, dysmenorrhœa, and ovarian pain; while it is not infrequently associated with a state of irritation of Cowper's glands, which pour out an increased discharge, or even with obliteration of their duct on one or other side, and accumulation of their contents so as to form a small encysted tumor at the inner and lower part of the labium.

I believe this ailment, which is essentially chronic in its course, to be of rare occurrence. It certainly, in its severer forms, is very difficult of cure, and though rather an annoying infirmity than a serious disease, I have seen one case where the complete failure of the patient's health seemed to be due entirely to the abundant secretion, which no means succeeded in checking.

The treatment which these cases require is almost entirely local. Something may be done by astringent lotions of various kinds, and especially by such lotions when employed by means of the douche; though you must not forget that the douche is inapplicable whenever a suspicion is entertained of the existence of pregnancy. Astringent hip-baths, too, are of service; while during the persistence of the discharge, it is expedient that sexual intercourse be but rarely indulged in.

I have found benefit in some cases from the introduction of dossils of cotton-wool steeped in solution of tannin, or covered with powdered alum, and applied by means of the speculum to the os uteri; but I have made less use than perhaps I ought to have done of the injection of astringent fluids into the cervical canal itself. A very convenient contrivance for this purpose, consisting of a very small elastic bottle attached to a curved silver canula, is to be had of all instrument-makers. In some obstinate cases I have cauterized the whole of the interior of the cervix with nitrate of silver, by means of Lallemand's porte-caustique, but without advantage. It seems as if in these cases the action

of the nitrate of silver was expended on the copious secretion, and scarcely reached the cervical follicles themselves. Something may probably be done to avoid this evil, by the employment of the douche, or of very abundant vaginal injections to clear the canal of the cervix to some extent just before the caustic is employed. I am disposed to think, however, that in the most obstinate cases it may be expedient to adopt a suggestion of M. Huguier, of which I have but small experience, though I have followed it with benefit on two or three occasions. He is accustomed[1] to scarify the interior of the cervical canal with a small, curved, narrow-bladed, blunt-pointed bistoury before introducing the caustic. The previous scarification exposes the more deep-seated follicles, which would otherwise altogether escape the action of the remedy; and while M. Huguier states that he has never known any mischief follow this proceeding, he has by its repetition two or three times effected the cure of cases that resisted every other mode of treatment.

LECTURE IX.

MISPLACEMENTS OF THE UTERUS.

PROLAPSUS UTERI. Reasons for the mobility of the uterus, and consequent variety of misplacements to which it was liable. Various degrees of prolapsus, and arrangements by which its occurrence is opposed; its causes, tendency to increase, changes in the uterus, and in adjacent parts. Complete Prolapse, or Procidentia.

PROLAPSE OF THE VAGINA;—its relation to prolapse of the womb—may occur in connection with hypertrophy of walls of canal; peculiarities of this form, and hypertrophy of cervix uteri which it produces. Prolapse of anterior, and of posterior wall, with descent of bladder and of rectum: its causes, character, and mode of production.

AMONG the many wonderful adaptations of means to an important end with which the study of anatomy makes us acquainted, not the least remarkable is the contrivance by which the uterus is suspended in the pelvic cavity, so movable as to escape any rude shocks from without, or any inconvenience from the varying conditions of the surrounding viscera, and yet so tethered to its place as to insure its enlargement going on, if pregnancy occurs, in such a direction as shall avoid needless discomfort to the person, or pressure upon, and disorder of the functions of other organs. But this very mobility, without which pregnancy would be a season of uninterrupted suffering, and even sexual intercourse almost impossible, naturally exposes the womb to the risk of changes in its position, such as may themselves become the source of inconve-

[1] See the third of his "Lectures on Uterine Catarrh," in *Gaz. des Hôpitaux*, 1847, p. 379.

nience, and as call more frequently than almost any uterine ailments for medical interference.

It is obvious enough, that an organ suspended within a capacious cavity by means of supports which are themselves yielding, must be very likely to be displaced by comparatively trivial causes. In the case of the uterus, too, the risk of its displacement is further increased by the circumstance, that its weight and size are subject to variations, and that the very causes which tend to render it heavier and larger than natural, have often the further effect of diminishing the power of those supports by which it is retained in its natural position. The tendency to misplacement, too, is further encouraged by the pressure from above of the superincumbent viscera, and by all those muscular exertions which a person cannot avoid making in walking, in lifting weights, or even in efforts at defecation.

All these causes, indeed, tend to produce displacement in one direction—namely, downwards; and accordingly, in all but some very rare instances of uterine misplacement,[1] the organ is thrown lower down than natural, though there are some causes which likewise incline the fundus of the uterus either backwards or forwards, and thus produce its *retroversion*, or *anteversion*, instead of its simple *prolapse*.

Prolapse or *descent* of the womb is so much the most common form of misplacement of the organ, that I will first notice it and those allied conditions in which either the rectum or the bladder becomes prolapsed, dragging in some cases the uterus with it, and will afterwards call your attention to those modifications of its situation in which its fundus is either thrown backwards or tilted forwards.

Prolapsus of the womb, then, which is a common result of any cause that either increases the weight of the organ or diminishes the strength of its supports, may exist in three different degrees, for which different names have been proposed, but which it will, I think, be most convenient to designate simply as the *first*, *second*, and *third* degrees of prolapse.

In prolapsus of the *first* degree, the organ is merely situated lower than natural, but still preserves its proper direction, its axis corresponding with that of the pelvic brim, and this even though it should be so low that its cervix rests upon the floor of the vagina.

In prolapsus of the *second* degree, the uterus is situated with its fundus directed backwards, its orifice forwards, so that its long axis corresponds with the axis of the pelvic outlet.

In prolapsus of the *third* degree, or, as it is often termed, *procidentia* of the uterus, the organ lies more or less completely externally, hanging down beyond the vulva, though it generally

[1] The preternatural *elevation* of the uterus is not only a rare condition, but also one which of itself gives rise to no peculiar or characteristic symptoms. Some remarks on its diagnostic import in doubtful cases of affection of the uterus or its appendages will be found in Lecture XIII.

admits of being replaced within the vagina, if not of being altogether restored to its natural position.

Now the first question that suggests itself to us with reference to this accident, concerns the manner in which it is brought about, and the mechanism which must be disordered before its occurrence becomes possible. The off-hand reply, that the womb is maintained in its natural situation by its ligaments, and that their weakening and stretching are the cause of its prolapse, is neither minute nor correct enough to be of much service to us in practice. The womb is not merely suspended in the pelvis by the duplicatures of peritoneum within which it is contained, but is also supported in its place by the vagina, on which it rests as on a firm though elastic stem. The vagina is yielding enough to allow of the voluntary efforts depressing the womb to the extent of half an inch or an inch, but immediately these efforts cease, the organ would in the healthy state resume its former position, while any further descent of the womb would be at once resisted by the duplicatures of peritoneum, which would be put on the stretch. In the healthy virgin, however, the support afforded by the vagina is very considerable; for instead of being a wide canal with membranous walls far distant from each other, as it appears in so many anatomical drawings and preparations, its two walls lie in close contact with each other, and thus form an almost solid stem for the uterus to rest upon. The curved direction of the vagina further lessens the chances of misplacement of the womb, while at either extremity the vagina is strengthened by its connection through the medium of the pelvic fascia with the bladder and rectum above, and by the sphincter which surrounds it below, as well as by the other muscles of the pelvic floor, and by the perineal fascia, between the two layers of which those muscles lie.

By these arrangements the very beginning of prolapsus is in the healthy virgin altogether prevented; but let habitual leucorrhœa relax the vaginal walls, or frequently recurring menorrhagia diminish their resistance, just as the loss of blood robs all tissues of their natural resiliency, and you will at once see that the first step towards the production of prolapsus uteri is already taken. While all things were in a state of health, the connection of the vagina with the rectum, and thereby with the posterior pelvic wall, would have been the first to offer resistance to the further descent of the womb. If the parts, however, are lax and yielding, this slight resistance will soon be overcome, and the anterior attachments of the vagina not affording any more serious obstacle, the upper part of the canal will become inverted as the uterus descends, and will readily allow it to occupy a position from an inch to an inch and a half lower than its natural situation. In many instances the organ remains in this position, its cervix a little above, or even resting on the posterior vaginal wall, for its further descent is opposed by the various duplicatures of its peritoneal investment. First, the posterior part of the broad ligaments, and the utero-sacral ligaments must be put on the stretch, and then the middle part of

the broad ligaments, before any considerable stress will be experienced by the utero-vesical ligaments, or by the anterior fold of the broad ligaments, and it is to the circumstance of the posterior attachments of the uterus tying it down so much more closely than the anterior that we must in great measure attribute the tendency of the fundus uteri to fall back into the hollow of the sacrum in every case of prolapse of the organ. The round ligaments of the uterus have no share in preventing descent of the womb; their office seems to have reference to the development of the organ during pregnancy rather than to its situation in the unimpregnated state, and the organ must not merely be prolapsed, but must be procident far beyond the external parts, before the round ligaments can be at all put on the stretch, or can be in the least affected by its changed position.

As has been already mentioned, descent of the uterus is not often the consequence of mere weakening of its supports, but in the great majority of instances the same cause as diminishes the resistance increases at the same time the superincumbent weight. The leucorrhœa or the menorrhagia which deprives the vagina of its tone, is often associated with actual uterine disease, and the organ, enlarged by chronic inflammation or its consequences, is more prone than in a healthy person to sink below its natural position. Such is the history of most of the cases in which prolapsus uteri takes place in unmarried women, or in those who have not recently given birth to children; and in such cases, with the cure of the inflammation and the reduction in bulk of the hypertrophied organ, the vagina will once more regain its proper tone, and the womb, which had been situated only an inch or an inch and a half from the vulva, will, as it were spontaneously, resume its proper position high up in the pelvic cavity.

In most cases, however, it is not in single but in married women that prolapsus takes place, and in them it very generally succeeds to abortion or to labor. Everything in these circumstances conspires to favor the occurrence of the malposition, for the womb is greatly increased in weight at the very time when the vagina has lost most of its power of resistance, while the duplicatures of the peritoneum have been so recently put on the stretch by the distended uterus as to be but little able to prevent even the more advanced degrees of misplacement. In not a few instances, too, the tendency to this accident is still further increased by the perineum having been lacerated, and by the whole posterior wall of the vagina having thus been deprived of its natural support by the tearing of the fascia and muscles of the perineum, an accident which has the additional effect of giving to the canal a perpendicular instead of a curved direction.

The general rule of the coexistence in cases of prolapsus uteri of increased weight of the organ with diminished power of its supports, is not, however, without occasional exception. Even in a previously healthy person, a sudden and violent effort, such as the attempt to lift a heavy weight, may sometimes cause the uterus to

prolapse beyond the external parts, just as in another person, or in the other sex, a similar effort might produce a hernia. But while such cases call for no further remark, the occasional occurrence of prolapsus of the womb in old age, in spite of a healthy or even of an atrophied condition of the organ, and in the absence of any exciting cause, requires some explanation. This explanation, indeed, is not far to seek, for it is furnished by circumstances peculiar to that period of life. With the advance of years the fat and cellular tissue which give their rotundity to the labia, and which form a sort of cushion about the entrance of the vagina, become entirely removed; and instead of the vulva being closed, it is scarcely concealed by the shrunken parts. The fat of the perineum is removed; the levator ani becomes atrophied and feeble, and the vagina grows shorter as well as smaller, while it loses its muscularity, and the peritoneal duplicatures lose their resilience. The womb may now almost spontaneously become prolapsed, since, though shrunken instead of being increased in size, it has almost completely lost the support which kept it in its proper position.[1]

This somewhat tedious explanation of the different conditions under which prolapsus of the uterus is commonly brought about, shows, I think, clearly why it is that the fundus of the womb is so disposed to fall backwards, why every prolapsed womb is to a great extent retroverted also. You see that the anterior uterine ligaments do not tie the organ so closely in its place as the posterior, and that consequently the liability of the womb to retroversion must always be much greater than to anteversion. You see also how it comes to pass that the uterus, when once prolapsed, is always extremely likely to remain so. The vagina having once yielded so as to allow of the descent of the womb, can hardly be expected to recover its tone while the patient is going about her ordinary avocations, and the uterine ligaments, subjected to daily stress, can scarcely do other than yield. But not only is the spontaneous cure of a prolapsed uterus thus rendered very unlikely, but the condition has a constant tendency to pass from bad to worse, and for this simple reason, that the pressure of the intestines from above is always helping to increase the descent of the uterus, always filling up the space which that descent leaves vacant in the pelvis. The prolapse of the posterior wall of the vagina, if at all considerable, is daily aggravated by the efforts at defecation, and thus the womb, pressed on from above by the intestines, is at the same time drawn downwards by the vagina. The close connection between the cervix uteri and the neck of the bladder is a temporary obstacle to the complete descent of the womb, while at the same time it favors the retroversion of the organ; but if at length this yields, the urine accumulating in the bladder distends its fundus and the anterior vaginal wall into a pouch which drags down the uterus

[1] By far the best account of the mechanism of prolapsus uteri, and which I have followed in the text, is given by Kiwisch, *Klinische Vorträge*, 3d edition, vol. i, p. 171.

in front just as the prolapse of the rectum drags it down behind; and the organ now soon comes to lie beyond the external parts; the case being thus converted into one of procidentia of the uterus, or of prolapse in the third degree.

But this misplacement of the womb does not happen, or at least occurs comparatively seldom unaccompanied by other alterations both in the organ itself and in the surrounding parts. The womb, subjected to constant and unusual irritation, obeys the law which we observe to be exemplified in almost all the affections to which it is liable, and increases in size by a process of simple hypertrophy, that differs from the enlargement of pregnancy only in the somewhat greater density of the tissue. The neck of the womb is the part in which this alteration chiefly takes place; for it is the neck which is exposed to the most, and the most constant irritation. This enlargement, too, occurs both in length as well as in thickness; so that the neck of the womb may not only be found nearly of the thickness of the wrist, but also greatly elongated, and the os uteri be thus approximated to the pelvic outlet, not simply by the general descent of the womb, but also in great measure by positive growth of its neck. The lips of the uterus become enlarged, together with the rest of the womb, and the small transverse aperture which in women who have borne children should represent the orifice of the womb, becomes converted into a wide opening, situated deep in between projecting lips, whose surface, irritated and excoriated, presents, in parts at least, a vivid red, finely granular surface, covered by a copious albuminous secretion. How much this enlargement of the womb must lessen the chances of the organ resuming its proper situation in the pelvic cavity, is obvious without any remark of mine.

There are limits, however, to this increase of the womb, which seems to be most considerable while the organ, though occasionally or partially procident, yet admits of being replaced in the vagina; and in these circumstances I once found the neck of the womb measure eight inches in circumference an inch above the os uteri. In this instance, however, the patient had nine months before given birth to a child; and the uterus, both at that time and also for three years previously, had been occasionally procident; so that its enormous enlargement was probably partially due to the imperfect involution of the organ after delivery. At first it seems almost impossible that so enormous a mass could pass out of the vulva, and be replaced without difficulty, unless the perineum were altogether destroyed. In not a few cases, however, of procidence of the uterus, the whole pelvic floor completely loses all power of resistance; so that, though quite uninjured, it offers not the slightest obstacle to the misplacement or reposition of the womb; an occurrence, which as might be expected, is most frequent in cases where the accident has followed soon after delivery at the full period, when the parts are already stretched and weakened by the passage of the fœtus.

In the course of time the occasionally protruding womb comes

to lie constantly beyond the vulva, though this procidentia may still for years continue to be only partial; the fundus and a portion of the organ remaining within the pelvis, while the neck and lower part of its body are external. In most instances, however, so considerable a degree of descent of the womb is before long converted into its complete procidentia; the vagina becoming inverted, and forming the outer walls of a tumor, at the lower part of which the womb is situated. So long as the procidentia is incomplete, this tumor is somewhat pyriform in shape, its base being directed upwards; but afterwards, as it increases in size, it assumes an oval form, owing to more or less of the bladder being drawn down into it in front, and of the rectum also, in many cases, behind. Its bulk is also further swelled, in numerous instances, by the small intestines sinking down into the sac, and thus adding to its size till it equals or exceeds that of the adult head. In a preparation now in the museum of St. Bartholomew's Hospital, the external tumor measured seven inches and a half in length by thirteen inches in circumference, and was found to contain, in addition to the uterus and its appendages, the bladder, and a portion of the rectum; no less than five feet eight inches of the small intestines.

The uterus itself, as the above-mentioned case well illustrates, forms in many instances only a comparatively small portion of the large external tumor which often exists in cases of complete procidentia. The susceptibilities of the organ seem indeed to be much diminished, and with them its disposition to hypertrophy when it has come to reside habitually out of the pelvic cavity. Sometimes, indeed, as in the case just referred to, the womb appears actually diminished (it measured in that instance less than two inches from its orifice to its fundus), and I believe that the difficulty which may be experienced in the replacement of long-standing procidentia of the uterus seldom if ever arises from the size of that organ. The bulk of the tumor, and the difficulty of its replacement, depend chiefly upon two causes. Of these the one consists in the enormous hypertrophy which the vaginal walls undergo. Not only does their mucous membrane lose its ordinary character, and become covered by a layer of cuticle like that of the skin, to protect it from the various sources of irritation to which it now becomes exposed, but the walls themselves attain a thickness of as much as half an inch, and present a dense muscular structure. The other cause of the bulk of the tumor, and of the difficulty of replacing it, arises from the presence of the intestines in the sac, which seldom reside there long without inflammation of their peritoneal covering being set up; not of so acute a character, indeed, as to produce formidable symptoms, nor even as always to call for treatment, but matting their different coils to each other, and tying them firmly to the interior of the sac. This latter cause of difficulty in the attempt to return a procident uterus must not be lost sight of, even though no intestines should seem to have descended into the external tumor itself, for the same slow form of peritoneal inflammation may glue them to each other and to

the walls of the pelvic cavity, and thus effectually close up the walls against all endeavors to replace the womb.

In the cases which we have hitherto studied, though the point of departure of the whole evil consisted in a weakening of the vagina, yet that step once taken, the prolapse of the womb might be regarded as a primary occurrence, the organ in its descent dragging down the vagina with it. There are, however, other cases in which the displacement of the womb is entirely a secondary accident, following on a giving way of the anterior or posterior vaginal wall, which becomes prolapsed, and in its prolapsus draws down the uterus. It is thus, for instance, that prolapsus uteri is sometimes brought about in cases of ascites, the pressure of the fluid gradually distending the recto-vaginal pouch, till it may even cause the posterior wall of the vagina to protrude externally. A similar effect is sometimes produced in cases of long-continued constipation, in which the accumulation of fæces in the rectum by degrees distends the intestine into a pouch which projects into the vagina, while still more frequently the anterior vaginal wall gives way from the retention of urine in the bladder, and thus produces in the course of time a similar descent of the womb. There is, besides, a form of vaginal prolapse due apparently to hypertrophy of the walls of the canal, in which the position of the adjacent viscera is not altered, though the os uteri is not infrequently found lower down than natural, owing to the prolapsed vagina dragging at the cervix, and exciting the part to overgrowth by the constant irritation which it thus maintains.

Strictly speaking, these different affections of the vagina should be reserved for our consideration by and by; but there is such a general similarity between their symptoms and those of prolapsus of the uterus, and so close a correspondence between the principles of treatment applicable to them, that we may very well sacrifice systematic arrangement to practical convenience.

First, now, with reference to *prolapsus of the vagina* unaccompanied by misplacement of the other pelvic organs, I have already mentioned that it seems to depend in the first instance on a sort of hypertrophy, as the result of which it cannot well be contained within its proper limits, but a fold of it comes to protrude beyond the external parts. Such an hypertrophy of the vagina takes place during pregnancy, for not only does the womb grow to keep pace with the development of the fœtus, but the vagina grows too; longitudinally, to allow the womb to ascend high up above the pelvic brim; transversely, to afford space for the passage of the child in labor, room for which could not be obtained by any mere stretching of a membranous canal. When labor is over, the vagina, in common with the uterus, ought to diminish in size by a removal of much of its old material. Sometimes, however, just as we have already seen in the case of the uterus, this involution is imperfect, and the vagina then remains longer and wider, and with its walls thicker than they should be, and as soon as the patient begins to move about again, or to make any exertion, a

portion, often the whole cylinder of the lower part of the vagina, hangs down outwardly, an accident all the more likely to take place if the perineum has been injured, or if the levator ani and the fascia at the pelvic floor have lost, as they are wont to do, much of their power of resistance by frequent childbearing. Why it is that sometimes the vagina continues thus hypertrophied while the involution of the uterus has gone on properly, I cannot say, though of the fact itself there can be no doubt; for one meets occasionally with cases in which the uterus, still suspended by its ligaments and by the folds of peritoneum, is little if at all lower than natural, and little if at all altered in size, while the vagina is so wide as readily to admit several fingers, and its folds hang down loosely to or even beyond the orifice of the vulva.

Although this prolapsus of the vagina is usually a primary affection, and attributable to the consequences of pregnancy and childbearing, yet this is not so invariably. The prolapse of the vagina appears to be in some instances consecutive to descent of the womb,[1] but the affection being neglected, the tissue of the protruding portion of vagina may become hypertrophied, and the ailment which was secondary in importance, may by degrees become of greater moment than the misplacement of the womb, and more difficult to remedy.

Though not quite constant, yet the exceptions are but few to the rule that considerable or long-standing prolapsus of the vagina will produce hypertrophy of the cervix of the uterus; not of that portion only which projects into the vagina or portio vaginalis, as it is termed by continental writers, but of the whole uterine neck, of which a specimen (Series xxxii, 30) in the Museum of St. Bartholomew's Hospital, affords a striking illustration. Even more remarkable instances of this kind are on record, one of the first of which was described by Morgagni,[2] and attention was drawn some few years afterwards to their practical bearings by Levret.[3] He clearly pointed out the differences between those cases in which the approach of the os uteri to the vulva is mainly due to overgrowth of the cervix, and the others in which it is entirely the result of the descent of the womb. His remarks, however, were lost sight of, and it was with no previous knowledge of them that Virchow,[4]

[1] Remarks made by Professor Kiwisch, *Klinische Vorträge*, vol. ii, 2d edition, 1852, p. 413.

[2] Morgagni, *De Sedibus et Causis Morborum*, folio, Venetiis, 1761, 2d vol., Epist. 45, Art. 11, p. 204. Morgagni regarded the hypertrophy of the cervix in this case as consequent on the prolapse and hypertrophy of the vagina. "Evidens est, vaginæ adeo crassæ pondere deorsum tractum fuisse uterum, cujus fundus aliquanto inferior fuisset, nisi cervix jam inde ab initio, ut puto, ea esset laxitate, ut se præ cæteris distrahi, distendique in raram istam longitudinem sineret."

[3] *Journal de Médecine, Chirurgie, etc., par M. A. Roux*, vol. xl, Oct. 1773, p. 352, "Sur un allongement considérable qui survient quelquefois au col de la Matrice." Attention was called to this state, with a completeness of detail which leaves but little to be added, by Prof. Stolz of Strasbourg, in *Journal Hebdomadaire*, vol. vi, June 10, 1859, p. 356, where, however, by a misprint, the date of Levret's paper is given 1775 instead of 1773.

[4] Virchow, in *Verhandl. der Gesellschaft f. Geburtsh. in Berlin*, vol. ii, 1847, p. 205.

some few years since, described this occurrence as a peculiar form of prolapse, under the name of *prolapsus uteri without descent of the fundus*. Still more recently the subject has been brought into undue prominence by the assertion of M. Huguier,[1] that prolapsus of the uterus is a condition that scarcely ever exists; but that cervical hypertrophy has been almost invariably mistaken for it, and that consequently not the support of the womb, but the removal of the elongated cervix, is the proceeding to which one ought to have recourse. Like most extreme statements this of M. Huguier, is contradicted by general observation.[2] Still it is well for you always to bear in mind, not only that hypertrophy of the uterus tends to favor its prolapse, and that the prolapsed uterus tends to enlarge still more, but also that long-standing prolapsus of the vagina is almost always associated with a condition of the cervix uteri which closely simulates ordinary prolapsus, but which, as you will hereafter see, must be clearly distinguished from it, since those attempts at mechanically rectifying the supposed malposition which would be of service in true descent of the womb, must here be useless, and sometimes may even aggravate the sufferings of the patient.

Of much more frequent occurrence are those cases in which the prolapse of the vaginal wall is partial, involving its anterior or posterior part only, and deriving, in the great majority of instances, its chief importance from the altered position of the adjacent organs, which descend into the pouch thus formed, and constitute what have been termed by many writers *vaginal rectocele* and *vaginal cystocele*.

In those cases where the anterior vaginal wall gives way, forming a pouch into which more or less of the bladder descends, it is not easy to say what is the first step in the occurrence; whether the vagina draws down the bladder with it, or whether the distended bladder pushes before it the vaginal wall. It is an accident, however, which in the unmarried is even more rare than prolapse of the womb, and its occurrence is traced back, in by far the majority of those who suffer from it, to a miscarriage or labor; to a time, in short, at which all the parts were loose, and had lost the power of resistance, while the vagina as well as the uterus was hypertrophied, and had to undergo that process of post-puerperal involution to which I have had such frequent occasion to refer. Sometimes, indeed, though rarely, the patient gives a history of the sudden formation of a swelling at the anterior part of the vagina during some unwonted exertion, just as the womb itself occasion-

[1] In a memoir read before the Academy of Medicine on March 8, 1859, and published in vol. xxiii of the *Mémoires de l'Académie*—"Sur les allongements hypertrophiques du col de l'utérus."

[2] See especially the discussions to which this paper gave rise, as reported in the *Bulletin de l'Académie*, vol. xxiv, p. 672, 727, 771, 794; a paper by Scanzoni, at p. 329 of the 4th volume of his *Beiträge zur Geburtskunde;* Aran, *op. cit.*, p. 1034; McClintock on *Diseases of Women*, 8vo., Dublin, 1863, p. 58; and Mayer, *Klinische Mittheilungen aus dem Gebiite der Gynäkologie*, 4to., 1 Heft, Berlin, 1861, p. 33.

ally becomes prolapsed in similar circumstances; while it is easy to understand how a comparatively small prolapse may be converted into a large one during some violent effort when the bladder is full, and consequently exposed to all the force of the diaphragm and abdominal muscles pressing downwards.

The union[1] is so much more intimate between the anterior vaginal wall and the bladder, than between the posterior vaginal wall and the rectum, that we scarcely ever find the vagina alone becoming prolapsed, and dragging itself away from the bladder in the same manner as, in prolapse of its posterior wall, it often becomes separated from the rectum. Further, that part of the bladder which adheres to the vagina includes the orifice of both ureters and the whole of the trigone, extending, indeed, somewhat beyond its limits on either side, so that the urine, as soon as secreted, collects in this situation, and tends constantly to distend it into a pouch, whose dimensions increase all the more rapidly since its enlargement is not opposed by the weight of the superincumbent intestines and the antagonism of the abdominal muscles, both of which have to be overcome as the distended bladder rises out of the pelvic cavity.

A slight pouch then is first formed in the anterior vaginal wall, scarcely perceptible when the bladder is completely empty, but tense and elastic when filled with urine, though admitting even then of being partially or completely removed by firm pressure upon it, and disappearing altogether if, while this pressure is being made, a catheter is introduced into the bladder. In the course of time the small tumor, whose anterior border was felt a little behind the symphysis pubis, enlarges, now and then forming a kind of diverticulum,[2] with a narrow neck and long pedicle, but oftener producing a globular swelling, which fills up the canal of the vagina, and projects more or less beyond the external parts, when it becomes covered by the same investment of ordinary skin as clothes the tumor in prolapsus of the uterus or vagina. The weakening and giving way of the anterior vaginal wall, however, seldom attain any very great degree without producing likewise some prolapse of the uterus, though the extent of this is by no means constant. Whenever the uterus does not readily yield to the traction made on it by the prolapsed bladder, the anterior lip of the organ becomes hypertrophied, and projects far beyond the posterior; in a similar way, though not to the same degree, as we have already observed to be the case with the whole of the neck of the womb, in cases of prolapse of the whole circumference of the hypertrophied vagina.

The dragging of the prolapsed portion of the bladder upon the

[1] The exact relations of these parts are nowhere so well described as by Dubois, *Traité de l'Art des Accouchemens*, pp. 190–199, and pp. 234–243; nor so well delineated as by Kohlrausch, *Zur Anatomie, &c., der Beckenorgane*, 4to., Leipsic, 1854.

[2] As in a case described by Madame Lachapelle, *Pratique des Accouchemens*, vol. iii, p. 387, in which the prolapsed bladder was driven down in this form before the fœtal head, and beyond the external parts.

neck of the organ naturally interferes with the functions of the part, and produces frequent desire to pass water, as well as in many instances inability to retain it. Another evil[1] which occasionally results from it (but which I have failed to observe in the few cases where I have been present at a *post-mortem* examination of women who suffered from prolapsus of the bladder, probably from want of directing special attention to the point), consists in a degeneration of the kidneys themselves. The ureters being not only drawn down and stretched, but also in some instances even pressed upon as the pouch of prolapsed bladder projects under the symphysis pubis, the urine with difficulty flows along them; and both they and the pelvis of the kidneys themselves become dilated, with a corresponding atrophy of the secreting substance of these organs.

Prolapse of the posterior vaginal wall is in its slighter degrees of more common occurrence than prolapse of the anterior, and when the perineum has been torn in labor, scarcely ever fails to take place. It does not, however, constantly bring with it prolapse of the rectum in the same manner as the giving way of the anterior vaginal wall is constantly associated with prolapse of the bladder, since the loose cellular tissue which connects them allows of a tolerably ready separation between the two canals, and the rectum may still retain its natural situation. If, however, the laceration of the perineum has been considerable, or if, independent even of any such condition, the bowels have been habitually allowed to be constipated, the lower part of the rectum bulges out into a cul-de-sac, in which fecal masses become retained and indurated, causing, in addition to the ordinary annoyances of prolapsus, much discomfort, sometimes even much suffering, in the act of defecation. It is to the influence of constipation in producing this ailment that must be attributed the comparative frequency with which it is observed, independent of pregnancy and childbearing; and its importance arises in great measure from its aggravating that state of the bowels to which its original occurrence was mainly due.

[1] Referred to, both by Kiwisch, *lib. cit.*, vol. ii, p. 422; and by Virchow, *loc. cit.*, p. 209; by the latter of whom it is more fully described.

LECTURE X.

MISPLACEMENTS OF THE UTERUS.

PROLAPSUS UTERI. Symptoms of its first and second stages; pain, its causes and character, disorder of uterine functions, and of general health. Symptoms of third stage; influence of misplacement on adjacent organs; difficulty of return of long-standing procidentia. Peculiar symptoms of prolapsus of bladder and rectum described and explained.

Treatment of Prolapsus varies according to its cause and degree. Cases requiring or not requiring mechanical support, distinguished; pessaries, their uses and varieties; external supports and bandages.

Management of Procidentia; cautions as to replacement of uterus; treatment of ulcerations of its surface. Operations for its permanent cure considered. Irreducible procidentia; extirpation of womb.

AFTER the study of the manner in which some forms of misplacement of the uterus and parts therewith connected are produced, we come next to inquire into the *symptoms* to which those misplacements give rise. The symptoms depend partly on the changes in the relations of the various organs produced by their altered position, or by the altered position of the womb itself; partly on direct disturbance of the uterine functions, and partly, too, on the sympathy of distinct organs with the ailments of the womb itself. None of these symptoms, however, are constantly proportionate in severity to the degree of misplacement, so that one woman will suffer most acutely from comparative slight descent of the womb, while another will pursue laborious avocations, apparently little distressed by a prolapsus so considerable that the uterus is with difficulty retained within the canal of the vagina.

As a general rule, the patient suffers most in those cases in which the occurrence of prolapsus has been somewhat sudden, and in which it does not succeed to previous delivery or miscarriage. The reasons for this are obvious enough; the dragging at the uterine ligaments and duplicatures of peritoneum must be much more painful when they have been suddenly stretched, than when, already loose and yielding, they give way under the weight of the uterus which they are prematurely called upon to bear. Hence it is that comparatively slight prolapsus in the unmarried is often attended by far more distress than a much greater amount of displacement in women who have given birth to children, and that the degree of suffering which is sometimes experienced after a night's dancing, or a fatiguing ride on horseback, seems to point to an ailment far more serious than slight descent of the womb.

Women designate the peculiar pain which they experience in cases of prolapsus uteri by the expressive term, "bearing down;" a sensation as though the pelvic viscera were about to fall out; and to this is often added on very slight exertion, such as in walking, in lifting anything, or on altering the posture, a sharp pain, due to a momentary increase of tension of the uterine ligaments,

which compels the person to stand still, and often to bend slightly forwards, so as to remove as far as possible all pressure from above, and thus to await the cessation of the pain. The effort at defecation is often extremely painful, from the very circumstance that it puts all those ligaments upon the stretch, while, when the womb has descended so far that its cervix habitually rests upon the floor of the vagina, there is frequently superadded a sense of desire to empty the rectum, a sort of tenesmus which is very distressing. The uterus, too, becomes now exposed to shocks from various external causes from which it was before defended; and sitting on a hard seat, or placing herself in any posture in which the perineum is pressed on, causes the patient extreme pain, so that she is compelled to study her attitudes, and carefully to adjust her position. With these discomforts there is almost always associated more or less of that pain in the back which is the nearly constant attendant upon uterine ailments of every kind; and in some instances there is also an extreme degree of tenderness or sensitiveness in the hypogastric region, which is not aggravated by slight pressure on the surface, or by gentle friction over it, but on the contrary is often much relieved by it. This abdominal pain is no more special to prolapsus than is the lumbar pain, but both seem due to the radiation of painful sensations from the uterus itself, along the different nervous branches and twigs with which it is either directly or indirectly connectly; and hence we find it in many cases of uterine cancer, as well as in dysmenorrhœa, and in very many other chronic ailments of the uterus. Another very distressing sensation often experienced quite in the early stage of uterine prolapsus, and before there is any interference with the position of the bladder, is a very frequent desire to pass water, which the patient is compelled to do every half hour, though with very little relief. In unmarried women, when the uterus has descended so as to lie in the axis of the pelvic outlet, there is besides much distress produced by the os uteri pressing against the hymen; but all of these discomforts are mitigated, many of them cease altogether when the patient lies down.

Pain, however, is not the only symptom of prolapsus of the womb. The organ thus misplaced is irritated, and leucorrhœal discharges are an almost invariable attendant upon the ailment, while, from the same cause, the menstrual flux becomes more profuse, lasts longer, or returns more frequently than natural. The blood flows back from the misplaced womb with more than ordinary difficulty, a state of habitual congestion is maintained, which in some instances relieves itself from time to time by profuse losses of blood, though in spite of them the irritated congested organ tends to increase in size, and the womb, thus larger and heavier than natural, becomes less and less likely to resume its natural situation.

The disorders of the general health that accompany prolapsus of the womb have nothing in them that is characteristic, but consist of that class of symptoms which attend upon so many uterine

ailments, and among which dyspeptic disorders have a very large share, owing to the peculiar sympathy that subsists between the stomach and the womb. Constipation of the bowels may, however, be mentioned as an almost constant attendant upon prolapsus, due in part to the distress which in the early periods of the affection accompanies the effort at defecation; in part also to the mechanical impediment which the pressure of the cervix uteri on the rectum frequently offers to the passage of the fæces.

In the upper classes of society, the symptoms of prolapsus are almost invariably met by appropriate treatment in the early stages of the affection, so that in them it seldom passes the first or second degree of misplacement. There may, however, be exceptions to this rule, in cases where the perineum has been extensively torn and the vagina has consequently been very much and permanently weakened. The atrophy of advancing age being equally incidental to all, the uterus may even in the wealthy come down so low as to protrude partially beyond the external parts. Now and then, too, even in young women, the perineum after childbirth seems so completely to lose its resiliency as to afford little or no support to the vagina. A small knuckle of the posterior vaginal wall soon becomes prolapsed, so as to project between though not beyond, the labia; it here becomes irritated; and irritated, it soon becomes hypertrophied. The edge of the yielding perineum is dragged down by the vagina, or if an examination be made, is easily carried before the fingers, and seeming thus to constitute a part of the vaginal wall, the sensation of the perineum having been nearly destroyed, is most deceptive; and sometimes the eye alone can determine whether this is so or not. Now, in this case the vaginal support of the uterus being completely lost, though the mischief is not irreparable, as it must be when the perineum is torn, external prolapse of the uterus may take place.

The sudden occurrence of external prolapse, or procidentia, when it happens during some violent exertion, or when it takes place all at once during some change of posture a short time after parturition, or in the effort at defecation, is attended by much local distress, and much constitutional disturbance. In by far the majority of cases, however, the womb becomes procident only very gradually; at first but a small part of the organ protruding, and that only occasionally, and then more of it coming down, and for a longer time, till at last the whole womb lies usually, or constantly, beyond the external parts. With this change of position of the organ there is a change of symptoms; often, indeed, a marked remission of some of those which were the most distressing; for the sensibilities of the womb appear to be greatly blunted when once it becomes an external organ, and injuries and interferences which it could not bear while in its natural situation seem to be of but small importance when it has left the pelvic cavity.

The alleviation of the patient's symptoms, however, owing to the cessation of the vaginal leucorrhœa, and the gradual blunting of the uterine sensibilities, is generally more than counterbalanced

by the supervention of suffering from other sources. With the increase of the procidentia of the uterus, the position of the other pelvic organs becomes more and more disturbed; the bladder is drawn down into the pouch in front, and the natural relations of the urethra are often so altered that the canal runs perpendicularly downwards, instead of in a horizontal direction. This misplacement necessarily brings with it much difficulty in emptying the bladder, while accompanying it there is generally a frequent desire to void the urine, and by these two symptoms the patient's life is rendered miserable. In a similar manner, though not so invariably, the rectum is drawn down behind, and difficult defecation is thus superadded to the other symptoms. Nor is this all, but the descent of the small intestines into the pelvic cavity to occupy the space which the uterus and adjacent viscera have left vacant there, disturbs their proper functions, and gives rise to various sensations of pain and discomfort in the abdomen, and to these is not infrequently added the distress from inflammation of the peritoneum, a chronic form of which seldom fails to be set up.

The external tumor is itself the source of much distress. In spite of the thickening of its tegument, the irritation produced by exposure to the air, and by all the forms of external injury from which it is impossible to shield it, as well as by the passage of the urine and fæces, seldom fails to produce ulceration of its surface. This ulceration generally occurs in large patches upon the most exposed parts; as, for instance, at the sides, where the tumor is exposed to friction by the thigh; below, where it is rubbed when the patient sits or lies, and at the upper part, where it is apt to be made sore by the passage of the urine. The ulcers are seldom deep, but are usually irregular, with raised edges and an indolent surface, and are very indisposed to heal. The os uteri, too, from its position at the lower part of the tumor, and its consequent exposure to irritation, as well as from the delicacy of the membrane in this situation, is almost always the seat of an ulcer or excoriation. This ulceration is often of considerable extent;[1] not simply from the circumstance that the lips of the os, partaking of the general hypertrophy of the womb, present a large surface, but also because the continual dragging of the inverted vagina tends to draw the lips of the uterus upwards and apart from each other, and thus produces a very considerable eversion of the mucous membrane of the cervical canal, which soon becomes excoriated. The replacement of the uterus restores the parts to their natural relations, and the large external ulceration passes almost out of sight into the canal of the cervix.

The existence of prolapsus uteri, though no bar to conception, often renders pregnancy a period of very considerable suffering. The slighter degrees of descent of the womb, indeed, are often

[1] This fact, of the correctness of which any one can readily satisfy himself, was, to the best of my knowledge, first noticed by Scanzoni, in a note at page 178 of the 4th edition of vol. i of Kiwisch, *Klinische Vorträge.*

cured by pregnancy, since the uterus as it enlarges gradually ascends in the pelvis; and the temporary relief thus afforded may be rendered permanent by care during gestation, and a long observance of the recumbent posture after delivery. When the misplacement, however, is considerable, and especially when the uterus has already been partially procident, the effect of the enlargement of the womb is to make it descend still lower, so that a consideracle portion of its lower segment, as well as its greatly enlarged cervix, protrude permanently during a great part or the whole of pregnancy. All the symptoms to which prolapsus ordinarily gives rise are experienced in these cases in an aggravated degree, and miscarriage not infrequently takes place, partly owing to the disturbance inseparable from the misplacement of the womb, partly owing to the want of space in the pelvis for the further enlargement of the organ, which is unable to rise as it ought to do into the abdominal cavity. In some few instances, however, pregnancy runs its course undisturbed, in spite of a great degree of prolapsus; and cases are on record in which the uterus has descended further and further till a great portion of it hung down between the thighs; but the development of the fœtus has, nevertheless, gone on in this unnatural position; and others, still stranger, in which coitus has been practised immediately through the os uteri, and impregnation and undisturbed gestation have followed in spite of the existence of irreducible procidentia.

The causes have been explained which tend to oppose the return of any long-existing procidentia of the uterus; and the same causes, though operating in a less degree in simple prolapsus, yet often interfere with the complete restoration of the womb to its normal situation. By degrees, indeed, a woman not infrequently gets habituated to the discomforts of her position, till at length she seems to be but little inconvenienced by them, and this even in cases of external procidentia of the womb. To this, however, there are many exceptions; and the ulcerations of the surface of the procident organ sometimes become very extensive, assume an unhealthy condition, and partial sloughings of the integument take place; or the mass having been unreturned longer than usual, it becomes swollen, tense, and painful, and all attempts at replacing it prove unavailing. The extreme pain, which in some of these cases attends upon any endeavor to replace the womb, is often due to some degree of inflammation having been set up in the peritoneum lining the pouch into which the intestines descend, at the upper and back part of the prolapsed womb, or of the peritoneal investment of the intestines themselves; and death may in these circumstances take place, with many symptoms of the same kind as attend upon fatal strangulated hernia.

Of the two varieties of *vaginal prolapsus* in which its posterior or its anterior wall is displaced, the latter gives rise to by far the more important symptoms. Some degree of prolapsus of the posterior vaginal wall exists, indeed, in very many cases of laceration of the perineum; and a painful dragging sensation on assuming

the erect posture, leucorrhœal discharge, and discomfort from the projection between the labia of a small pouch of vagina, are generally experienced, though by no means in a measure always proportionate to the amount of misplacement. To these are superadded all the inconveniences of constipation, and the distress arising from the impaction of scybala in the rectum, whenever the lower part of the intestine itself becomes dragged down and prolapsed; while, whenever the ailment is of long standing, or considerable in degree, the uterus is usually drawn down also out of the proper position.

The prolapsus of the anterior vaginal wall, attended as it is by descent of the bladder, is accompanied by a peculiar dragging sensation at the umbilicus, which is distressing in proportion as the bladder is full; is lessened, or ceases altogether, when that viscus is completely empty. This sensation has been referred, and probably correctly, to the stress upon the suspensory ligament of the bladder, which must be dragged on more and more in proportion as urine accumulates in the prolapsed pouch of the organ. The patient experiences, moreover, a constant desire to pass water, which very frequent micturition fails to relieve, unless pressure be made from below against the pouch of prolapsed bladder, so as completely to empty the organ. To this becomes superadded in many instances, in the course of time,[1] an altered condition of the urine, which is turbid, ropy, sometimes offensive, and loaded with phosphates; owing, in part, to its retention in the prolapsed pouch of the bladder; in part, also, to irritation propagated to the kidneys themselves. It can scarcely be necessary to say that in these cases the ordinary symptoms of vaginal prolapse will not be wanting; while reference has already been made to the peculiar effect of descent of the bladder in causing hypertrophy of the anterior lip of the womb, and afterwards in occasioning the organ to prolapse.

The characters of prolapsus of the uterus or vagina are so well marked, that with the most ordinary care it must be nearly impossible to mistake their import. We may, therefore, pass at once to the examination of the *treatment* best suited to effect its cure.

Here, however, we at once meet with very contradictory opinions and assertions, for while some writers advocate the general employment of mechanical means to keep the misplaced organs in their proper position, others deny their utility, and allege various arguments against them. Without entering into the controversy, we must bear in mind, what the disputants have too often forgotten, that prolapsus of the womb occurs in very different circumstances; and that its treatment, to be appropriate, must differ too. Sometimes it is the result of causes which add to the weight of the uterus, and thus render its ordinary supports unequal to maintain it in its proper position, while in other instances a weakening of

[1] To this cause of alteration of the urine attention was first called by the late Dr. Golding Bird, in a paper published in *Medical Times and Gazette*, 1853, Jan. 1, p. 11.

the supports themselves, by accident or disease, is the first step towards producing the misplacement; and according as the one or the other of these conditions predominates will the use of mechanical means be expedient or undesirable. Thus, for instance, time, and care, and judicious management generally suffice to remove that form of descent of the womb which succeeds to miscarriage or to labor, wherein the as yet imperfect involution of the organ, and its consequent increase of weight, are the main causes of its misplacement, while mechanical contrivances are always needed when the support which the vagina should afford has been destroyed by extensive laceration of the perineum, or greatly enfeebled by the atrophy of old age.

The first inquiry, then, which we ought to make in every case of prolapsus uteri concerns the cause to which the misplacement of the organ is due; and we must therefore endeavor to ascertain the precise condition of the patient's health previous to the occurrence of those symptoms for which she now seeks our help. In married women we shall often find the commencement of the evil referred to some miscarriage or labor; in the unmarried, to exertion too severe or too prolonged at a menstrual period, and subsequently aggravated by a like want of care at each successive return of the menses. Rest in the recumbent position, strict attention to the condition of the bowels, the cold hip-bath, and astringent vaginal injections, will usually suffice for the cure of such cases; and as the hypertrophy of the womb gradually subsides, so will the organ by degrees regain its proper position. Neglect of due precaution at the menstrual periods, leading as it often does to the minor degrees of uterine prolapse, becomes associated, also, with enlargement of the womb, which disappears, together with the malposition, under the same treatment as is appropriate in those cases where the ailment succeeds to delivery. Here, however, especial care is needed, at the return of each menstrual period, to counteract the tendency of the womb to become again displaced—care, too, which it is often very difficult to induce our patient, who probably feels but little discomfort, to observe. It is by such care, however, rather than by much positive treatment, that we can best succeed in putting a stop to that over-profuse menstruation which is very frequently associated with even the minor degrees of prolapsus. The misplacement of the organ exposes it to irritation; the irritated and congested organ becomes somewhat increased in size; and from its vessels, larger and more numerous than when the organ was in its natural position, blood flows more freely, and all the more so if the patient retains at these times the erect posture, or pursues her ordinary avocations.

In many other conditions the uterus grows larger and heavier than natural, and in some of them, the disposition to prolapsus is even greater than when the size of the organ is due to the incompleteness of its puerperal involution. The womb, though left after delivery much larger and heavier than natural, is not the only part hypertrophied; but its supports, albeit overstretched and conse-

quently enfeebled, have grown too, and are larger and more powerful than in the unimpregnated state. If, however, the increase of the womb is due to some other cause, such as the congestion of habitual menorrhagia, or the enlargement which attends upon chronic inflammation, prolapsus of the organ will be still more likely to occur, since its increase of weight will have been unassociated with any corresponding development of those parts by which it is retained *in situ*. The prolapsus here is purely secondary; the enlarged womb may even require local depletion to reduce its bulk, and till this end has been attained, the prolapsus will tend to increase, while attempts to retain the organ mechanically in its proper position will increase its irritation, and thus prove positively injurious.

If to these cases we add another large class, in which the descent of the uterus is but slight, and is either one result of a general loss of tone in the parts, attendant on a state of debility, or the consequence of some accidental and temporary cause, such as the overexertion of a long walk, or excessive fatigue, we may conclude that the employment of mechanical support for the misplaced womb is not necessary nor suitable:

1st. In slight degrees of uterine prolapse.

2d. In cases where the descent of the womb, still comparatively recent, is due to the persistence of the state of puerperal hypertrophy, owing to imperfect involution of the organ after abortion or labor.

3d. In cases where uterine disease of whatever kind was the occasion of the misplacement of the organ, such disease being still in a stage calling for treatment.

On the other hand, mechanical means of some kind or other are generally appropriate:

1st. In all cases of external prolapse, or procidentia of the uterus.

2d. In cases of long-standing prolapse in the second degree, associated with much relaxation of the vagina, and consequent weakening of the uterine supports.

3d. In all cases of extensive laceration of the perineum, and, for a similar reason, in cases of prolapsus in the aged.

4th. In cases of the minor degrees of prolapsus which are accompanied by extreme distress or violent pain.

5th. In all cases of considerable prolapsus of the vagina, with or without descent of the rectum or bladder; and in all cases in which the uterine prolapsus is secondary to any of those other forms of misplacement.

The supports which are used in these cases are intended either to keep the womb in its proper position, or to afford relief to the painful sensations that accompany its misplacement.

They are either internal or external, the latter being various descriptions of bandages which exert counterpressure in different ways on the sacrum, the perineum, or even the pubes; while the former act immediately on the displaced organs themselves. The internal are called pessaries, from the Greek πεσσοι; the ancients

being accustomed to introduce medicated substances for various purposes into the vagina.[1]

There are two different kinds of pessaries; namely, those which when introduced are maintained in their position by the vaginal walls themselves, and those whose support is external to the vagina, and supplied by means of a bandage or some similar contrivance to which they are attached by means of a stem. Each of these kinds has its advantages in certain cases, while obviously we have no choice but to employ the latter in many instances where the perineum has been so torn as greatly to enlarge the orifice of the vagina, and thus to render its walls incapable of retaining the pessary.

A pessary ought to be light and smooth, in order that by its weight it may not further weaken the lax and yielding vaginal walls, nor increase leucorrhœal discharge by its irritating qualities. It is also desirable that it should not press unequally, nor upon a very limited extent of the vaginal wall, but that the support it gives should be uniform, and distributed over a tolerably large surface. Now these conditions are best fulfilled by a pessary of a globular or slightly oval form, and made of wood or some other material to which a perfectly smooth surface can readily be given. Hollow metallic pessaries have been recommended by some writers, and whenever it is expedient for them to be habitually worn, the lightness, perfect cleanliness, and unirritating qualities of a thin globe of electro-gilt silver render it by far the best pessary that can be employed. The expense of employing any of the precious metals must, however, always be a bar to their general use; while pessaries of box-wood answer every important purpose when a temporary support only is needed. Indian-rubber has many advantages in its softness and elasticity, but it is by no means so cleanly as wood, and is easily acted on by the vaginal secretions. The globular pessary is especially useful in cases of prolapse in the first degree, where the descent of the womb, so that its cervix rests upon the floor of the vagina, causes much local suffering, or much sympathetic disturbance. A small globular pessary introduced into the cul-de-sac behind the womb, suffices to keep the organ off the pelvic floor, and often affords the patient a degree of comfort equally grateful and unexpected, and removes symptoms such as we could scarcely persuade ourselves that so very slight a degree of misplacement of the womb should have produced. The

[1] It was for the medicinal virtues of their composition, not for their mechanical utility, that these pessaries were employed by the ancients. Thus, for instance, in the Hippocratic oath the candidate vows to abstain from the use of pessaries to destroy the fœtus; and it is to the supposed remedial virtues of their constituents that Celsus refers in the twenty-first chapter of his fifth book. Their name is derived by some from their supposed therapeutical power, *quasi* πεσσειν *mollire;* but by others from πεσκος the skin of an animal with the wool on it, in which the materials of the pessary were wrapped previous to being introduced within the vulva. These pessaries were employed in cases of prolapsus uteri, but as a means of applying astringent remedies, rather than of mechanically retaining the uterus in its position; and it is only within the past two centuries that their mechanical utility has come to be chiefly, if not exclusively regarded.

large globular pessary is also very useful in cases of considerable and long-standing prolapsus of the uterus, in which the organ is close to the external parts, or even protrudes beyond them, while the whole of the vaginal wall is in a state of extreme relaxation. In some of these cases, indeed, as well as in others where the perineum has been extensively torn, it may be necessary to retain the pessary by means of an external bandage with a pad pressing on the perineum. In every instance of considerable prolapsus of the vagina, and in all cases where the rectum or bladder is prolapsed, an oval pessary is absolutely needed to prevent the increase of the ailment, and to bring about its cure. The globular pessary, however, is not free from some disadvantages. Unless it be very small, or unless the patient learn to introduce and remove it for herself,—a matter, indeed, seldom of much difficulty,—it not only interferes with sexual intercourse, but also with such an efficient use of vaginal injections as is necessary for purposes of cleanliness. It is partly with a view to obviate the difficulties which a person sometimes experiences in the introduction and withdrawal of the pessary, that air-pessaries have of late been invented, composed of bags of vulcanized Indian-rubber, with a tube attached to them; through which, having been introduced in the flaccid state, they may be distended with air by means of a syringe. They are expensive, and apt to get out of order, but I know of no other drawback from their utility. In some instances there is a very considerable degree of tenderness of the uterus and vagina, so that an ordinary wooden pessary occasions much pain, and when this is the case the Indian-rubber air-pessary will be found extremely serviceable. Besides the more costly form of it, which is inflated by means of the syringe, there is a less expensive kind which resembles an ordinary pessary, except that it is distended with air, instead of being stuffed with horse-hair or any other material.

I ought, perhaps, to say a word or two about the use of pessaries made of sponge, and which, though less employed than they once were, are not without their application in some instances. The employment of globular pieces of sponge enveloped in oiled silk, to render them impervious to the vaginal secretions, has now fallen into disuse, owing to the superior advantages of Indian-rubber pessaries. When used now, therefore, the sponge is introduced either without any covering, or inclosed in a piece of linen. The advantages of the sponge pessary consist in the facility of its introduction, which the patient can always manage for herself, and in the circumstance that it expands so as effectually to keep the uterus *in situ*, and that astringent vaginal injections may be used without its removal. The objections to it are, that its rough surface is always apt to irritate the vaginal walls, while by imbibing the discharges, it grows rapidly very offensive and proportionally more irritating. On these accounts, therefore, it is never to be employed among the poor, whose circumstances are likely to interfere with the most scrupulous cleanliness, nor in any case where there is difficulty in retaining the uterus in its place; while

wherever it is used, the sponge ought to be withdrawn every twelve hours and another substituted for it, and no sponge should be reintroduced till after it has been soaked for twelve hours in water. The only cases then in which sponge is advisable as a pessary, are cases of the minor degrees of prolapse, where we are fearful lest the evil should be increased by the patient's ordinary pursuits and exercise, while the use of a pessary is a precautionary measure, which there is good reason to expect that we may in a short time be able to dispense with altogether.

Another kind of pessary, not so generally applicable as that of a globular or oval form, but yet having advantages that render it very useful in some cases, is the disk pessary. This, as its name implies, is a flat disk of wood, or sometimes of some light material, such as hair or wool covered with Indian-rubber, or even an Indian-rubber cushion inflated with air, which being introduced into the vagina, is placed transversely across between the spines of the ischia, so as to form an artificial floor to the pelvis, and thus keep the uterus more nearly in its natural situation. These pessaries are all perforated with a central opening, which is not merely useful in facilitating their removal, but also allows the ready escape of the menstrual fluid, and even admits the possibility of conception taking place, while they are still worn by the patient. The central aperture, however, has sometimes been the occasion of considerable discomfort to the patient, owing to the cervix uteri passing through it and becoming swollen, and partially strangulated by its edges. This inconvenience is easily avoided by the precaution of having the central aperture made either too small for the cervix to pass through it, or too large for the possibility of its strangulation occurring; and, as a general rule, the former mode of construction is preferable to the latter. A less remediable objection to this kind of pessary is furnished by its extreme liability to become displaced, owing to the circumstance that it is in contact with only a comparatively narrow band of vaginal wall, instead of being embraced, as the globular pessary is, by a large extent of surface; while, though a woman possessed of very slight dexterity may learn to introduce and remove the globular pessary for herself, she must always be dependent on a medical man for the proper adjustment of a disk-shaped pessary.

Many endeavors have been made to overcome by modifications of the instrument this last objection to the disk-shaped pessary, and to provide a support for the uterus which, while easy of introduction, shall yet be little liable to become misplaced. These ends appear to have been at length attained by the ingenuity of Dr. Zwanck,[1] of Hamburg. His instrument, which is now readily obtainable in London, consists of two hollow oval disks of metal, with a central opening in each to diminish their weight, and united by a hinge, so that they can be closed or expanded. A

[1] He published a description and a drawing of the instrument in the *Monatschrift f. Geburtskunde*, Band i, Heft 3.

small curved stem proceeds from near the hinge end of each disk, which, when the instrument is expanded, come into contact with each other, and are easily fixed by a screw which forms the slightly bulbous end of the longer stem, and thus keeps the pessary securely open. The instrument is of course introduced closed, and when carried as high as it will readily pass in the vagina, it is expanded by bringing the stems togther; a turn of the screw secures it in this position, and its management is so simple that the patient learns at once how to introduce and withdraw it herself. I have now employed it on several occasions, and have been surprised to find how effectually it retains even the enlarged womb which has been frequently procident. Its introduction is, however, difficult and painful in cases where the vaginal orifice is at all narrow, and it seems altogether better adapted to the relief of the greater than of the slighter forms of uterine misplacement; and of those especially in which the perineum is torn, or has lost its resiliency so that the air-pessary is not retained within the vagina.[1]

But there is another large class of pessaries in which the instrument is retained in its position by some support external to the patient, not by the mere counterpressure of the vaginal walls and pelvic floor. The principle of all such instruments consists in the employment of some kind of belt surrounding the hips, to which either a stem is attached, bearing the uterine support, or else straps are connected with it which serve to hold the internal support in its proper position. The great practical drawback from their employment is this, that the belt or spring surrounding the pelvis is unavoidably liable to slight changes of position, by which the vaginal stem is sometimes brought to press painfully on the orifice of that canal, or the uterine support becomes misplaced, so as to allow of the descent of the womb taking place by its side. This circumstance, together with their much higher price, leads to their being comparatively seldom employed, though you may meet with cases, those especially in which the perineum has been extensively torn, in which one or other modification of this kind of apparatus will be of service.

One source of comfort to the patient, from the employment of some of these external supports, is derived from the counterpressure on the pelvis which the belt exercises, and which relieves very many of the painful sensations experienced in cases of uterine prolapsus. Two bandages which seem to me extremely well adapted for this purpose, are Hull's utero-abdominal supporter,

[1] Some modifications of Zwanck's instrument have been made, chiefly with the view of rendering the screw more easily manageable by the patient. Of these Schilling's is the most ingenious, since the two limbs of the stem are never separated; but the instrument is opened or closed according as the screw is turned from left to right, or from right to left. This is to be had now of London instrument-makers. A minute description, with engravings of a great variety of pessaries, and other uterine supports, is given by Dr. v. Franque, in his essay *Der Vorfall der Gebärmutter*, folio. Würzburg, 1860.

and a bandage known by instrument-makers as Dr. Ashburner's bandage. Each of these tightly embraces the hips, while the former is furnished with a large padded metallic plate fitting over the pubes, and the latter with a similar one adapted to the upper part of the sacrum. The chief utility of these metallic plates is that by their firm and yet gentle counterpressure they relieve the sympathetic pains referred to the back in one case, or the dragging and distress in the region of the ovaries in another. To both of them a strap passing between the legs, with a perineal pad, is adapted, and though it can be dispensed with at pleasure, will be found of great service in all cases of considerable relaxation of the vagina, with disposition to actual procidentia, when used either alone, or in combination with some form of internal support. The strap and perineal pad have the disadvantage of heating the parts, and thus of keeping up leucorrhœal discharge; but without them the instrument cannot be so well adjusted. Of the two, that of Dr. Ashburner, with its sacral pad, has seemed to me the more useful, greatly relieving the backache, and being found indeed by some persons almost indispensable to their comfort in walking or making any kind of exertion.

It can scarcely be necessary to say much with reference to the manner of introducing pessaries, or the precautions to be observed by those who wear them. Even in cases that most require their employment, it is always presupposed that they are not used so long as any considerable tenderness of the parts exists, or as there are any remains of inflammation or of considerable congestion. These conditions being removed, the patient lying on her left side, the uterus is carried as nearly as possible into its natural position, and the pessary, covered with oil, or some unguent, is introduced, not without attention to the direction of the pelvic axes, and placed either behind the cervix uteri, or simply in the upper part of the vagina, if the relaxation of the vaginal walls is very considerable, and the prolapsus has passed the first degree. Whenever the relaxation of the parts is great, it will be essential to choose at first a pessary so large as not to be introduced through the orifice of the vulva without some little difficulty, for the vagina is always more capacious near to its upper part than close to its orifice; and besides, if the introduction of the instrument were very easy, it would be almost sure to become speedily displaced. In the greater degrees of prolapsus, and when the perineum is torn, an external bandage with a perineal pad is required to keep the instrument in its place.

When the disk pessary is employed, the instrument is introduced edgewise, and is carried up in the vagina as far as possible in that position. It is then fixed by turning it round so as to bring it to lie transversely between the ischiatic spines, when it forms a sort of artificial pelvic floor, on which the uterus rests. Whichever kind of pessary is used, but especially when the disk pessary is employed, we should not leave our patient after its introduction until she has walked two or three times across the room, and thus

ascertained that the instrument still remains in its proper position. Its small liability to misplacement is, as I have already stated, one of the great advantages of Zwanck's instrument.

No pessary should be allowed to remain for many weeks in the vagina, whatever may be the precautions used by frequent employment of vaginal injections to prevent the deposit of the secretions upon it. One of the great advantages of the globular or cylindrical pessary, and also of Zwanck's instrument, consists in the possibility of its being removed by the patient herself every night, and replaced before she rises in the morning, by which means not only can it be kept scrupulously clean, but the vagina can be washed out by the copious use of water, or of some astringent lotion twice in the twenty-four hours. Cases of most serious mischief, arising from the neglect of this precaution, are on record, in which inflammation and ulceration of the vagina have been produced, or the pessary has even made its way into the bladder, thus entailing on the patient all the miseries of vesico-vaginal fistula. But another reason for the frequent removal of a pessary is, that in many cases we employ it purely as a temporary expedient, as a means of keeping the womb in its place, while the vagina and the duplicatures of peritoneum are acquiring that power which may enable them permanently to retain it there. We hope that after a time the pessary may be altogether dispensed with, and as a preliminary step towards this, we change the pessary occasionally, and substitute a smaller instrument for that which was previously worn. It is indeed comparatively seldom expedient to do away with the use of the pessary all at once; but it is in general more prudent to employ one or more instruments of smaller size before discarding their use altogether.

In cases of prolapsus of the rectum, it is important to give the patient special cautions as to the necessity of attending to the state of her bowels, and as to the probability that a few weeks of neglect in that respect would reproduce all her former symptoms. When the bladder has been misplaced, something may be done to cure the slighter degrees of the accident, or after the removal of the pessary to prevent its return, by the patient pressing with her fingers against the anterior vaginal wall whenever she passes water, so as to insure on each occasion the complete emptying of the bladder.

In all cases of procidentia of the uterus, as well as of external prolapse of the vagina, the first point to attend to is to return the parts within the pelvic cavity, and to keep them there by the employment, if necessary, of Ashburner's or of some other well-adjusted bandage with a perineal pad. In some instances, when the procidentia has been of very long standing, this is all that can for a time be attempted, since the amount of hypertrophy of the womb and of the adjacent parts is not infrequently so considerable as to leave little room for the employment of a pessary. It is remarkable, however, with what rapidity such hypertrophy diminishes if the patient is kept for two or three weeks perfectly quiet in the

recumbent posture, while care is taken that the prolapsus does not become again external. The presence even of very considerable abrasion about the os uteri does not in any measure contraindicate the immediate return of the organ, nor do in general the large and indolent ulcerations which form upon the surface of the inverted vagina. The healing of such sores, though always tardy, yet usually goes on much more rapidly within the body than external to it, while, if cicatrization do not advance satisfactorily under the use of simple vaginal injections, such as the lead wash, or the lotio nigra, the patient can be directed to protrude the uterus externally by occasional bearing down efforts, in order to enable us to touch the edges or surface of any ulcer that may require it with the nitrate of silver.

To this rule, however, there are occasional exceptions. Sometimes the exposed surface has become extensively abraded, and is very painful, or the ulcerations upon it are large, numerous, and unhealthy. In such circumstances the endeavor to replace the uterus would be very painful, while the ulcerations may require more direct treatment than would be practicable if the organ were returned within the pelvic cavity. When this is the case I am accustomed to keep the patient for a few days strictly in the recumbent posture, with the hips raised, and the uterus itself supported on a pillow, and enveloped either in simple water-dressing or in a weak lead lotion, or if the abrasion of its surface be very extensive, and the discharge from it very profuse, in cloths soaked in a lotion composed of two scruples of the oxide of zinc, suspended by means of two drachms of mucilage, in six drachms of water. If the sores are very indolent they may be dressed with an ointment of two drachms of Peruvian balsam to an ounce of spermaceti ointment, while their edges may require daily touching with the solid nitrate of silver. These measures, however, are to be continued only so long as the state of the procident parts absolutely requires it, for the sooner they can be replaced the better it is in all respects. Two other conditions require caution in the endeavor to replace the womb, or delay in attempting it. When the uterus has long been external, the intestines, as already explained, fall down out of their proper situation into the pelvic cavity. They may grow so habituated to their new position that considerable discomfort may be experienced by the patient when the womb is replaced. In these circumstances it will be advisable to return the organ for a short period only every day, so as by degrees to accustom the parts to the disturbance of what has now become, by the lapse of time, almost their natural position. The discomfort, however, that the patient experiences, may be further due to the circumstance that adhesion has taken place between the intestines themselves, or between them and the margins of the sac of the prolapsus, thus offering a positive mechanical impediment to the replacement of the womb, and calling for much care on our part, since not discomfort only, but dangerous peritonitis, may result from too forcible efforts to return the womb, or when replaced, to keep it constantly within the

pelvis. In all cases, too, of very large prolapsus, in which the intestines have descended into the sac, much caution is necessary in any attempt at replacing the womb. If there be much tenderness of the mass, it may be expedient to apply leeches to it, and to keep fomentations or water-dressing upon it for many days. But even in the absence of any such symptom it is yet expedient, unless the mass is returned with great facility, to content ourselves for a time with raising the uterus by means of a pad, and applying a T bandage to prevent its further descent; for if by gentle means we can gradually diminish the prolapsus, we may hope in the course of time safely to remove it altogether. By an opposite course of proceeding, so much violence will almost invariably be done to the intestines as to excite their inflammation; and I have seen death on one occasion result from this want of precaution, while in another instance, though no excessive violence was used in replacing the organ, peritonitis supervened, from which, however, the patient happily recovered.

The various contrivances for the relief of prolapsus of the uterus or vagina which we have hitherto examined, are confessedly merely palliative measures; bringing about a cure, indeed, in many instances, but doing so indirectly by preventing any increase of the displacements, and thus giving time and opportunity for nature gradually to remove them. In the slighter degrees, and in comparatively recent cases of prolapsus, these means seldom fail to accomplish much good; but there is an uncertainty about their results when the accident is of long standing, or very considerable, which has led not unnaturally to the endeavor more speedily and more surely to accomplish a cure.

Numerous operations have therefore been devised, having in view either the diminution of the orifice of the vulva, and the consequent prevention of external prolapsus, or the contraction of the vagina itself, and thereby the removal of one of the chief causes on which the prolapsus depends. There can, probably, be no difference of opinion with reference to the propriety of performing an operation in some of these cases. In those, for instance, where extensive laceration of the perineum has been followed by prolapsus of the vagina or rectum, and by consequent descent of the uterus, it is obvious that all mechanical contrivances for keeping the womb in place will accomplish but little in comparison with what we may hope to do by restoring the perineum, giving to the vagina once more its proper support, and bringing the parts again into their natural condition. Between this, however, and the artificial contraction of the orifice of the vulva there is a very wide difference. The restoration of the natural perineum gives back to the pelvic organs the support of which accident had deprived them, and is thus essentially a curative measure; the partial obliteration of the vulva does no more than mechanically to close the opening through which the prolapsed organs had escaped from the pelvic cavity; while it leaves all the other evils of the accident unmitigated, and even less amenable to palliative measures, and to such

aid as mechanical contrivance can afford, than they were before. In spite of these obvious drawbacks, however, the difficulties attendant on the application of pessaries and other mechanical supports, the discomforts inseparable from their employment, and their insufficiency, in some instances at least, to answer even that limited purpose which alone they can fulfil, led to the suggestion by Mende[1] of one operation, and to the performance by Fricke[2] of a somewhat different one, with the object of retaining the uterus within the vagina. Mende's operation, which was intended to retain the womb by forming an artificial hymen, was never practised, but the attention which has been excited in this country by the performance of an operation identical in principle to that of Fricke renders it desirable to enter somewhat more into detail concerning it than would otherwise be expedient.

Fricke's operation consists in the removal from the edge of each labium of a portion of its substance of two fingers' breadth; the incisions being begun about an inch below the superior commissure on either side, and uniting in an arched form half an inch behind the frenulum; in doing which a special caution is given not to be too sparing of integument. The hemorrhage having ceased, the edges are united by sutures, of which ten or twelve are sometimes necessary, and the operation is completed. The union thus obtained was incomplete in many instances, but even then a sort of bridge of integument was formed which it was believed by M. Fricke would prove amply sufficient to retain the uterus in its place. The operation, too, was speedily adopted by others, and Dieffenbach lent the great weight of his reputation in its support. But nevertheless, "though the proceeding had apparently taken firm root in surgical practice, and though it had been most carefully performed by dexterous hands, the lapse of time sufficed to moderate the highflown expectations which had been entertained concerning it, and a calm judgment succeeded, which we," says Professor Kilian, "after having performed the operation five times, pronounce without the least hesitation. It may be regarded as established,—1*st*, That the operation in some, though very rare cases, is of permanent service. 2*d*, That in not a few other cases it is likewise of temporary utility, sufficing to retain the womb for some weeks, possibly even for some months, but allowing of the eventual return of the procidentia as the orifice of the vagina gradually dilates; and 3*d*, that very often it either fails completely, or its success is extremely imperfect. In the face of these evils, Fricke's proceeding was unable to maintain itself

[1] *Die Geschlechtskrankheiten des Weibes*, Göttingen, 1834, vol. ii, p. 51.

[2] *Annalen*, etc., vol. ii, 1833, p. 142: whence a minute account of the operation is extracted in Kilian's *Operationslehre*, 2d ed., vol. iii, 1851, p. 95; and in South's edition of *Chelius*, vol. ii, p. 114. The date of the appearance of Mr. South's work was 1847; that of Mr. Brown's work on *Diseases of Women*, in which for other purposes, South's *Chelius* is referred to, is 1854; but by a singular accident, all the details which Mr. South's *Chelius* contains, with reference to operations for prolapsus uteri, seems to have escaped Mr. Brown's notice. See his letter in the *Medical Times*, April 11, 1857.

in practice, and the various attempts made to improve and to modify it have proved altogether unsuccessful."[1]

Nearly simultaneously with the abandonment of this operation on the continent, an unconscious modification of it was introduced into this country by Mr. Baker Brown, in which the general integument is left untouched, the mucous membrane only being removed from the inner surface of the labia from a point on a level with the urethra, and from the posterior surface of the vagina, and the parts being then brought together by sutures, the orifice of the vagina is thus contracted, and the perineum elongated. This proceeding is certainly much less severe than that adopted by Fricke, but at the same time it must contract the orifice of the vulva to a much less extent than the other operation by which the integument is so freely removed. When, therefore, we find Fricke's operation, even as modified by Malgaigne, who carried his incisions much deeper, and removed a considerable extent of mucous membrane at the orifice of the vagina, in order to include a still larger surface in the suture, abandoned on account of its not being followed by permanent success, we hesitate to pronounce an opinion on the alleged successful result of almost every one of fifty cases in which the modified operation was performed by one surgeon.[2]

Frequent as is procidentia of the uterus among the poor, cases in which the condition proves rebellious to rest and well-contrived mechanical support, are, I believe, of very rare occurrence. It is suprising how much the size of the procident womb is reduced after its return within the vagina by a month's rest in bed, how completely a long-standing ulceration of its orifice heals, and how effectually the organ is retained afterwards within the pelvis by a bandage. If in the majority of these cases an operation were performed, a similar result would doubtless be obtained; the month's compulsory rest in bed would be followed by the same diminution in the size of the uterus, and the elongated perineum would answer for a time at least the same purpose as the perineal pad of an ordinary bandage; while by slow degrees the ligaments in the one case as in the other might regain some measure of power, and the womb might cease to fall down externally. If, however, the operation be limited to cases of special gravity, and to such I apprehend it ought to be confined, I doubt whether any higher commendation can be bestowed on it than is contained in the Hippocratic axiom, which pronounces a "doubtful remedy to be better than none at all." In the only case of mine in which, the perineum

[1] Kilian, *op. cit.*, p. 99.

[2] *Medical Times*, November 21, 1857. The value of the statement is illustrated by the fact, that of forty-one cases reported in the 2d edition of Mr. Brown's work on *Diseases of Women*, pp. 101–111, while one only is an admitted failure, and one allowed to be an incomplete success, there are but three of the remainder concerning which any information is given after the discharge of the patient from the hospital. The permanence of the cure is the test of the value of the operation; towards establishing that, these thirty-six cases are absolutely worthless.

being intact, the operation seemed requisite, it failed completely to retain the womb, and within two months from the patient's leaving the hospital the procidentia was as bad as ever. The patient was a young unmarried woman, twenty-six years old, whose spine was much distorted by lateral curvature, and to whom, on that account, no bandage could be adapted. Mr. Paget performed Fricke's operation; the union of the parts was complete, and the elongation of the perineum was carried further than would have been expedient had the woman been married. The cicatrix yielded to the pressure from above; for a time the uterus distended the new perineum, then bit by bit it dilated the orifice of the vulva, till at length it projected externally as it had done before.

A verdict not more favorable must be pronounced on a kindred though somewhat different operation, which has sometimes been practised either in addition to that for narrowing the vulva, or independently of it, and which consists in the endeavor to contract the vaginal canal, either by the removal of strips of its mucous membrane, or by the employment of the actual cautery, or of strong caustics, so as to produce cicatrices in its walls, and consequent shrinking of its calibre, or by the insertion of sutures in its tissue in a peculiar manner, with the view of obtaining the same result. The first of these proceedings, suggested by a French surgeon, M. Gérardin, but actually performed thirteen years afterwards by Dr. Marshall Hall, and modified by Professor Dieffenbach, of Berlin, has been practised more frequently than the other operations, and with considerable temporary success. The actual cautery employed by M. Laugier, and afterwards by Dr. Kennedy, of Dublin, and the use of the strong nitric acid resorted to by Mr. Benjamin Phillips, have proved less successful; while Bellini's operation by means of the suture is difficult, complicated, and has therefore been abandoned. The objection, and, to my mind, the fatal objection, to these as to the other surgical proceedings for the cure of prolapsus uteri, is furnished not merely by the imperfect nature of the cure which they accomplish, and the new discomforts and inconveniences which they substitute for those before experienced, but still more by the want of permanence in their result, even when their issue is most fortunate, and this objection seems to me all the more serious since failure in this respect appears to be the rule, success the rare exception.[1] I think, too,

[1] Professor Scanzoni, in a note at vol. i, p. 205, of the fourth edition of Kiwisch's work on *Diseases of Women*, and at p. 124 of his own *Lehrbuch der Krankheiten der weiblichen Sexualorgane*, 8vo., Wien, 1857, makes some remarks on this subject, based on his own experience at Prague, which amply bear out the statements in the text, and corroborate the verdict that I have quoted from Professor Kilian. He says that of five cases in which the orifice of the vulva was contracted by operation, all were unsuccessful, either failing from the first to retain the womb, or the newly-formed perineum stretching by degrees till at length the orifice of the vulva widened so as to allow the womb to protrude just as it had done before the operation was undertaken. The result of thirteen cases, in which it was endeavored to produce contraction of the vagina, was still more unsatisfactory, since in every one

that if we consider the circumstances in which prolapsus either of the uterus, rectum, or bladder takes place, we can scarcely expect that the result of the operation should be other than temporary; that the cicatrix tissues should yield to the pressure from above, and that all their other causes remaining unremoved, misplacement of the organs should in most instances recur.

The operations already referred to seemed to deserve rejection rather on account of their inadequacy to effect a permanent cure of the evils for the removal of which they have been suggested, than on account of great difficulties or great danger in their performance. The removal of a large portion of the neck of the womb, however, as recommended by M. Huguier, merits condemnation on different and more serious grounds. The excision of the portio vaginalis of the uterus, which M. Huguier employs in some cases of descent of the organ, is an operation, as I have already stated, by no means free from danger, and additional experience does but confirm surgeons in their view of it, as a proceeding not to be lightly had recourse to.[1] M. Huguier's special operation, however adapted, as he believes, to cases of elongation of the neck of the womb above its connection with the vagina, is of a far more formidable kind, and "consists in taking away, together with the upper extremity of the vagina, the whole length of the neck, and, if necessary, the lower part of the body of the uterus, removing it by an incision slanting from without inwards, after having previously detached the bladder from the part to be excised."[2] This statement of the nature of the operation loses nothing of its formidable character if one reads the details of its mode of performance, or looks at the illustrative plates, or considers the very needful cautions given by M. Huguier as to the means by which one may best avoid opening the peritoneal pouch behind and the

the uterus within a few weeks protruded as much as ever. It is almost superfluous to add anything further in condemnation of proceedings which are falling into disuse by their own inutility. I cannot, however, refrain from adding the opinion of Dr. Gustav Simon, of Darmstadt, no mean authority in all questions of this kind. *Monatschr. f. Geburtsk*, 1859, vol. xiii, p. 284. After relating an unsuccessful case on which he himself operated, he adds that he has frequently watched its performance by other surgeons, and believes a *permanent* cure of prolapsus to be very rarely brought about. "These slender results of episiorraphy," says he, "an operation which moreover is not unattended by danger, led to other means being devised for the relief of prolapsus. Recently, indeed, such well-contrived pessaries have been invented (those of Rosen and Scanzoni, of Zwanck and Eulenberg) that it can very seldom happen for a case to occur in which the far more uncertain and more hazardous operation is indicated. In not a single one indeed of the rather numerous instances of uterine prolapse which have come under my care, since the performance of the operation which I have related, have I found it necessary to resort to episiorraphy, for in every one suitable pessaries, generally that of Zwanck, retained the prolapsus just as well as the most successful operation could have done." I may add, that during the last three years of my connection with St. Bartholomew's Hospital, I did not meet with a single case of prolapsus which a Zwanck's pessary failed to retain.

[1] See some recent cases referred to in the discussion on M. Huguier's paper, by M. Depaul, *Bulletin de l'Académie*, vol. xxiv, p. 682.

[2] *Op. cit.* p. 150.

bladder in front, while the hemorrhage, always profuse, can scarcely fail in some instances, to endanger life.

Moreover, the very conditions in which the need of relief is most urgent, are those which, according to M. Huguier, forbid the performance of the operation, inasmuch as he says, that "a capacious pelvis and a large opening of the vulva, more or less laceration of the perineum, and considerable relaxation of the soft parts at the pelvic floor, absolutely contraindicate it."[1] I would confidently ask, how many are the patients suffering seriously from the symptoms of uterine prolapse, in whom some one or more of these conditions are not present, and in what persons but those whose sufferings are most severe, should we be justified in setting their life upon the cast by the performance of an operation which rests on a false hypothesis, which is not proved to be permanent in its results in many of the cases where it has been performed, and which can be but moderately perilous only in the hands of those who may be possessed of the exceptional dexterity of M. Huguier?[2]

The annals of medicine contain the history of some few extraordinary cases in which the uterus, having long been procident, being quite irreducible, and having been attacked by inflammation which terminated in gangrene, has been removed with no ill effect by means of the ligature and knife. I have no personal experience of such cases, though a patient was once sent to me at St. Bartholomew's Hospital to have the procident uterus extirpated. The procidentia, however, was not irreducible; the uterus was not the seat of any dangerous inflammation, and the woman within the previous year had given birth to a child. I need not say that the operation was not performed, but the womb, being replaced within the pelvis, was retained there by means of an Ashburner's bandage, and the patient was sent back to the country in a state of comparative comfort.

I do not know, however, but that instances may occur justifying this proceeding, and further, would remind you that the womb, when long misplaced, loses much of that sensibility which characterizes it when in its natural position. The inverted womb has on many occasions been safely removed by ligature, and one of the few instances of successful extirpation of the cancerous uterus was that recorded by the younger Langenbeck, in which his father performed the operation on a womb that for years had been procident beyond the external parts.[3]

There would be two great risks to be avoided in such a proceeding: the one would be that of opening the peritoneum, the other that of wounding the bladder, which viscus in almost all cases of

[1] *Ibid.*, p. 166.

[2] The criticisms of M. Depaul in the discussion at the Academy of Medicine, those already referred to by Scanzoni in vol. iv of his *Beiträge* on this and the analogous operation of Professor Braun, of Vienna, and in the 3d edition of his *Lehrbuch*, published in 1863, pp. 143–147, may be consulted by any one who is desirous to pursue this subject further.

[3] *De totius uteri extirpatione*, auctore M. Langenbeck, 4to., Göttingæ, 1842.

considerable or long-standing prolapse, descends far down in the front of the tumor, and without much care would be very likely to be injured.

LECTURE XI.

MISPLACEMENTS OF THE UTERUS.

VERSIONS AND FLEXIONS OF THE UTERUS.
Retroversion of the Womb; knowledge of its existence in unimpregnated state comparatively recent. Its causes, and mode of its occurrence. Illustrative cases.
Anteversion often confounded with anteflexion.
FLEXIONS OF UTERUS—probably more frequent than misplacements of whole organ—always take place at one point, and why; comparative frequency of ante and retroflexion. Absence of disposition to spontaneous cure; existence of adhesions and of atrophy of uterine wall. Influence of flexions on uterus in other respects, hypertrophy of womb; constriction of internal os, &c.
Obliquity from congenital malformation.

WHEN speaking about prolapsus uteri, I explained to you how it occurs that descent of the womb is always associated with a disposition to retroversion of the organ; or, in other words, to a falling back of its fundus into the hollow of the sacrum. Such minor degrees of retroversion, however, are of comparatively trivial importance, and whatever symptoms they may occasion are entirely lost in the general consequences of the downward displacement of the womb.

Cases, however, especially of late years, have engaged the attention of practitioners, in which, though the womb may be somewhat lower than natural, yet it is not only, nor even principally, to this displacement that the patient's symptoms are due, but rather to a falling of the fundus uteri downwards and backwards into the hollow of the sacrum, accompanied with a corresponding elevation of its cervix, which is directed upwards and forwards against the symphysis. To Dr. William Hunter we owe, if not the first mention, at least the first clear description of this *retroversion of the womb* as an accident liable to happen in the early months of pregnancy; and since his time no treatise on midwifery has failed to mention its occurrence, and to delineate its symptoms in colors even darker than are always needful.

But though it would seem natural to anticipate that this accident should not always be limited to the pregnant state, but might also sometimes happen in any other circumstances which rendered the womb heavier than natural, and its supports more lax, yet it was long before this was recognized as a general fact, and the few instances of the displacement which were from time to time recorded by continental writers were regarded as rare and exceptional occurrences. The minute detail of four cases of this misplacement of the unimpregnated womb, by Professor Osiander, of

Göttingen, in the year 1808, then in the zenith of his reputation, did much towards directing attention to the subject. It was not, however, until some years later that the publication of the essays of Professor Schweighäuser,[1] of Strasburg, and of Professor Schmitt, of Vienna,[2] fully established the frequency of the accident, and furnished a description of its symptoms so minutely accurate as to have left little room for the additions of subsequent observers.

The researches of these German writers attracted but little attention out of their own country; and retroversion of the womb, as well as the opposite condition of its anteversion, were regarded by medical writers, both in France[3] and England, as ailments extremely unusual in the unimpregnated condition of the womb. In the year 1848, however, a paper was published in the *Dublin Journal of Medical Sciences*, by Professor Simpson of Edinburgh, on retroversion and other misplacements of the unimpregnated womb—accidents to which he had already drawn attention five years before at a meeting of the Medico-Chirurgical Society of Edinburgh; and since that time the danger has been lest the importance and frequency of these conditions should be overrated, rather than lest they should be underestimated.[4]

One of the results of close attention being directed to the situation of the womb in the pelvic cavity, has been to show that the organ is liable in this respect to very great varieties; that not only may its fundus fall backwards into the hollow of the sacrum, or forwards against the symphysis pubis, but that it may also incline towards either side; and that moreover its body is liable to be bent upon the cervix, constituting a new class of misplacements called flexions. There seems also to be reason for believing that the different varieties of flexions of the womb, as its *retroflexion* and *anteflexion*, are of more frequent occurrence than the corresponding alterations in position of the whole of the organ which are known as *retroversion* and *anteversion*.

Fewer difficulties present themselves in the way of understanding the mode of occurrence of *retroversion* than of the other above-mentioned misplacements of the womb. It has already been seen that the tendency of the womb, when at all enlarged, is not only to sink below its natural position in the pelvic cavity, but at the same time to fall with its fundus backwards towards the hollow

[1] Schweighäuser, *Aufsätze über einige Gegenstände der Geburtshülfe*, 8vo., Nürnberg, 1817, cap. xxviii, p. 251; and *Das Gebären nach der beobachteten Natur*, Strasburg, 1825, 8vo., p. 234.

[2] *Bemerkungen über Zurückbeugung der Gebärmutter bei Nichtschwangeren*, 8vo., Wien, 1820.

[3] From this statement, however, it is only just to except the name of M. Velpeau, who was led by his own observation long since to appreciate the frequency and importance of flexions of the uterus, and to devise means for their cure. See p. 14 of a small tract of his, *Maladies de l'Utérus*, 8vo., Paris, 1854.

[4] Opinions at variance with those of Dr. Simpson were however expressed by several writers, as, for instance, by Dr. Bennett, Dr. Oldham, and Dr. Matthews Duncan, of Edinburgh, who, though differing from each other in some respects, yet all formed a low estimate of the importance of mere versions or flexions of the uterus, and dissented from the employment of mechanical means for their removal.

of the sacrum, in consequence of the utero-sacral ligaments confining it more closely to the posterior part of the pelvis than do the utero-vesical ligaments to the anterior pelvic wall. Moreover, enlargement of the womb, whether from the presence of fibrous tumor, or dependent on simple congestion and consequent hypertrophy of the organ, or resulting from its imperfect involution after delivery or miscarriage, is almost always much more considerable at its posterior than at its anterior wall, and the womb in consequence naturally falls towards that side which is the heavier. The ordinary distension of the bladder, too, necessarily tends to throw the uterus into the posterior half of the pelvis; and if the utero-vesical ligaments be at all yielding, as they must be in cases where some degree of prolapsus exists, the same cause must also dispose the fundus of the organ to fall backwards; while the inclination to the malposition will be increased by a loaded state of the bowels such as exists habitually in many persons.

When favoring causes such as have been just referred to coincide, retroversion of the womb may take place either gradually, or as the result of some sudden accident which violently increases the uterine misplacement, and throws the fundus of the organ downwards and backwards into the hollow of the sacrum. It is thus suddenly that in the majority of instances retroversion of the pregnant womb takes place—an accident, the comparative rarity of which is, I apprehend, to be accounted for mainly by the circumstance that not only does its physiological enlargement equally extend to the whole of the organ, but also that the size and strength of its ligaments increase with the added weight which they have to bear. But while, owing to this wise provision, the pregnant womb rises gradually and safely out of the pelvic cavity, the hypertrophied organ, or that whose involution is imperfect, or in whose substance tumors are developed, being destitute of such duly increased supports, sinks down far lower than natural in the pelvis.

The sudden effort and consequent violent misplacement which we generally find to constitute the history of retroversion of the enlarged and pregnant womb, are sometimes equally marked in the case of the non-gravid uterus, showing that the mode of occurrence of the accident is identical in both instances. Thus, a woman aged thirty, whose second and last labor had taken place sixteen months before, while reaching over the fire to remove a heavy tea-kettle, was suddenly seized by violent pain referred to the back and the umbilicus, and became for a time unable to pass her urine, and though she afterwards voided it, yet it was with pain and difficulty, and defecation also was attended by pain. On examination per vaginam the finger came in contact with a firm, but slightly elastic, globular tumor, which felt about half the size of an orange, and occupied the posterior half of the pelvis, having driven before it the posterior vaginal wall, while the rectum could be traced passing behind it. The situation of this tumor was not exactly in the mesial line, but it occupied rather more of the right than of the left half of the pelvis, while the os uteri was situated

high up, immediately behind the symphysis pubis, but a little to the left of the mesial line. I may remark, in passing, that to this slight obliquity of the retroverted uterus it is due that the urethra and neck of the bladder not infrequently escape that pressure which would otherwise be unavoidable; and thus it happens that difficulty of micturition is, in many instances even of retroversion during pregnancy, by no means so prominent a symptom as the statements in most systematic treatises on the diseases of women might lead one to expect. There was, besides, in the left iliac region, a firm slightly movable tumor, whose surface was a little irregular, as if nodulated, and pressure upon it was communicated to the tumor in the pelvis. Inquiry ascertaining that the patient's bowels had long been in a constipated condition, it was assumed that while the sudden exertion had retroverted the uterus, the accumulation of fæces in the sigmoid flexure of the colon and in the upper part of the rectum had prevented its spontaneous replacement. Enemata and purgatives were employed, and in the course of seven days the womb, which was not much larger than natural, had completely regained its proper position, while a vague sense of some swelling in the posterior part of the pelvis was ascertained to be due merely to the existence of very great hypertrophy of the walls of the rectum, a condition which is by no means uncommon in cases of long-standing habitual constipation.

It is not thus suddenly, however, that retroversion of the unimpregnated uterus usually occurs. In the majority of instances the accident may be traced back to labor, menstruation, or miscarriage; to some condition, in short, which combines considerable enlargement of the womb with weakening of its supports. A patient was received into St. Bartholomew's Hospital, on account of what was alleged to be a tumor in her womb, and suffering from frequent hemorrhage, from pain in the sacrum and hypogastrium, and from painful and difficult defecation. All these symptoms dated from a miscarriage at the third month, which had occurred six weeks before. The uterus was completely retroverted, the os being directed forwards and somewhat upwards, while an elastic, globular, slightly tender tumor occupied the hollow of the sacrum. The uterine sound entered for five inches and three-quarters, with its concavity directed backwards, and on turning the instrument round, the tumor completely disappeared. Rest was followed by cessation of the hemorrhage, the use of the cold douche led to some diminution in the size of the uterus, though it was still as much retroverted as ever, when the outbreak of small-pox in the ward compelled the patient's discharge from the hospital in less than three weeks after her admission.

Just two years later, the patient came once more under my notice. She had in the interval been pregnant several times, but had on each occasion miscarried early, while, when not pregnant, she had suffered much from menorrhagia. The uterus was no longer so enlarged as before, though of greater size than natural, but its misplacement was just as considerable; still, however, ad-

mitting of momentary removal by means of the sound, but almost immediately falling back into its former position. If this person had not been exposed to the risks of becoming pregnant, there can be no doubt but that the involution of her womb would have taken place much more completely; though even then the misplacement would almost certainly have continued unrelieved, and accident might then have discovered a small and otherwise healthy uterus completely retroverted, with no other clue to the cause of this occurrence than would have been furnished by the history of a miscarriage, succeeded by long-continued hemorrhage some years before.

The state of the womb during menstruation is similar to its condition after miscarriage, and favors in the same manner, though of course in a less degree, the descent of the organ or its retroversion, while in every form of misplacement of the uterus the tendency of things is to a deterioration rather than to an improvement. The accumulation of urine in the bladder, the distension of the rectum with fæces, have a disposition to aggravate the misplacement, while the stretched ligaments and the lax vagina have no power of spontaneously recovering their tone, and of thereby favoring the replacement of the womb. With the return of each menstrual period, too, the uterus for the time grows heavier, and subsides further and still further back in the pelvis, till at length its retroversion becomes complete. Nor must it be forgotten that in some at least of the instances of this and of kindred misplacements, any permanent improvement is effectually prevented by the formation of adhesions between the fundus of the uterus and the surface of the adjacent intestines. Such attacks of circumscribed peritonitis as to produce these consequences were first noticed by Madame Boivin[1] as a cause of abortion, and she appears, indeed, to have exaggerated both their frequency and their importance. They are, nevertheless, of considerable moment, and none the less for the circumstance that they are by no means constantly accompanied by symptoms so severe as to force themselves on the patient's attention. Their occurrence, and the consequences which they leave behind, sufficiently account for the immobility of the retroverted uterus in some instances, for its difficult replacement and immediate resumption of its malposition in others.

Although I have spoken first of retroversion of the womb, yet the opposite state of *anteversion* of the unimpregnated organ earlier attracted attention, and was described by Levret[2] with characteristic accuracy. In this condition the fundus is directed forwards against the symphysis of the pubes, and its orifice backwards into the hollow of the sacrum. How this accident comes to happen, and to happen even with considerable frequency, is certainly not easy to understand. The very form of the pelvis, as observed by

[1] *Recherches sur une des causes les plus fréquentes, et la moins connue de l'Avortement*, 8vo., Paris, 1822.

[2] "Sur un déplacement particulier de la matrice, dont les auteurs n'ont point parlé," in Roux, *Journal de Médecine, etc.*, Sept. 1773, vol. xl, p. 269.

the late Professor Kiwisch,[1] while it favors the production of retroversion, is opposed to any such misplacement as the anteversion of the womb, while the accumulation of the urine in the bladder and of the fæces in the rectum, the former taking place from below upwards, the latter from above downwards, alike tend to prevent and remove it. There is, besides, no such pouch of peritoneum in front of the uterus as exists behind it, allowing space for the descent of the fundus uteri, and for its residence in this unnatural situation. In spite, however, of these conditions, which would seem to oppose the occurrence of anteversion of the uterus, it is yet met with in many instances, though I believe less often unassociated with previous enlargement of the organ than the opposite state of retroversion. Thus in fourteen out of twenty cases of anteversion or anteflexion of the womb there was marked enlargement of the organ, while the history of the patients further warranted the belief that the misplacement was in these instances secondary to other much longer standing diseases. Such I believe to have been the cause of the misplacement of the womb in a patient whom I saw four years after her delivery, which had been succeeded by phlegmasia dolens, and symptoms of uterine inflammation so severe as to have confined her to her bed for three months. Such possibly was the real history of a woman who had lived three years in sterile marriage, and who was attacked suddenly during menstruation, ten months before I saw her, by severe pains in the abdomen, followed by temporary cessation of the menses, by great pain in the hypogastrium, difficulty and pain in micturition, and symptoms like those of severe vaginitis, and who had ever after experienced attacks of violent paroxysmal uterine pain. Her uterus was both hard and enlarged, the fundus resting against the symphysis, and the os in the hollow of the sacrum. Sometimes, moreover, one meets with an increased degree of obliquity of the womb, though short of actual anteversion, which appears to be the almost mechanical result of sexual intercourse. When in connection with this exaggerated obliquity of the womb, there has also existed some congestion of the organ, such as is not unusual, particularly in sterile women, the misplacement is then often associated with symptoms of uterine disorder, which probably are due less to it than to the gorged state of the bloodvessels with which it is associated.

Still there are instances, though of far less frequency than those above referred to, in which there is no evidence of previously existing disease, but where the anteversion of the womb was apparently a primary occurrence. It was so in the remarkable case which first drew the attention of Levret[2] to this malposition. In this instance, the fundus of the anteverted womb was taken for a calculus in the bladder, and the patient died from the effects of lithotomy performed under this erroneous idea. In this instance, it is expressly stated that slight engorgement of the anterior wall

[1] *Op. cit.*, vol. i, p. 235.

[2] *Loc. cit.*, p. 269.

of the uterus, and a somewhat unusual shortness of the round ligaments, were the only appreciable causes of its malposition. A woman, aged thirty, the mother of four children, the last of whom was born three years before she came under my observation, had ever since experienced some, though inconsiderable, abdominal pain. A few days before I saw her, however, while turning a mangle, she felt a sudden pain over the pubes, which extended over the whole pelvic region, and on making an examination, the uterus was found remarkably anteverted, the os being in contact with the anterior wall of the sacrum, and the fundus resting against the inner surface of the symphysis. It seems difficult here to avoid connecting the symptoms suddenly supervening during exertion with the misplacement of the womb. Still harder does it appear to me to be able to account for the malposition of the organ in an unmarried lady, aged thirty-four, whose menstruation had been habitually scanty, and who had suffered for eight months before she came under my care from hemorrhoids, accompanied by profuse loss of blood. For four months she had also experienced abiding aching pain in the hypogastrium, with frequent and painful micturition. Her uterus was lying almost horizontally across the pelvis, its orifice being directed backwards, and to the left, and this to so great a degree as to render it almost impossible to touch the small circular os, while the fundus was situated in the same manner forwards and to the right.

Be the explanation of cases such as the above what it may,—and I confess myself unable satisfactorily to solve all the difficulties which they present,—there can be no doubt but that, in the greater number of instances of alleged version of the womb either forwards or backwards, the organ is really flexed, or bent upon itself; and further, that not infrequently the two conditions coexist, the whole womb being thrown more forwards or more backwards than natural, while, in addition, the body of the organ is bent upon its cervix. As far as the symptoms are concerned to which they give rise, these varieties of misplacement present but little difference; but the distinction deserves to be borne in mind, since it throws light on the manner in which the accident is in many instances brought about.

The point of *flexion of the uterus*, whether it is bent forwards or backwards, appears always to be the same—namely, the point of junction between the body and neck of the womb, or, in other words, a spot corresponding to the internal os uteri; so that the organ assumes a shape closely resembling that of a chemical retort. Various reasons have been assigned for the constancy with which the organ is found to bend at this one situation; and various theories, such as an assumed atrophy of one part of the uterine walls and engorgement of its fundus while the cervix remains unaltered, and other suggestions less plausible, have been proposed in explanation of the fact. But these conditions are by no means invariably present even in cases of most marked flexion of the womb, and must therefore be rejected as inadequate to account

for its taking place at the same situation in all cases. The only explanation that I know, against which no such objection can be raised, is that propounded by Professor Virchow, of Berlin,[1] and which is based on the anatomical relations of the organ. He points out the fact, that while the neck of the womb is firmly connected with the posterior and lower part of the bladder, its body is perfectly movable; the point to which the peritoneum descends in the utero-vesical pouch corresponding exactly to the situation of the internal os uteri, and, consequently, to the spot where the fixed cervix passes over into the movable body of the organ. The posterior surface of the cervix uteri, though somewhat strengthened by the cellular tissue which surrounds it, is by no means so firmly fastened as its anterior surface; while the pouch of peritoneum descends much lower down behind it, and is even on a lower level than the summit of the roof of the vagina. If, now, any cause interfere with the ready mobility of the body of the womb, while the attachments of its cervix retain their firmness and resistance, a bending of the one part on the other must of necessity take place; a bending which may occur either forwards or backwards, and thus constitute either anteflexion or retroflexion. With reference to the production of the accident, it is probably a matter of indifference whether its cause is one that operates gradually and continuously, or suddenly and with great force—a violent exertion may therefore produce it; and just as much may the slow action of adhesions tethering the fundus of the womb either to the bladder or the rectum, and compelling the organ in the course of time to yield at its weakest point—namely, at that which corresponds to the junction of the body and neck of the organ.

This explanation will account equally for the occurrence of anteflexion and of retroflexion. Of the two misplacements, the former is alleged by Rokitansky, and by other morbid anatomists, to be the more frequent; and observations during life confirm, on the whole, the correctness of this statement. In my own notes, indeed, I find the particulars of forty-three cases of retroversion or retroflexion, and of only twenty of anteversion or anteflexion; but these results are at variance with those of some most trustworthy observers, and I believe they are due to the circumstance, that in the early period of my observations I often failed to mark the slighter degrees of anteflexion. Valleix, in his valuable lectures on this subject,[2] gives thirty-five deviations of the uterus forwards, and thirty-three backwards; Dr. Mayer,[3] of Berlin, met with sixty-three cases of the former, and sixty-four of the latter; and MM. Bernutz, Goupil, and Gosselin found a greater or less degree of flexion or version of the uterus forward, in 106 out of

[1] *Ueber die Knickungen der Gebärmutter;* in the *Verhandlungen der Gesellschaft für Geburtshülfe*, vol. iv, 1851, p. 80.

[2] *Des Déviations Utérines*, 8vo., Paris, 1852, see p. 27.

[3] As stated by Dr. Rockwitz, in *Verhandl. der Gesellschaft f. Geburtsh.*, vol. v, 1852, see p. 85.

163 women who had never given birth to children.[1] This latter statement, however, represents the frequency of that physiological curvature of the womb which, while it exists in the child and in the unmarried woman, ceases after childbirth, or is even replaced by a disposition to version or flexion of the fundus backwards. A condition met with in two women out of three can scarcely be other than natural; and while I may have often overlooked it, I believe that I do not err in regarding it as usually of but small importance.

The older opinions on this subject, indeed, are in conformity with the conclusions which I have arrived at, and I believe them to be correct, as far as any such degree of misplacement is concerned, as would manifest itself by symptoms during life; while the whole subject of uterine versions and flexions has been of late much obscured by the confounding together of the natural and the morbid degrees of these misplacements. There can be no doubt, indeed, but that slight degrees of anteflexion of the uterus are frequently overlooked during life, since not only does the finger come less readily into contact with the parts in the anterior than with those in the posterior half of the pelvis, but further, unless the bladder be completely empty, the tumor of the anteflexed womb is scarcely perceptible. A slight flexion of the womb forwards is, however, a natural condition, as is exceedingly well shown in Kohlrausch's beautiful delineation of a section of the pelvic viscera.[2] "The uterine canal," says he, "is not straight, but slightly curved, like an italic *f*, and the whole organ has in its natural position a slight flexure, being curved at first a little backwards, then bent more considerably forwards." This curve, however, is no longer apparent after childbearing, while, besides, any cause which produces enlargement of the womb, brings with it those influences that tend to favor retroversion or retroflexion of the organ.

The explanation that has been proposed of the invariable occurrence of flexion of the uterus at the same point, suggests the reason why the ailment has no tendency, or scarcely any tendency, to spontaneous cure, and explains why the misplaced womb remains misplaced for years. Two conditions, moreover, tend to give to the misplacement a permanent character, of which one is the pres-

[1] See notes 3 and 4, at p. 465 of vol. ii of Bernutz and Goupil's *Clinique Médicale sur les Maladies des Femmes*, 8vo., Paris, 1862.

[2] *Zur Anatomie, etc., der Beckenorgane*, 4to., Leipsig, 1854. In a paper read before the Medico-Chirurgical Society, and afterwards published in the *Dublin Medical Journal*, August, 1857, Dr. Bennett gave the results of his own investigations on the living subject, which led to precisely the same conclusions as those arrived at by Kohlrausch. The observations of Boullard, contained in his thesis, which appeared in 1853, who believed that a degree of anteflexion of the uterus, far exceeding any gentle curve, was the really normal state of the uterus, have been shown by Depaul (*Gazette des Hôpitaux*, No. 36, 1854), to be vitiated by the circumstances in which they were made, and that purely cadaveric causes are chiefly influential in producing great flexions of the organ, and especially flexions of the fundus forwards. Boullard's statements, however, though they exaggerated the degree of the natural curvature were correct as to the fact of its general existence, and deserve the praise which attaches to priority of observation.

ence of adhesions binding down the fundus of the uterus, either to the rectum posteriorly, or to the bladder in front; the other is the wasting of that wall of the uterus towards which the flexion has taken place, and which must necessarily render the organ incapable of retaining its natural position, even though it were possible to replace it completely. Of these two conditions the former is, I believe, the more frequent, and therefore the more important. Such adhesions are expressly mentioned in many of the cases where, on examination after death, flexions of the womb have been discovered, and I can speak to the extreme frequency of adhesions, false membranes, or other indications of bygone inflammation about the womb or its appendages, since I met with them in twenty-two out of sixty-six cases in which I examined the uteri of women who had died of some other than uterine disease. There appears to be some uncertainty as to the date of the occurrence of atrophy of the uterine wall, and also as to the degree in which it takes place. I found no trace of it in a case where the uterus was greatly anteflected, and where the existence of marked uterine symptoms for many years rendered it probable that the condition was of long standing; and it is expressly stated by Dr. Rockwitz[1] not to have been present in the case of a woman whose uterus had been completely retroflected for a year by the presence of an ovarian tumor. On the other hand, Virchow describes the gradual wasting of the muscular substance at the point of flexion till nothing is left but a small quantity of flaccid, slightly fibrous, cellular tissue; and in a very useful essay on the subject, Dr. Sommer[2] relates some post-mortem examinations in which this atrophy of the uterine wall was very remarkable.

The effect of such a change in the uterine wall is twofold. On the one hand it weakens the tissue at one point, and thus incapacitates the organ for maintaining its proper position; on the other it shortens the wall towards which the flexion exists, and thereby insures still more effectually the permanence of the malposition; and no one who is familiar with uterine ailments, and has felt the bent uterus resume its malposition immediately on the removal of the sound by which it had just been rectified, but must believe that such wasting of one uterine wall must exist in a very large number of instances.

A frequent, though by no means an invariable result of long-standing flexion of the womb, and one which must be borne in mind as explaining some of the symptoms to which it occasionally gives rise, is a contraction of the internal orifice of the womb. This constriction too, is, at any rate in Virchow's opinion, not a merely mechanical approximation of the two sides of the canal by the bending of the organ, but is in many instances due to an organic narrowing of the passage, produced by the constant irritation of the mucous membrane at this spot, and its consequent thickening.

[1] *Loc. cit.*, p. 82.
[2] *Zur Lehre des Infractionen und Flexionen der Gebärmutter*, 8vo., Giessen, 1850.

Any positive obliteration of the internal os, however, which Virchow has sometimes met with in aged persons, is not merely a very rare occurrence, but is probably due in large measure to the natural tendency to closure of the internal os in old age, and which the flexion of the uterus, though it may have increased, has not originated.

One or two other consequences of flexion of the womb deserve mention, though I believe that the degree to which they exist admits of very wide variation. The body and fundus of the womb are very apt, as the result of their altered position, to become the seat of congestion; a congestion that may be very intense,[1] and with the existence of which it is reasonable to associate the disposition to menorrhagia that is so prominent a feature in many cases of this kind. Moreover, a part that is the frequent seat of congestion tends to enlarge, and hence the misplaced body and fundus of the womb often become hypertrophied, while the difficulty of escape of the secretions, when the angle of flexion is very acute, helps to increase the dimensions of the uterine cavity, a result of the occurrence of which the uterine sound informs us in a very large number of instances.

The condition of the cervix uteri is seldom natural, but there is generally a profuse secretion from its glandular apparatus, while the edges of the os uteri are usually red, and their epithelium is often abraded, a condition dependent doubtless on the state of general irritation of the cervix. To the touch the margins of the os rarely present any marked deviation from a healthy condition, while the os itself (at least in retroflexion, concerning which my observations are more numerous than concerning anteflexion), is often open so as to admit the tip of the finger. The anterior lip, too, in cases of retroflexion, is usually shorter than the posterior—an alteration of the natural relations probably due, as Sommer suggests, to merely mechanical causes, and to the dragging out of its place of the lip on that side which corresponds to the convexity of the flexed womb.

In the cases to which reference has hitherto been made, the uterine misplacement would seem to be an acquired condition, though one coming on at different periods of life, and under the influence of causes which, sometimes at least, are obscure. There are other instances, however, in which *obliquity of the uterus* forwards, backwards, or to either side, is *the result of congenital malformation*, associated with marked difference in the length of the womb and broad ligaments on the two sides, or dependent on unequal development of the two halves of the womb itself. In one instance in which I found the womb, in an unmarried girl, aged eighteen, oblique in form, and inclined towards the right side, the left ligamentum ovarii was 1.2 inch in length, while that of the right side measured only .6 of an inch; and in the body of another

[1] As in the drawing of the anteflexed uterus at figs. 5 and 6 of plate ix of Boivin and Dugé's *Atlas*.

unmarried girl, aged nineteen, likewise free from all trace of uterine disease, the womb was unequal in size, its right corner being .3 of an inch higher than the left. Professor Tiedemann,[1] who was the first to call special attention to this condition, has published in his treatise on the subject several drawings, which represent very extreme degrees of uterine obliquity and malformation. There is nothing to surprise us in the occasional want of symmetry of an organ formed as the uterus is, in great measure, by the coalescence of two lateral halves or cornua. At the same time it seems very doubtful whether such inequality of the womb gives rise to any symptom, or whether in the event of pregnancy and labor occurring, it produces any of those formidable results which Deventer and other practitioners of midwifery a hundred and fifty years ago referred to obliquity of the uterus; opinions which even at the present day are not altogether exploded. I refer to these conditions now chiefly for the purpose of impressing on you the by no means needless caution, that since uterine obliquity may depend on causes wholly beyond remedy, so prudence dictates that when it gives rise to no symptoms we should abstain from all endeavors at cure, which, to say the least, are needless, which very likely may be fruitless, which possibly may prove very mischievous.

LECTURE XII.

MISPLACEMENTS OF THE UTERUS.

Versions and Flexions of the Uterus.

Symptoms. Conflicting opinions concerning them; how they may to a certain extent be reconciled. Alleged symptoms not always due to misplacements. Evidence of statistics; production of symptoms connected with other causes acting on the womb. Enumeration of symptoms, and separate examination of each.

Diagnosis. Use of the sound.

Treatment. Historical sketch of opinion and practice on the subject. The uterine supporter; reasons for rejecting mechanical contrivances, and for preferring palliative treatment. Plan of treatment described.

We have hitherto been occupied with the examination of the nature of the various versions and flexions of the uterus, and have had occasion, in the course of this inquiry, to notice conflicting opinions and opposing statements which it was very difficult, which it was sometimes indeed quite impossible, to reconcile. Such discrepancies become more numerous and more frequently irreconcilable as we pass to the study of the symptoms which these misplacements produce, and to the consideration of the treatment that they require. The symptoms are by some described as being

[1] *Von den Duverneyschen Drüsen des Weibes, und der schiefen Gestaltung und Lage der Gebärmutter*, 4to., Heidelberg, 1840.

both numerous and characteristic, and the appropriate treatment is by them alleged to be both simple, safe, and successful; while others deny that the malpositions taken by themselves produce any symptoms, and assert that the proposed treatment, while attended by very considerable risk, is wholly inadequate to the removal of the evil which it is intended to cure. Each of these opinions, too, is maintained by men equal in the eminence of their position, in their practical experience, and their good faith.[1]

The alleged results of these uterine misplacements may be briefly stated to consist in disorder of menstruation, which is usually both excessive and painful, in leucorrhœal discharge, in pain and difficulty both in defecation and micturition, and in pain in the pelvis generally, though usually most severe in that part of the pelvis towards which the fundus uteri is turned or flexed, while sterility is a further consequence stated to be produced by flexions of the womb in a very large number of instances. In these symptoms it is obvious that there is much that of itself cannot be regarded as pathognomonic of one uterine affection rather than of another, since they constitute just that train of ailments which, in varying combinations and with varying intensity, we meet with in almost every disorder of the womb. To this, however, it would not be right to attach much importance, since the uterine ailments that manifest themselves by some one characteristic symptom, or by characteristic combinations of symptoms, are very few indeed. Just as sickness may depend on sympathetic disturbance of the stomach during pregnancy, or on irritability of the organ consequent on some exhausting disease, or on the presence of sarcinæ in its cavity, or on the development of cancer in its walls, so may the same symptoms depend in one case on trivial disorder of the womb, in another on its incurable disease. The symptoms are like the alarm-bell, which gives notice of a something wrong, and serves to awaken attention; it is not fair to expect that they should at once inform us not merely what part suffers, but what the exact cause is on which those sufferings depend.

Another circumstance, however, has been much insisted on as proof of the unreality of the alleged symptoms of these misplacements—namely, that in many instances where accident has revealed the existence of uterine misplacement, the functions of the womb were performed in all respects naturally and painlessly. But from this fact we must be careful not to draw too wide an inference, for even the early stages of uterine cancer pass not infrequently unrevealed by any symptoms of disorder of the womb; and fibrous tumors often attain a great development before their existence is suspected, or a lull of their symptoms takes place so complete and of such long continuance that careful examination alone convinces us of the persistence of the evil which had pro-

[1] The published report of the discussion at Paris on this subject, contained in the *Bulletin de l'Académie de Médecine* for 1853–54, vol. xix, pp. 778–976, is a most remarkable illustration of the extent to which, in an uncertain science, difference is possible.

duced them. There is a French phrase which expresses excellently well the character of those in whom both these misplacements and other uterine ailments are generally attended by the most urgent symptoms: they are persons *qui s'écoutent vivre*,—who watch themselves live; and the ailments of which another would be barely conscious, are to them sources of exquisite torture. The ailment may be a real one, and yet it may be the wiser and more hopeful course to try to remedy the state of constitution which exaggerates the patient's sufferings, rather than to meddle with the local affection that excites their present manifestations.

But there are facts of a different kind which show that the importance of these ailments has probably been overrated; and they are furnished by cases where the removal of the misplacement, though no other uterine ailment was discoverable, has not been followed by any mitigation of the patient's sufferings; as well as by others in which the symptoms once present have ceased, in spite of the persistence of the misplacement. A woman, aged twenty-two, had been married four years, during which period she miscarried four times; on the last occasion, at the sixth month, seven months before coming under my care. She suffered from the date of her last miscarriage from pain, leucorrhœa, and profuse menstruation, accompanied by discharge of coagula; and on examination her uterus was found retroflected, the fundus being directed not only backwards, but also to the left side. Twenty-seven months after her last abortion she became pregnant, but the misplacement continued during the early months of pregnancy, as was ascertained by examination. She gave birth to a live child at the full period of utero-gestation, and expressed herself as feeling afterwards perfectly well; but her womb was still retroflected, and I found it occupying its old position fifteen months after her delivery, or four years and a quarter after the miscarriage to which she originally referred all her sufferings.

A woman, twenty-eight years old, had been married nine years, had given birth to one child in the second year of her marriage, and five years before I saw her had undergone some operation for the removal, as she said, of a uterine tumor. Ever since this operation she stated herself to have suffered from leucorrhœal discharge, with pain of a burning character in the neighborhood of the uterus, much aggravated by defecation or by sexual intercourse, and being especially severe at the menstrual periods. The perineum was somewhat torn, the uterus low down, its orifice circular, with perfectly smooth edges, and its posterior lip was connected firmly to the posterior vaginal wall, and cicatrices ran from it for some distance to the left side of the vagina.[1] The uterine sound entered easily with its concavity directed backwards for two inches

[1] It is not without interest, as illustrative of the futility of many of the suggestions made for the cure of these ailments, to notice the existence in this case of that very condition of adhesion between the cervix uteri and the vaginal wall, on the production of which by surgical interference M. Amussat has insisted as so important a means of cure.

and a half; on turning it round the tumor completely disappeared. For the first four or five days after the replacement of the uterus the patient expressed herself as feeling much relieved; but her symptoms then returned, and have continued just the same as before for four years and a half, during which time I have had the opportunity of frequently examining the condition of the uterus, and have always found it occupying its natural position.

But be the value of cases such as these what it may, as proving on the one hand that flexions of the womb do not of necessity give rise to any suffering, and on the other, that the removal of a flexion of the organ may not be followed by the least relief to a patient's distress, the fact still remains, that misplacement of the womb is in very many instances accompanied by various uterine ailments, such as were not experienced before its occurrence. The question, however, suggests itself with reference to these cases, as to whether their history presents any peculiarity which would warrant our believing that the symptoms are due not simply to the misplacement, but to some other morbid condition with which the misplacement is associated, or to the two causes together? Now, there are circumstances which appear to favor the opinion, that in the majority of instances the symptoms are due not to misplacement alone, but to misplacement accompanied by some other morbid state of the womb.

The fact, that of 131 instances of version or flexion of the womb,[1] 115 occurred among married women, 16 only among those who were single, tends to connect it with the performance of the highest functions of the sexual system—with pregnancy, delivery, and their consequences. This view is further confirmed by the circumstance that the age at which the majority of women suffer from its symptoms coincides with that period of life at which those functions are in most active exercise. Valleix states that the majority of his patients referred the commencement of their ailments to between the ages of twenty and thirty years; while the fact that forty-nine out of the sixty-three patients of whose cases I have preserved a record were under forty years old at the time of their coming under my care, points in the same direction. Moreover, in thirty-four out of fifty-seven cases of married women referred to by M. Valleix, and in twenty-one of my fifty-eight (or twenty-one of forty-six, if for the moment twelve cases where marriage had proved sterile are omitted), the patients referred the commencement of their ailments to delivery or miscarriage; to a time, in short, when the womb was larger, heavier, and more abundantly supplied with blood than at other seasons, when its recently stretched supports were less able than at other times to keep it in its proper position, and when those attacks of circumscribed peritonitis, by which adhesions are produced between it and the adjacent parts, are specially likely to occur. The case

[1] The above numbers are derived from the sixty-eight cases of Valleix, with sixty-three of my own.

related in the last Lecture (p. 162) shows how in these conditions the enlarged uterus may be retroverted, and shows further how, in spite of its gradual reduction in size, the misplacement may still continue; its symptoms aggravated after each fresh miscarriage, which reproduced, though in a slighter degree, the same train of evils as attended the first occurrence of the accident. Of the remaining thirty-seven patients, three had fibrous tumors in the uterine walls, so that the misplacement of the womb might be regarded as in part due to their presence, while in a fourth there was a small tumor, probably ovarian, behind the uterus, which not merely retroflected it, but having become adherent both to the womb and to the rectum, prevented the uterus from resuming its proper position even after the tumor, in which suppuration took place, had discharged its contents by the bowels; and in a fifth the misplacement was apparently consequent on the formation of an abscess between the uterus and rectum, by which the organ had been retroverted and finally bound down by adhesions in its unnatural position. Four patients, one of whom was unmarried, referred their symptoms to a menstrual period, which had been attended by an unusual amount of suffering, and one dated them from intemperate sexual intercourse. Once the symptoms succeeded to an attack of vaginitis, which was most likely accompanied by peritoneal inflammation, since the anteflected womb was bound down in its unnatural position; and in one more, in whom the enlarged and anteverted womb was similarly fixed in the pelvis, there was a history of abdominal pain and tenderness occurring causelessly five years before. Six times the accident seemed to have succeeded to some sudden violent exertion, and in one instance (that in which the symptoms persisted after the removal of the misplacement), the patient dated her suffering from some operation performed five years previously, apparently for the removal of a polypus. There still remain twenty patients, concerning the cause of whose ailments no adequate explanation is given. It is not without interest, however to observe that in almost all of these cases, the symptoms had come on very gradually, and the misplaced uterus was in the great majority of instances much enlarged. The subsidence of the symptoms and the diminution in size of the womb took place simultaneously. Sometimes as the organ grew smaller, it resumed its natural position of its own accord, while in other cases it remained misplaced, but there did not seem to be any invariable connection between the completeness of the patient's recovery and the return of the womb to its proper situation.

It seems, then, that in by far the greater number of instances, the development of all the symptoms of flexion or version of the uterus coincided with the operation of some cause that increased the size of the womb, or produced congestion of the pelvic viscera; and further, it may be added, that the almost immediate relief which followed rest, local depletion, and the due regulation of the bowels, seems to show that to these associated ailments, rather

than to the mere misplacement of the womb, the patient's sufferings were to be attributed. Not infrequently, however, the relief, though striking, was of short duration; and the patient had not long followed her usual avocations, or not long returned to her husband's bed, before many of her former symptoms returned. But this is by no means peculiar to misplacement of the womb; for we see illustrations of it in the increased suffering which, in almost every uterine ailment, attends upon the menstrual period, and in the aggravation of all previous uterine discomfort, which in many women succeeds to marriage, and which is sometimes the occasion of ailments being brought to light whose very existence was previously unsuspected.[1]

A woman, aged thirty-five, was admitted into St. Bartholomew's Hospital, and gave the following history of herself: She had been married eleven months, but had never been pregnant. Previous to her marriage her health had been good, with the exception that menstruation, though regular, was always very painful. Since her marriage, however, she had suffered much from constant aching pain round the loins, felt most in walking, and constant desire to pass water, while her menstruation had become very frequent in its return. On making an examination, the os uteri, which was small and circular, was found directed backwards; while above the anterior wall of the vagina a tumor of a rounded form was felt pressing forward against the bladder, and could also be distinguished by means of a sound introduced into that organ. I imagined the body to be formed by the anteflected uterus; though, after careful and repeated examinations, in the course of which I endeavored successfully to introduce the uterine sound, I changed this opinion, and came to the conclusion that it was a fibrous tumor growing from the anterior uterine wall. Whichever view be correct, the case equally well illustrates the fact that a uterine ailment may remain quiescent, as far as the production of symptoms is concerned, for an indefinite period, while yet it may be the cause of much suffering, if any accident gives rise to an increased afflux of blood towards the womb.

Bearing in mind, then, their compound origin, we may next inquire into the *nature of the symptoms* that usually accompany versions or flexions of the womb. In the two instances where the misplacement occurred suddenly as the result of over-exertion or straining, much pain was at once experienced, and was referred to the neighborhood of the uterus; while in the case of retroversion there were considerable difficulty in micturition and frequent

[1] This estimate of the ordinarily small importance of simple uterine flexions coincides very closely with the conclusions at which Scanzoni has arrived, and which he holds so decidedly that he prints in large type in the third edition of his book. "Flexions of the uterus are never of much importance, never give rise to serious evils, except when some other affection of the uterine substance is associated with them."—*Op. cit.*, p. 90. The conclusion, too, to which M. Bernutz is conducted by his and M. Goupil's elaborate investigation is, that "uterine deviations, with the exception of descent and prolapsus of the organ, give rise, when uncomplicated, to no kind of functional disorder."—*Op. cit.*, vol. ii, p. 717.

desire to pass water. In other cases, however, the supervention of the symptoms was gradual; discomfort about the pelvis accompanied by unusually profuse, and often unusually painful menstruation, being the symptoms which first excited the patient's notice, and by their persistence and their increase, compelled her to seek for relief.

The following were the more prominent symptoms in the sixty-three cases of version or flexion of the uterus of which, down to the present time, I have preserved a record:

	In the total sixty-three cases.	In twenty of them the uterus was anteverted or anteflexed.
Menorrhagia,	20	3
Dysmenorrhœa,	20	8
Leucorrhœa,	25	8
Pain, or other discomfort in micturition,	21	7
Pain,	51	17
Difficult or painful defecation,	24	3

Of the above sixty-three patients, fifty-eight were married, of whom twelve were sterile. The remaining forty-six, of whom all but one were under forty years of age, had given birth to one hundred and twenty-four children, and had had forty miscarriages; numbers which yield results different but little from those which we meet with among persons afflicted with uterine disease in general; and whose labors amount to 2.7, their miscarriages to 0.47 to a marriage, while one in 8.5 of the total number proves sterile.

The above enumeration of symptoms, and of their comparative frequency, which tallies in the main remarkably with the statements of M. Valleix on the subject, must be sufficient to show that either the misplacement itself, or the state of the uterus associated with it, is adequate to produce much positive suffering and much functional disorder. The pain which was experienced in all but twelve of my cases, and in sixty-four out of sixty-five of those of M. Valleix, varied much in its intensity. It was a constant sense of pain and aching in the back and loins, and of pain shooting down the thighs; often, though not always, accompanied by a sense of bearing down, and by sensations of the same kind as in general attend ordinary descent of the womb, though more distressing in their character. In very many sexual intercourse was attended by great pain, while the suffering it produced had led in some instances to its complete discontinuance. Those patients in whom the abiding pain was the most considerable suffered also from occasional attacks of paroxysmal pain, which was sometimes of extreme intensity, and had the character of hysterical colic such as one meets with occasionally in various uterine ailments, and such as is especially associated with dysmenorrhœa. I have not been able to ascertain that there is any constant relation between the direction in which the womb is flexed and the seat of the pain in the anterior or posterior part of the pelvis, though difficult and

painful defecation appears to be much more frequent in cases where the womb is retroflexed or retroverted than in those where it is turned or bent forwards. I doubt, however, very much the extent to which any of these symptoms can be referred to the mere mechanical effects of the displacement of the womb, for in five out of the fourteen cases in which difficult micturition attended misplacement of the womb backwards, the organ was retroflexed and not retroverted, and consequently the bladder was subjected to no kind of pressure; while, moreover, in thirteen cases of version or flexion of the womb forwards, the bladder was relieved without either pain or difficulty. Pain and difficulty in defecation, too, are by no means such constant attendants upon retroflexion as might be reasonably expected if they depended upon a simply-mechanical cause. The symptom was, indeed, for a long time regarded as of purely mechanical origin, and the presence of mucus in the evacuations was looked upon as conclusive evidence of the irritation of the bowel by the misplaced womb. Further observation has shown, however, that this symptom is by no means constant in cases even of very marked retroflexion; that further, it is often absent in cases where the growth of fibrous tumors from the posterior wall of the uterus exerts very considerable pressure on the bowel, while it is far from uncommon in various uterine ailments attended with much irritation of the neighboring viscera, even though unaccompanied by any enlargement or misplacement of the womb. The same fact holds good still more absolutely with reference to constipation, for the retroflected fundus is never found so to compress the rectum as to interfere with the easy introduction of the finger into the bowel, and consequently cannot mechanically prevent the escape of its contents; while further, no accumulation of fæces is found to take place above the fundus of the womb; and lastly, constipation, even more obstinate than that observed in these cases, attends upon a large number of ailments, especially of an anæmic or hysterical kind, in which there is no local affection of the uterus. The leucorrhœa, the dysmenorrhœa, and the menorrhagia, though of very frequent occurrence, are perhaps less characteristic than the symptoms already enumerated, inasmuch as they are frequent attendants upon so many uterine disorders. It is, however, worth notice that the forty instances of disturbance of the menstrual function occurred in thirty-nine different persons; but I am not prepared to state that there was greater flexion of the womb where the menstruation was most painful than in other cases, or more marked enlargement or apparent congestion of the organ where the menstruation was most profuse.

Lastly, with reference to the influence of these conditions on fecundity. Of the fifty-eight married women one had become a widow, and one had passed the childbearing age, before any symptoms of uterine ailment appeared, while in seven the symptoms were of less than a year's duration, and consequently there

had not been time for the influence of the ailment in this respect to become evident.

Of the remaining forty-nine, six gave birth to live children at the full period, after the womb had been misplaced; and one of this number had five live children at the full term of utero-gestation, in spite of the existence for fifteen years of all the signs of retroflexion of the uterus.

In one of the above six, pregnancy was preceded by the replacement of the organ; but in the other five, not only was the womb misplaced at the time of conception, but was ascertained to continue so after delivery.

Five having previously given birth to living children, miscarried after the development of symptoms of uterine misplacement; and in one of the number miscarriage had twice occurred, and in another eleven times, while twenty-one, having previously given birth to one or more living children, had passed more than a year since the commencement of the symptoms without conceiving. In six of this number, however, though still within the childbearing age, conception had not taken place for from two to five years previous to the commencement of the symptoms of misplacement of the womb.

The above detail of symptoms shows, I think, that while versions and flexions of the womb by no means invariably produce either local suffering or functional disturbance, their presence or absence is yet far from being a matter of indifference, and we must admit them as constituting a distinct class of by no means unimportant ailments of the womb. But even though they were themselves of but little moment, it would nevertheless be very necessary that we should learn to *distinguish them* from other and more serious uterine ailments, with which some of them are, on a superficial examination, very likely to be confounded.

With ordinary care, indeed, any misplacement of the whole uterus, assuming, as it usually does, the form of retroversion, can scarcely be overlooked or mistaken, for the fundus uteri thrown backwards, and often downwards, into the hollow of the sacrum, and the mouth of the womb directed forwards, and tilted upwards against the symphysis of the pubes, are characteristic indications of the change in its position. The sources of fallacy are, however, far more numerous in those cases in which the organ is flexed and its body is bent upon the cervix, producing a tumor which may be mistaken for ovarian disease, or for a fibrous tumor of the uterus, or for one of those extravasations of blood around the substance of the womb, to which, under the name of uterine hæmatocele, attention has of late years been especially directed. In cases where the uterus is bent forwards, the sources of error are less numerous than in cases of its retroflexion, and I am not aware of anything except a fibrous tumor of the anterior uterine wall which is likely to throw uncertainty upon our diagnosis, though I have found the discrimination between flexion of the womb and the presence of a fibrous tumor in its wall to be sometimes so difficult as to be

almost impossible. The tumor formed by a flexion of the womb usually begins immediately above its cervix, and the substance of the organ may be traced passing over into it. At the same time no enlargement of the uterus can be felt by the finger carried in front of the cervix in cases of retroflexion, or behind it in cases of anteflexion, while if the patient lie upon her back, and pressure is made with one hand over the pubes and the other in the vagina, the absence of any pelvic tumor may in general be readily ascertained. Moreover, in many instances, pressure with the finger in the vagina upon the uterine tumor imparts to it a degree of mobility without at all altering the position of the cervix, such as would not be possible in the case of a fibrous outgrowth from the organ. This, however, is not always practicable; for on the one hand, the tenderness of the flexed womb not infrequently prevents any steady pressure upon it being borne by the patient; and on the other, steady and long-continued pressure does not always modify the position of the organ,—and this even though no morbid adhesion connect its fundus with adjacent parts. In a very large number of the doubtful cases we should remain in uncertainty for a very long time, and come at length to a hesitating decision, if it were not for the help afforded us by the uterine sound. If this instrument is introduced with its concavity directed either backwards or forwards, according as the tumor is situated in front of the cervix or behind it, and if it be then gently and carefully turned round, we shall find that the tumor, previously so distinct, will completely disappear, though often to be immediately reproduced with the same character, and of precisely the same size as before, the moment that the instrument is withdrawn. The sound affords at the same time the opportunity of ascertaining the perfect mobility of the uterus, and the absence of any such increase of its weight as the existence of a tumor in its walls must of necessity occasion.

Valuable, however, as is this means of diagnosis, it is yet not without some sources of fallacy, while its employment leads occasionally to no satisfactory results. The instrument will sometimes not pass beyond the internal os uteri; and though pressure upwards against the tumor, so as to lessen the bend of the cervical canal, not infrequently enables us to introduce it, yet this is not always the case; and I need not say that force is never allowable in order to overcome the difficulty. But even in these cases, the absence of any considerable sense of weight when the organ is poised upon the instrument strengthens the presumption against the existence of any uterine tumor. Further, a fibrous tumor projecting into the recto-vaginal pouch may present many of the characters of the retroflected womb, while the fact that such a growth not infrequently flexes the organ, and causes it slightly to deviate from its natural direction, increases the probability of error. If, too, on turning round the sound after its introduction, the handle of the instrument be much depressed, its other end will of course be correspondingly raised, and a uterine tumor being thus carried out

of easy reach of the fingers, may apparently disappear, and the case be thus mistaken for one of simple flexion of the womb. The safeguard against this error is found in the precaution of not otherwise altering the position of the sound, when the instrument is turned round. The existence of adhesions, indeed, prevents any attempt at replacing the flexed womb from being successful, and thus deprives us of one means of diagnosis, though even in such cases the direction in which the sound enters with facility, and the fact that in no direction but that one will it enter at all, are not without value. Ovarian tumors are almost always larger and more spherical than the retroflected fundus uteri, and the finger will in general detect the body of the uterus driven forwards by the tumor, while with the finger of one hand in the vagina, and the other hand over the pubes, the practitioner will in general be able to satisfy himself as to the exact relations of the organ, even though attempts to introduce the sound should not be successful. The same statement also holds good with reference to uterine hæmatocele, and further, the tumor which it produces does not usually present the same degree of resistance as the retroflected uterus. One of the largest uterine hæmatoceles, however, which has ever come under my notice had produced complete retroversion of the organ, and thus rendered diagnosis very difficult. In such a case, and indeed in others where tumors have flexed the womb, or have much altered its position, the risks of error are very great indeed. I do not mean to claim for the sound the advantage of always enabling us to come to a correct conclusion, but only to express my conviction that it is a very valuable help to diagnosis, and that it restricts the doubtful cases within very narrow limits, and enables us in the great majority of instances to express ourselves at once and positively with reference to questions which otherwise would often be very obscure.

Lastly, we come to the consideration of the appropriate *treatment* of these misplacements; a question which has received two different answers, according as practitioners have confined themselves to the endeavor to remove those ailments with which the malposition was associated, and to which the symptoms appeared to be directly due; or, as they have aimed at something more, and have attempted to restore the uterus to its right position, and to maintain it there by mechanical contrivances. Of the continental writers who first called special attention to these misplacements of the womb, Schweighäuser contented himself with the employment of remedies calculated to remove the constipation, and to relieve the congestion of the pelvic viscera, and states, that having accomplished these objects he found that the uterus returned invariably to its proper position; and Schmitt also coincided, in the main, in the same opinion. A view, in many respects similar, has been ably advocated by Dr. Oldham,[1] who regards the misplacement of the womb as being invariably the secondary consequence of its

[1] *Guy's Hospital Reports*, second series, vol. vi.

enlargement, and insists on the special advantages of the use of the bichloride of mercury in removing this condition. Schmitt attempts in his essay to discriminate between cases of primary misplacement of the womb, and those in which its altered position is secondary to some enlargement, or to some inflammatory affection of the organ. He never employs any means for the purpose of replacing the womb so long as either constitutional disturbance or local tenderness of the uterus is present, and recognizes the frequency of spontaneous replacement of the womb after their removal; for accomplishing which he trusts, like Schweighäuser, chiefly to rest, and to the due evacuation of the intestinal canal by the regular administration of saline aperients. If the misplacement should still continue, or if the case was already chronic in character at the time of its coming under treatment, he approves of careful attempts being made to replace the womb. These attempts consist in pressure upon the fundus with the finger in the vagina, or sometimes in the rectum, and he throws out the suggestion that possibly in some instances a contrivance employed by Professor Richter, of Moscow,[1] for replacing the womb retroverted in pregnancy, may be of service. As a subsidiary means tending to promote the replacement of the organ, Schmitt further recommends that the patient should lie upon her side with the hips raised, an attitude to be changed only for that on the abdomen, and that she should carefully avoid lying on the back; recommendations, all of which are much insisted on by many practitioners at the present day, who place their patients on the prone couch in every case of retroversion or retroflexion of the womb. Lastly, whenever the disposition to retroversion of the womb continues in spite of treatment, he employs one of Levret's disk pessaries, made with an aperture sufficiently large to admit of its embracing the neck of the womb; following in this Levret's own directions as laid down in his paper on anteversion of the womb.[2]

This essay of Schmitt's, to which the particulars of nine cases are appended, and which is even at the present day by far the most complete and most valuable contribution to our knowledge of the subject, continued to be the guide of practice in Germany until the publication of Dr. Simpson's ingenious observations. Dr. Simpson not only drew attention in this country and in France to the frequency of these misplacements, which had previously been so much underrated, but he also insisted on their mechanical rectification as the most important means of removing their symptoms, and suggested a novel contrivance both for replacing the womb and for maintaining it in its position.

His first proposal, to replace the womb by means of the uterine sound (an instrument which owes almost all its practical utility to

[1] See Richter's *Synopsis Praxis Medico-Obstetriciæ*, 4to., Mosquæ, 1810, plate ii, p. 70, for a description of this instrument, which was composed of a curved stem of wood, terminated by a kind of plug, which was covered with a cushion, and was intended to answer the purpose of a long and strong finger in replacing the womb.

[2] Already referred to in *Journal de Médecine, etc.*, p. 280.

the alterations which he has made in its form), seems to have been anticipated by Osiander in 1808,[1] who describes the introduction of a slightly curved instrument into the retroverted womb, by turning which round, the fundus uteri was at once restored to its proper position. Osiander's suggestion, however, was disregarded, and his facts were discredited and soon forgotten. Velpeau claims[2] the invention of a pessary with a somewhat elastic stem projecting from the centre of a semicircular disk. The disk being turned forwards in cases of retroversion, and backwards in cases of the opposite kind of misplacement, the tendency of the elastic stem would be gradually to restore the womb to its proper position, and gently to maintain it there. His trials, appear, however, by his own admission, to have been but few, and their results were not encouraging.

Dr. Simpson, believing that in the great majority of instances the symptoms associated with misplacement of the womb, and also the changes which the organ may present, are mainly dependent on its malposition, insists on the reposition of the womb, and on the employment of mechanical means to secure its continuing in its place. He proposes to accomplish the first object by means of the uterine sound, and the second by means of a wire stem introduced into the cavity of the womb, and maintained there by suitable contrivances. This instrument underwent several alterations in Dr. Simpson's hands, and although it has since been modified by the late Professor Kiwisch of Prague, yet Simpson's uterine supporter, with the improvements devised by M. Valleix, of Paris, appears to me to be by far the safest, and the best adapted for its purpose.

Dr. Simpson's paper was not accompanied by any detail of cases, and contained scarcely any hint as to possible dangers or difficulties in the employment of his instrument. The attention of practitioners in this country had been called by him to an ailment, the possible occurrence of which they had previously scarcely recognized, while the simplicity and ingenuity of his proposed means of cure recommended it to almost universal adoption. Some doubts, indeed, were expressed on theoretical grounds, as to the probable result of maintaining a foreign body for weeks or months together in the uterine cavity. These were, however, silenced for a time by the detail of cases by different writers, in which the instrument was worn for a long period, not only without injury, but with very obvious advantage. Still, by degrees, unfavorable results began to be more generally heard of; much uterine pain, almost constant leucorrhœa, associated with a distressing sense of pruritus; menorrhagia, and hemorrhage between the menstrual periods, were found to be of no very rare occurrence. The advocates of the mechanical treatment of these ailments, too, became in time impressed with

[1] *Med. Chir. Zeitung*, 1808, vol. iv, p. 170, as quoted in a note at p. 54 of Schmitt, *op. cit.*

[2] *Lib. cit.* p. 102.

the necessity for greater caution. They not only removed the instrument at the menstrual periods, which at first they were not accustomed to do, but tried to habituate the womb by degrees to its presence, introducing it at first for an hour or an hour and a half at a time, while some even recommended that it should on no occasion be allowed to remain longer than three or four hours within the womb. Inconveniences such as these, the incompleteness of the patient's temporary recovery in some instances, the frequency of her relapse in many more, the occurrence of serious inflammation of the womb, or of dangerous peritonitis, and some instances of death from the use of the instrument, have now led to its almost universal discontinuance.

It is probable that in a few years more the uterine supporter and its uses will have become mere matter of history. It would not, however, be right at present merely to condemn it without at the same time assigning the reasons which appear to have led most practitioners to abandon it.

1st. The safe employment of the instrument requires that, as a general rule, its use should be continued for only a very few hours at a time; a necessity which implies that every woman who is submitted to this mode of treatment shall undergo two vaginal examinations every day, the one for the introduction of the instrument and the other for its withdrawal.

2d. The quietude which its use imposes, and the restriction to which the patient is compelled to submit in order to avoid severe suffering and the risk of serious danger, are at least as absolute in their kind and as irksome to be borne as those which any other mode of treatment involves, while it is necessary to continue them for as long a time.

3d. In spite of all precautions, the treatment is generally painful, often dangerous, sometimes fatal; and the untoward accidents have not been by any means constantly attributable to want of prudence either on the part of the practitioner or of his patient.

4th. Cure, even by the long-continued employment of this means for several months, is uncertain, while relapses are very frequent after the mechanical support is discontinued; besides which the permanent cure of the misplacement is far from being always followed by the cessation of the symptoms.[1]

[1] To meet assertions by mere counter-statement is invidious, and carries no convictions to those whose opinions differ from our own. I will therefore adduce here the testimony of two men whose position and character entitle their opinion to especial weight.

In the discussion before the Academy of Medicine at Paris, M. Dubois stated that he had himself treated more than twenty patients by means of the uterine supporter, which in some instances was worn for several months, but that the misplacement reproduced itself within a very short time after the removal of the instrument; and that he had made a similar observation in the case of many patients who, having been thus treated by M. Valleix and Dr. Simpson, had been dismissed by those gentlemen as cured.

Professor Scanzoni, in a note appended to the fourth edition of Kiwisch's work on the *Diseases of Women*, which he edited after the author's death, makes the following statement:

"The observation of fifty-six cases of flexion of the uterus during the past four

On these accounts, though I have tried the uterine supporter in a few cases, I have now for some time quite given up its employment, and content myself with a mode of treatment, which, though it seems to promise less, yet almost always affords great relief, while in a large number of instances it quite removes the patient's sufferings, and is not infrequently followed by the complete rectification of the position of the womb. I believe, too, that even they who were the most strenuous advocates of the uterine supporter in this country have silently almost renounced its use; and M. Aran[1] states that M. Valleix, who strove with so much ability to introduce it in France, "had towards the close of his life, almost completely abandoned its employment, substituting for it the replacement of the womb with the uterine sound, followed by the introduction of an air pessary either in front of the womb or behind it, according to the direction in which the flexion had taken place."

The principle upon which I act in the management of these cases amounts pretty much to this: that to the best of my power I take care of the general symptoms, and leave the misplacement to take care of itself. In a very large number of instances the misplacement succeeds to delivery or to miscarriage, and the womb is, as might be anticipated, in a state of imperfect involution. In these circumstances rest for a season in bed or on a couch, occasional leeching if there be much tenderness of the organ, and the strictest attention to the condition of the bowels, which should be kept freely open by moderate doses of saline aperients, seldom fail speedily to relieve the congestion of the womb and of the pelvic vessels, and to place the organ in the most favorable condition for the accomplishment of those processes by which its bulk may be reduced. With the approach of each menstrual period, precautions should be redoubled, for menstruation is very often excessive in quantity, and also irregular and over-frequent in its return; anticipating the proper time of its reappearance, and, moreover, after its apparent cessation coming on again causelessly or on the slightest occasion. In proportion as this evil is chronic, may we use more decided means to check it. The sulphuric acid and sulphate of magnesia if the bowels be at all constipated, the sulphate of alum if that condition do not exist, or the gallic acid or infusion of matico, may be given internally, accompanied, if there

years compels me to express my decided conviction that the mechanical treatment of this affection so elaborately set forth by the author is either useless or positively mischievous." After adducing some reasons for this opinion, he concludes: "I will merely add, that since I have quite discontinued leaving the sound in the uterus, employing the uterine supporter, and so on, and have contented myself with the use of cold vaginal injections, with the antiphlogistic treatment of any chronic uterine inflammation, and the application of caustic to any ulceration of the os uteri, and with the endeavor to remove the chlorotic symptoms which are seldom absent, I have been much better satisfied with the results of my treatment than I was at the time when I allowed myself to be seduced into the application of a variety of mechanical contrivances."—*Op. cit.*, vol. i, pp. 135, 136.

[1] *Op. cit.*, 1015.

be much pain, with the tincture of henbane, or of Indian hemp, neither of which has the same tendency as opium to produce constipation. Cold enemata twice a day may be employed after the second or third day of the discharge, and in more obstinate cases, even vaginal injections of matico or alum. I have not, however, ventured upon those intra-uterine injections or cauterizations of the inner surface of the womb which Kiwisch sometimes resorted to, both during the presence of the catamenia and also in the intervals between their flow.

In almost all cases of these ailments, a state of general debility, often of very considerable anæmia, is present, and chalybeate remedies are therefore nearly always of service. As a general rule, there is none more suitable than the combination of iron with an aperient salt, which I recommended to you when speaking of the management of cases of menorrhagia.[1] It is obvious, however, that your prescriptions may here, as in other cases, require to be varied according to the idiosyncrasies of your patient or the peculiarities of her case.

After the general uterine tenderness has been diminished if necessary by previous leeching, recourse may be had with advantage to the cold douche, which both restrains hemorrhage and leucorrhœa, lessens congestion, and tends to bring about contraction of the lax tissues of the enlarged womb. Sometimes, however, the douche occasions pain; and when this is the case, the cold hip-bath, cold sponging of the loins, and cold vaginal injections may be substituted for it, since, though less efficacious, they exert a similar influence.

Pain, referred to one or other ovarian region, and varying in severity much and causelessly, is a very frequent attendant on these malpositions of the womb. It is generally much relieved by counter-irritation, by means either of small blisters not kept on for a sufficiently long time to produce vesication, by the employment of a croton oil liniment, which must be applied by means of a piece of sponge, not rubbed into the part; or by the use, if the skin be very irritable, of the milder liniment of aconite and belladonna.[2]

As in the course of other uterine ailments, so in these, there are occasional attacks of violent paroxysmal pain, which, though not limited in their occurrence to the menstrual periods, are more apt to come on at those times, and sometimes call for immediate relief. The local application of chloroform often gives ease; and the mitigation of suffering which it procures frequently continues. I have, however, in a few instances, known the pain to be more severe and more lasting than the remedy so applied could remove; and when that is the case, its present intensity may be relieved by inhalation of chloroform, and its return prevented or mitigated by the occasional use of opiate enemata, or by the administration of camphor and morphia, or camphor and belladonna, which

[1] See Formula No. 1, p. 46.

[2] See Formula No. 10, p. 121.

last remedy, though somewhat uncertain, is often of very great utility.

But you may inquire whether in these cases I reject not only the use of permanent mechanical supports for the uterus, but also the employment of mechanical means for its replacement? Now, I believe that, with the exception of those rare instances in which the misplacement is the result of some sudden shock or violence, mechanical interference is rarely desirable; and that the womb will of its own accord gradually revert to its proper position, or, continuing misplaced, will cease, when its attendant ailments have been removed, to give rise by its mere misplacement to any inconvenience. While, therefore, I use the sound as a means, and I believe a very valuable means, of diagnosis, I do not resort to that frequent replacement of the organ by it which has been adopted by some practitioners, who yet hesitate to leave any kind of support permanently within the uterus. I do not follow this plan, because, while suffering occasionally remains for a considerable time after the introduction of the instrument, the womb almost invariably falls back again to its previous unnatural position after its withdrawal.

There has been much debate about the use of pessaries in these cases, since, while still employed by some practitioners, they are decried as altogether unserviceable by others, and chiefly by the advocates of the intra-uterine supporter. It must be confessed that they are very imperfect means of support; but, nevertheless, I have seen much relief from their employment in cases of retroflexion and retroversion of the womb. They serve to keep the uterus comparatively fixed in the pelvis, and spare it from many of the painful shocks to which the organ is otherwise almost unavoidably exposed when the patient begins to move about, and especially when she sits. They moreover diminish, in many instances, the painful straining efforts at defecation; a fact which shows how much more that ailment partakes of a neuralgic character than of that of a disorder due to mechanical causes. The kind of pessary which has seemed to me usually most serviceable is one of Indian-rubber, of an oval form, inflated with air, which, being introduced in the cul-de-sac between the uterus and the rectum, serves to support and to keep steady the fundus of the womb. The recent employment of vulcanized Indian-rubber and gutta percha for these purposes, and the various modifications of these instruments which the new materials have rendered possible, may probably lead to the invention of some useful varieties of pessary adapted to the peculiarities of different cases. One of these I must mention, since it acts on a different principle from others, and promises, as far as my limited experience of it at present enables me to judge, to be very serviceable in some cases of retroversion or retroflexion of the womb. The idea of the instrument is, that misplacement of the womb may be corrected by affording support to the vaginal wall, and thus rendering it unyielding. Under the name of the *lever pessary*, it was, I believe,

first suggested by Dr. Hodge of Philadelphia;[1] but a preferable form appears to me to be that devised by my friend Dr. Priestley, and which may be obtained of all instrument-makers. It consists of a frame of gutta percha, of the thickness of an ordinary goose-quill, or a little thicker, about five inches long, twisted into somewhat of a fiddle shape, its upper end about an inch and a half broad, its two limbs approaching till they unite in a sort of button, and the whole instrument having a gentle curve like that of an italic *f*. The instrument is introduced with its broad end in the cul-de-sac between the uterus and rectum; while to the button at the other end, projecting beyond the vulva, are attached four vulcanized Indian-rubber straps, which are fastened to a belt that surrounds the abdomen. These straps, indeed, are by no means constantly necessary; and I have found the pessary, when employed without them, sometimes keep in its position very well, and afford great comfort to the wearer.

LECTURE XIII.

MISPLACEMENTS OF THE UTERUS.

Inversion of the Uterus, generally occurs during labor; sometimes spontaneously; symptoms usually very formidable. Its chronic form; tendency of it to destroy life; occasional exceptions to this rule; alleged spontaneous replacement of uterus. Diagnosis, and management of accident when recent; state of womb modifies chances of replacement, which are very small, except when attempted immediately.

Chronic Inversion, its management; extirpation of uterus; causes modifying success of operation. Errors of diagnosis, how to avoid them; further cautions as to best mode of operating.

Inversion from Polypus. Practical cautions respecting it.

Ascent of Uterus; its various causes and diagnostic value.

Those forms of uterine misplacement to which our attention has hitherto been directed, claimed our notice as much from the frequency of their occurrence as from the importance of their symptoms. We found them to be the occasion of discomfort of various kinds, and not seldom the exciting cause of much disturbance of the uterine functions; but in scarcely any instance were they of themselves dangerous to life, while they moreover always admitted of much palliation, often indeed of complete cure.

We have now, however, to turn to the study of a form of uterine misplacement, which, though, happily of very rare occurrence, is one of the most grievous accidents which can befall a woman, inasmuch as its almost invariable tendency is to destroy life, while the remedy to which alone we can resort in the greater number of cases for its cure is an operation of a most hazardous kind, one

[1] On *Diseases Peculiar to Women*, 8vo., Philadelphia, 1860, p. 330.

which mutilates the patient, and renders her forever incapable of performing the functions of her sex.

Inversion of the uterus, the turning of the organ inside out, is an accident clearly impossible in the natural condition of the unimpregnated womb; it being obviously essential for its occurrence that the organ should have attained a certain size, and that its walls should be comparatively yielding. It is indeed only at an advanced period of pregnancy that these conditions are generally met with, and only during labor that an exciting cause is likely to be superadded capable of producing the misplacement; but at that time violent traction at the funis by some unskilled practitioner, before the detachment of the placenta, may mechanically invert the womb, or the organ may by its own contractions invert itself, just as the intestine does in cases of intussusception. The late Mr. Crosse of Norwich, in his very elaborate *Essay on Inversion of the Uterus*, which unhappily he did not live to complete, states[1] that in 350 out of 400 cases of inverted uterus of which he had found mention, the accident occurred as a consequence of parturition; and there can, I think, be no doubt but that the real proportion of cases in which it is traceable to this cause is much higher than seven to one. Of the remaining fifty cases, forty were said to have occurred in connection with the presence of a polypus in the interior of the womb, the accident sometimes taking place spontaneously, in other instances resulting from traction at the outgrowth in some attempt to accomplish its removal.

Almost all of those rare cases in which the uterus is alleged to have become inverted independently of either of the above causes, are deficient in such details as are needed to substantiate their correctness, and doubt may be reasonably entertained with reference either to the accuracy of the diagnosis, or else as to the truthfulness of the history related by the patient.[2] Enlargement of the uterine cavity, however, associated with some cause capable of exciting contraction of its fibres, may be looked on as the two conditions essential to the inversion of the organ; and where these two coexist, as in Dr. Thatcher's case of enlargement of the womb from hydatids,[3] there the possibility of inversion taking place must be conceded.

No instance has come under my own observation of uterine inversion in the recent state, and indeed the annals of the Dublin Lying-in Hospital and those of the London Maternity Charity sufficiently illustrate the rarity of the accident, since it was not

[1] Part ii, p. 70.

[2] Baudelocque's remarkable case of alleged inversion of the womb in a girl fifteen years old, who suffered from menorrhagia, appears to me to be one in which we may be allowed to entertain some doubt as to the accuracy of the diagnosis; while nothing can be vaguer than the history of Lisfranc's patient (*Clinique Chirurgicale*, vol. iii, p. 380), whose symptoms are said to have existed five years before she came under his observation.

[3] As narrated in Crosse's *Essay*, part i, p. 57.

once met with in a total of more than 140,000 labors.[1] Its *symptoms*, as detailed in works on midwifery, are so appalling and so characteristic, that it would seem almost impossible either to overlook or to misinterpret them. Sudden collapse, accompanying abundant hemorrhage, associated with disappearance of the tumor formed by the uterus in the abdomen, and the presence of a large spherical body either just within the vagina, or projecting beyond the external parts, are the ordinary indications of the womb having been inverted; and the occurrence even of some of these accidents in the third stage of labor, or just after the detachment of the placenta, ought at once to excite the suspicions of the attendant with reference to their almost invariable cause.

In spite of this, however, in a very large proportion of instances in which inversion of the uterus in the chronic state has come under observation, the accident, though clearly traceable to delivery, has been overlooked at the time of its occurrence, and almost the only opportunity of replacing the womb has thus been lost. Three cases of inversion of the uterus in the chronic state have come under my own observation; but in none of them was the condition discovered until some months after the patient's delivery. The history given of herself by one of these patients, who fourteen months after her delivery was admitted under my care into St. Bartholomew's Hospital, was, that the detachment of the placenta, which she believed was effected by the hand, was accompanied by hemorrhage so profuse as to occasion syncope; and she was told by the nurse that the womb was brought down and projected externally, but was apparently replaced by the gentleman in attendance. Nothing further of any consequence transpired for a week from this time, when on sitting up to have a motion the body again projected externally, but was once more replaced by the nurse, since which time it had never again protruded beyond the vulva. In the case of the second patient the placenta was removed by hand; and after a period of insensibility, which lasted for two days, inflammatory symptoms came on, but no circumstance awakened suspicion as to the existence of inversion of the uterus. In the third case the placenta came away spontaneously; the hemorrhage does not appear to have been very profuse; and severe expulsive pain was the most prominent symptom for the first two months after the patient's delivery. In other instances there have been even fewer symptoms to engage attention, and nothing has been observed except some hemorrhage succeeding the spontaneous expulsion of the placenta, until the return and the persistence of the bleeding have led to a vaginal examination and to the discovery of the then almost remediless displacement of the womb. In these cases there can be no doubt but that the uterus has inverted itself, and that this accident has been brought about, not by simple want of contractility of the organ, but by

[1] Hardy and McClintock, *Practical Observations in Midwifery*, p. 223; and Ramsbotham, *Obstetric Medicine*, &c., 3d ed., p. 719.

the irregular and unequal contraction of its different parts; a state of comparative relaxation of the os and cervix coexisting with violent action of its fundus.[1] The only circumstance, indeed, which tends to prevent our receiving this as the ordinary explanation of the occurrence of inversion of the womb during labor, is its not happening in institutions such as the Dublin Lying-in Hospital, in which the last stage of labor is wisely conducted; while spontaneous inversion of the organ would obviously be nearly as liable to happen among patients in a lying-in hospital as elsewhere.

Profound shock to the nervous system and profuse hemorrhage are, as has already been mentioned, the two characteristic symptoms of inversion of the uterus. Dr. Radford has shown, however, that except in cases where the placenta was still partially adherent to the womb, the hemorrhage is by no means so formidable as might beforehand be anticipated, and that the shock to the system is independent to a great degree of the loss of blood. If these immediate dangers are surmounted, the patient's subsequent history seems to be liable to considerable variation with reference to the period at which formidable symptoms reappear, though the symptoms themselves are very uniform in their character. The state of the uterus, too, differs in a way which greatly modifies our prognosis; the organ remaining in some instances comparatively soft and yielding, admitting of being indented by the finger, and consequently allowing of attempts at its replacement being made with a fair prospect of success; while in other cases it becomes at once small and firmly contracted, and bids defiance to every effort to rectify its position. I do not know how to account for these differences in the state of the womb, though their immediate cause must consist in the absence of, or at least in the very imperfect involution of the organ in one case, and the rapid and complete accomplishment of it in another.

Those cases where the uterus remains soft and flaccid, and capable of replacement, are, however, exceptions to the general rule, as might, indeed, be inferred from the rarity of the instances in which, after many days, or even after many hours, the accident has admitted of remedy. In the majority of instances the contraction of the uterus occurs very speedily, and is so firm that the inverted organ has sometimes been mistaken for the head of a second fœtus, while the processes of involution usually go on as completely as in the womb when in its natural position. This

[1] This mode of production of inversion of the womb during labor, first recognized by Saxtorph, *Gesammelte Schriften*, 8vo., Kopenhagen, 1804, p. 301, has been fully and ably set forth by Dr. Radford, *Dublin Journal* for 1837, Nos. 34 and 35; and is now generally received as a frequent, if not the most frequent, mode in which it is brought about. Dr. Simpson, in expressing his adhesion to Dr. Radford's views—see his *Obstetric Works*, vol. i, p. 817—refers to two cases in which inversion of the uterus, with expulsion of the child, took place after the mother's death. Both of the cases are very marvellous. Bœrner's patient, indeed, had reached the full period of pregnancy; but she whose history is very imperfectly recorded by Klaatsch, was only in the fourth month; and the inversion of the womb is alleged to have occurred in the second night after her death. One is at a loss as to the inferences to be drawn from histories so wonderful.

fact is attested by the numerous preparations of chronic inversion of the womb, in which, as in one in the Museum of St. Bartholomew's Hospital, the organ is so small that the opening of the pouch which it forms would not admit anything larger than a quill, while its dense tissue seems at first scarcely compatible with the outpouring of so abundant a discharge of blood as that under which the patient sank.

In many instances hemorrhage has continued to flow at short but uncertain intervals from the moment of the occurrence of the accident, but to this there are occasional exceptions. In one of the cases which came under my observation, a very slight occasional discharge of blood was all that occurred for several months after the patient's delivery; she having suckled her child for thirteen months. At the eleventh month, however, the ovaries resumed their function, and the menses were extremely profuse. On their next return the bleeding was still more abundant, and thirteen months after delivery the flooding was alarming from its quantity, and was intermingled with large coagula, which were discharged without any suffering. Even before the hemorrhage became profuse the patient suffered from ordinary leucorrhœal discharges, which afterwards continued in the intervals of menstruation. By degrees the intervals become shorter, the hemorrhage more profuse, and the leucorrhœal discharge lost its character of a mucous secretion, and became more serous. At last, when well-nigh drained of all her blood, the red color almost completely disappeared from the discharges, and for the last two or three months of her life there was a constant flow of serum, but the positive hemorrhage was very small. A sense of bearing down, and the occasional appearance of the inverted womb externally on walking or any exertion, so long as the patient was able to follow her usual avocations, were her only other symptoms, and, indeed, the only ones which are common in these cases. There are, however, some instances in which the inverted womb, from hanging externally, has been exposed to injury, and become ulcerated; and others in which the violent constriction of the inverted body of the womb by the os uteri has produced gangrene of the organ.[1]

Such being the consequences that follow the inversion of the uterus during labor, it is obvious that they tend of necessity to a fatal issue, and that the question is not so much how, as how soon a case will terminate. Mr. Crosse,[2] whose industry has thrown so much light on many subjects connected with this accident, states, that in seventy-two out of one hundred and nine fatal cases, death took place within a few hours, in eight within a week, and in six more within four weeks. The immediate danger, however, being surmounted, there follows during lactation an interval of comparative safety and of cessation of serious symptoms, which reappear

[1] Several references to this occurrence are given by Crosse, *op. cit.*, part ii, p. 111, Notes 104 and 105.

[2] *Op. cit.*, p. 170.

when suckling is over. It appears that of the remaining twenty-three patients only one died at the fifth month, and then, as the result of an operation which had an unsuccessful issue, one died at eight months, three at nine months, and the others at various periods of from one year to twenty years.

These latter cases of great prolongation of life, in spite of the persistence of inversion of the womb, lead us lastly to notice those rare instances in which life has not only continued for many years, but in which serious symptoms have been altogether absent. Of these the most remarkable history is that recorded by Boivin and Dugés,[1] of a woman who was brought to one of the hospitals at Paris six days after a labor in which her womb had become inverted. Repeated efforts were made by M. Dubois, as well as by Madame Boivin herself, to replace the womb, but without success, and no symptoms being at the time present, the patient returned into the country by diligence on the eighteenth day after her delivery. Nothing more was heard of her till five years afterwards, when she presented herself to Madame Boivin, with her uterus still inverted, though of smaller size than before. Some sense of dragging at the groins, a frequent desire to pass water when she was up and exerting herself, and a discharge of a reddish mucus recurring every fifteen or twenty days and lasting for a few hours, were the only symptoms from which she suffered. She was incommoded, however, by having grown enormously fat, and expressed anxiety at the non-appearance of her menses. Two cases are related by Lisfranc;[2] the one that of a woman who died at the age of seventy years, of inflammation of the lungs; and the other that of a person forty-eight years old, whose only uterine symptoms were slight leucorrhœa, and dragging sensation at the loins, and whose uterus, on her death from enteritis, was also found completely inverted. In neither of these cases, indeed, was there any satisfactory history of the manner in which the accident took place; but the existence of inversion at the examination after death, and the absence of symptoms of it during the lifetime of the patients, are both clearly substantiated.[3]

Stranger still than the above are cases in which the uterus is alleged to have spontaneously replaced itself. The possibility of the spontaneous replacement of a partial inversion of the womb during labor must be admitted, and can even be understood; an occurrence stated by Saxtorph[4] to have taken place in a patient whose uterus he endeavored in vain to replace; and being thus compelled to leave the case to nature, the organ recovered in a few days its natural position. But there are other instances in which spontaneous replacement of the completely inverted womb is stated to have occurred many days, or even months or years, after delivery. It is difficult to know what opinion to form concerning

[1] *Op. cit.*, vol. i, p. 245. [2] *Op. cit.*, vol. ii, pp. 379–383.
[3] References to other similar cases are given by Meissner, *op. cit.*, vol. i, p. 743.
[4] *Gesammelte Schriften*, 8vo., Kopenhagen, 1804, p. 307.

these cases; in some the accuracy of the diagnosis appears very doubtful, and in others the details given are far too meagre to warrant any conclusion with reference to their real nature; while unquestionably no such exceptional occurrences should be allowed to influence our treatment of any case which may come under our care.[1]

Questions of obstetric practice do not fall within the scope of these Lectures. I shall therefore say very little with reference to the management of these misplacements of the womb in their recent state, but shall pass almost at once to the consideration of the *diagnosis and treatment* of the accident in its chronic form.

In the recent state the diagnosis of inversion can seldom be obscure. There are instances, indeed, in which it has been overlooked or mistaken, or in which the inverted uterus has even been torn away under the supposition that it was the placenta; but such errors imply a depth of ignorance and folly, upon which all rules and all experience would alike be wasted. There seem, however, to be cases where, some short time after the detachment of the placenta, the womb has become of its own accord partially inverted, or *depressed* at its fundus, and where, while much depression and some hemorrhage have existed, there has neither been a tumor to be felt per vaginam, nor disappearance of that which the uterus should form in the abdomen. This partial inversion, too, tends to increase, so that the depression of one day may amount (to borrow Mr. Crosse's terminology) to *introversion* on the next day, and to *complete inversion* on the third. I do not know that more is needed to preserve from this error than a knowledge of the possibility of falling into it, and of the consequent necessity of ascertaining in every instance where causeless depression and causeless bleeding follow the last stage of labor, not only that the uterine tumor still remains in the abdomen, but also that it retains its proper size and contour.

When the accident does occur before the detachment of the placenta, the whole weight of evidence is, I think, in favor of removing the placenta before endeavoring to return the womb; and the non-occurrence of serious bleeding in many instances of recent inversion of the womb after the separation of the placenta, strongly corroborates the accuracy of the views as to the source of hemorrhage in labor, which, though so clearly explained by Dr. Simpson, have been much misunderstood and misrepresented.

There is some discrepancy between the directions given by

[1] The most satisfactory of these cases is Dr. Thatcher's, referred to by Mr. Crosse, *op. cit.*, p. 176, note. But in this instance the uterus had resumed its proper position at the end of a month. The case related by Dailliez, *Sur le Renversement de la Matrice*, 8vo., Paris, 1803, p. 33, corresponds much more nearly with one of polypus than of inversion; and of Dr. Meigs's two cases the former is very deficient in detail; while with reference to both there is a long period during which the patients were not under any one's observation—circumstances that must diminish their value. See Meigs's Translation of Colombat, *Diseases of Women*, 8vo., Philadelphia, 1845, p. 182.

different writers for the *replacement of the uterus when inverted* during labor; for while some practitioners recommend the endeavor to indent the fundus of the organ with the fingers, and thus to replace first that part which was first inverted, others advise that the womb should be grasped between the fingers, and that while thus compressed as much as possible, it should be carried up through the os uteri or that part of the womb which represents it, and should be thus restored to its proper position. I imagine that these different rules imply the existence in the one case of the soft and flaccid condition of the womb; in the other, of a state of comparative firmness and contraction; and that according as the former or the latter state is present, the first or second kind of manipulation may be advantageously employed. In the great majority of instances where the uterus has been replaced after the lapse of some considerable time, this lax state of the uterus, which must greatly facilitate the endeavor, appears to have still persisted. Thus in a case related by Dr. Borggreve, and referred to by Kiwisch,[1] continued pressure by means of a long pessary, fastened externally with a T bandage, reduced the uterus in three days; its employment having been commenced on the fourth day after delivery. A similar contrivance was successful in Dr. Smart's case,[2] the uterus having already been inverted three weeks when it was first employed. Dr. White, of Buffalo, U. S.,[3] reduced the uterus on the seventh day, and Dr. Mendenhall[4] on the sixteenth day after delivery, by manipulations assisted by the employment of a large rectum bougie, the patient in both instances being partially under the influence of chloroform. Dr. White's patient, however, died from the effects of the previous hemorrhage. In Dr. Belcombe's case[5] the womb was found twelve weeks after delivery a large spherical pouch; and in Dr. Miller's patient,[6] at the end of three months, it likewise admitted readily the introduction of two fingers into its cavity. Such, too, must have been the state of the womb in the two cases[7] (if we admit them as not too wonderful for credence) in which a fall upon the nates at once replaced the womb, though inverted in the one case for six months, and in the other for eight years.

Until very recently, the replacement of the uterus after long inversion, and when it had already shrunk to small dimensions, was regarded almost as an impossibility; and of the few instances of its alleged accomplishment, some, at least, were of doubtful authenticity. Dr. White, of Buffalo, however, emboldened by his success in reducing the uterus on the seventh day after delivery, as I have already mentioned, repeated the same manipulations with an

[1] *Op. cit.*, vol. i, p. 251, from *Med. Zeitung*, 1841, No. xxiii.
[2] *American Journal of Med. Science*, 1835, vol. xvi, 81.
[3] *Ibid.*, July, 1858, p. 13. [4] *Cincinnati Lancet*, July, 1859, p. 393.
[5] *Medical Gazette*, 1841, vol. vii, p. 783.
[6] *Ed. Monthly Journal*, Dec. 1851.
[7] Reported by Dailliez, *Observations*, 33 and 34, pp. 105 and 107. The second and more remarkable of the two cases was observed by Baudelocque himself.

equally good result in another instance where the inversion had existed for six months.[1] Dr. Barrier[2] succeeded in its reduction at the end of fifteen months, and Dr. White[3] has published another case in which he replaced the uterus at the end of fifteen years, though the patient died of peritonitis sixteen days afterwards. In all of these instances the patients were put under the influence of chloroform, but the efforts at replacing the womb were made continuously by the hand, aided by the pressure of a large bougie. For these somewhat violent proceedings, Dr. Tyler Smith substituted, with great ingenuity, a gentler method, which in his hands proved quite successful, he having by its means replaced the inverted uterus after an interval of nearly twelve years.[4] He adopted the plan of keeping up constant pressure by means of an air pessary in the vagina, while in addition twice a day, for ten minutes at a time, efforts were made by the hand to restore the organ to its proper position. In the course of a few days the os uteri, previously very small and rigid, seemed to be a little more dilated, and a little yielding. No very great change, however, seemed to have been brought about until the eighth or ninth day, when after a night of considerable uterine pain it was found on the ensuing morning that the inversion had completely disappeared. The organ showed no disposition to become again misplaced, though as a matter of precaution an air pessary was worn for some time. The previously profuse hemorrhages ceased, menstruation became regular, and the patient some months afterwards was in perfect health.

This ingenious plan was not long without its imitators. By its means Mr. P. Teale, Jr., of Leeds, succeeded in the course of three days in the replacement of a uterus which had been inverted for two years and a half;[5] I replaced the organ in four days after it had been inverted for nearly twelve months;[6] and M. Bockenthal[7] in seven days, after an inversion of six years' duration. M. Bockenthal discarded all manipulations, and confined himself to keeping up continuous pressure by means of the air pessary, a course which had struck me too, as likely to answer as well as its combination with efforts at manual replacement, and which opinion Mr. Teale, in a letter with which he favored me on the subject, told me that he also shared.

It is disappointing, however, to know that this proceeding can neither be counted on as invariably successful, nor even be regarded as always free from danger. M. Aran[8] tried and abandoned it, not only on account of the pessary becoming displaced (an inconvenience that could be avoided by mounting it as I did on a

[1] *Loc. cit.*, p. 17. [2] *Archives Gén. de Médecine*, May, 1852, p. 100.
[3] *American Journal*, Jan., 1859, p. 282.
[4] This case was related by Dr. Tyler Smith, at a meeting of the Medico-Chirurgical Society, on April 14th, 1858, and is published in vol. xli of the *Transactions*, p. 183.
[5] *Medical Times*, August 20, 1859. [6] *Ibid.*, October 29, 1859.
[7] *Zeitschr. f. Geburtskunde*, vol. xv, p. 313.
[8] *Op. cit.*, p. 917. The success of M. Nöggerath, of New York (*Zeitschr. für Geburtsk.*, vol. xx, p. 200) in replacing the uterus after thirteen years of inversion

stem, and connecting it with a firm band which passed round the abdomen), but also because the presence of the instrument in the vagina produced abdominal pain, shivering, and febrile symptoms. In the second case, too, in which I attempted to replace the uterus seven and a half months after delivery, although I abstained from all manipulations with the hands, the pressure of the instrument continued for twelve days, while it failed to replace the womb, gave rise to peritonitis, of which the patient died four days after the pessary had been removed. The instrument had produced complete dilatation of the os uteri, but had had no influence on its fundus, the uterine tissue at the point of inversion being hard and puckered, so that the little finger could with difficulty be pressed into the cul-de-sac formed by it. The hope, therefore, which at first was entertained, of avoiding by this means all recourse to hazardous operations in cases of chronic inversion of the uterus, does not seem likely to be fully realized.

The observation of cases in which now and then women had survived the tearing away of the uterus by some ignorant persons during labor; the occasional occurrence of instances where the inverted uterus had sloughed away, and the patient had recovered from the accident, and the overbold surgery of the sixteenth and seventeenth centuries, to which alike the facts and fables of Rousset[1] largely contributed, had familiarized practitioners with the idea of extirpating the uterus when irreducibly prolapsed or inverted. It was not, however, until the end of the last century, that the removal of the inverted uterus began to be admitted as one of the legitimate operations of surgery, and that the questions of its indications, and of the best mode of its performance, were carefully considered.

In the majority of instances, the indications for the removal of the inverted uterus have been furnished by profuse hemorrhage and discharge, exhausting the patient's strength and threatening her life; though in a few instances, as in that where Mr. Chevalier[2] removed the organ, the operation was not called for by actual danger to the patient's life, but by the extreme discomfort which was produced by the tumor hanging between the patient's thighs, and being thus exposed to all kinds of external injury. The uterus has besides been removed in a few instances, either immediately

by manipulation with the hand alone, would seem to be a further proof of what other observations render probable, that the varying condition of the uterus itself has at least as much to do with the success or the failure of attempts at its replacement as the peculiar mode of proceeding resorted to.

[1] *Fœtus Vivi ex Matre Cæsura*, &c., 8vo., Basileæ, 1592. *Sectio Quarta*, pp. 100–108.

[2] Reported by Dr. Merriman, in his *Synopsis of Difficult Parturition*, 4th ed., London, 1826, 8vo., p. 306. I may observe that the last reported case of extirpation of the inverted uterus of many years' standing and externally prolapsed, reported by Dr. Geddings, of Charleston, in America, at p. 211 of vol. xxi of Ranking's *Retrospect*, warrants great doubts as to its having been an inverted uterus at all. The mass removed was solid, and with no trace of a cavity. I have not included it in the cases which I have referred to. I have, however, included Baxter's case, *Med. Physical Journal*, vol. xxv, p. 210, though the objections which apply to it are nearly, if not quite, as cogent.

on delivery, or within a few days afterwards; but with the exception of one instance[1] in which the organ had already passed into a state of gangrene, the operation at this early period has been due either to ignorance, or at least to errors in diagnosis, and has been always dangerous, and usually fatal.

If we confine our attention for the present to cases where the inversion of the uterus succeeded to parturition, we shall find that forty-two out of fifty-nine cases of extirpation of the womb had a favorable result; fifteen issued in the patient's death: and in two, though the patient survived, yet it was found necessary to abandon the operation.[2]

The following table shows the results obtained by the different modes of performing the operation:

		Recovered.	Died.	Operation abandoned.
Uterus removed by ligature in	45	33	10	2
" " knife or ecraseur, . .	5	3	2	
" " { knife or ecraseur and ligature, . . . }	9	6	3	
	59	42	15	2

The number of instances in which the ligature was employed, is so much greater than of those in which any other operative proceeding was had recourse to, as to preclude any fair comparison of their results, and I am unable to contribute anything from my

[1] Faivre, *Journal de Médecine*, August, 1786, p. 201.

[2] References to thirty-six of the above cases are given in Mr. Gregory Forbes's excellent paper on Inversion of the Uterus in vol. xxxv of the *Medico-Chirurgical Transactions*. The remainder are:

Bernhard, *Lucina*, vol. i, p. 401.

Staub, *Schweizer, Zeitschr. f. Natur und Heilkunde*, vol. iii, No. 1.

Kuttler, *Oester. Jahrb.*, vol. xi, No. 1.

Portal, *Il Filiatre Sebezio*, Feb., 1841.

Michalowsky, *Journal de la Soc. de Méd. de Montpellier*, Mai, 1845.

Hublier, *Bulletin de l'Academie de Médecine*, 1848, No. 41.

The above references to cases, all of which were successful, are given by Breslau, in his dissertation, *De totius uteri extirpatione*, 4to., Monachii, 1852.

Besides this, there are successful, and not mentioned by Forbes or Breslau:

Harrison, *London Med. Gazette*, April, 1840, p. 151.

Thatcher, related by Crosse, *op. cit.*, p. 57. The inversion took place in this case after the expulsion of a mass of uterine hydatids.

Teale, *Med. Times and Gazette*, Sept. 1, 1855.

Oldham, *Guy's Hosp. Reports*, 3d Series, vol. i, p. 171.

Two cases by Dr. Putnam, and three by Dr. Channing, mentioned by Dr. C. A. Lee in *American Med. Journal*, Oct., 1860, p. 313.

Dr. McClintock, *Clinical Memoirs on Diseases of Women*, 8vo., Dublin, 1863, p. 85.

There are, besides, seven unsuccessful cases in addition to those referred to by Mr. Forbes, namely:

Symonds, *Medical Gazette*, Nov., 1830.

Meerholdt, in Salomon's dissertation, *De uteri inversione*, &c., Dorpat, 1836, referred to by Breslau, p. 40, No. 49, in his table.

Coates, *Association Medical Journal*, July, 1855.

Covelier, *Presse Médicale*, and Schmidt, *Jahrbücher*, July, 1852, p. 182.

Dr. Putnam, referred to by Dr. C. Lee, *loc. cit.*

Dr. Channing, *ibid.*

Aran, *op. cit.*, p. 914.

own experience towards a solution of the question. It may, however, be worth notice that in one only of the five cases of excision of the uterus did any considerable bleeding occur; in one of the instances which terminated fatally, death was occasioned by peritonitis alone; in the other, in spite of the employment of the ecraseur, abundant hemorrhage into the abdominal cavity was the occasion of the peritonitis under which the patient sank. The dread of hemorrhage which so long deterred practitioners from excising polypi, has been learned by experience to be in great measure an exaggerated fear; while the risk of inflammation of the womb from the inclusion of some of its fibres within the ligature has been found to be very real. It is deserving of consideration whether, when the inversion is of long standing, the uterus small and firmly contracted, and the diameter of the peritoneal pouch consequently scarcely larger than a crowquill, while the sensibility of the serous membrane has been lessened by the long-continued change in its relations, the risk attending the excision would not be smaller than that associated with the ligature of the uterus. The employment of the ecraseur would probably be preferable to the application of the ligature, or it might be resorted to, as in Dr. McClintock's case, after the previous employment of the ligature. The fact that the ecraseur is not an absolute safeguard against hemorrhage does not negative its employment, but merely suggests the necessity for much care, and for working the instrument extremely slow.

As might be anticipated, the result of the operation is to a very considerable extent modified by the period at which it is undertaken. If performed soon after delivery, while the womb is still comparatively large and vascular, and its sensibilities acute, the prospects of success are smaller than if the misplacement had become a chronic evil before any kind of interference was resorted to.

Table showing the period after delivery at which the inverted uterus was extirpated in fifty-five cases.

	Patients recovered.	Patients died.	Total.
Under 1 month,	4	3	7
Between 1 and 2 months,	3	...	3
" 2 — 6 "	3	3	6
" 6 — 12 "	2	4	6
" 12 — 18 "	10	2	12
" 18 — 2 years,	1	...	1
" 2 — 3 "	5	...	5
" 3 — 4 "	2	...	2
" 4 — 5 "	4	...	4
" 5 — 6 "	2	...	2
" 6 — 7 "	2	...	2
After 12 years,	1	...	1
" 14 "	...	1	1
" 15 "	...	1	1
" many "	2	...	2
	41	14	55

It is perhaps deserving of mention, that in one of the cases where the operation was successfully performed within a month after the patient's delivery, the uterus was in a state of gangrene, and that in two others it lay beyond the external parts, a position which I need not remind you, considerably lessens its sensibility. The remaining case was one in which the operation was performed by an ignorant midwife with a razor, and is an illustration of the wonderful power of repair, even of most fearful injuries, which nature exerts occasionally, rather than an example that can serve for our guidance in practice.

In some of the fatal cases put on record, and probably also in others which have not been published, inversion of the uterus has been mistaken for polypus, and the error has only been discovered after the supervention of formidable symptoms of peritoneal inflammation, or after the death of the patient. It hence becomes a matter of considerable importance to ascertain the nature of the case before any operation is attempted, lest it should unexpectedly appear that the ailment, instead of being one the removal of which is attended but by moderate risk, is in reality one whose cure is unavoidably accompanied by most imminent hazard.

A want of caution on the part of the practitioner is obvious in most instances of inverted uterus, in which an error of diagnosis has been committed. But still *the diagnosis* has now and then been rendered extremely difficult by the firm contraction of the os uteri around the inverted body of the womb, which is thereby compressed so as to resemble the pedicle of a growth proceeding from within the uterine cavity, and thus closely to simulate a polypus. The history of the patient in such a case, even if accurately ascertained, is not absolutely conclusive, inasmuch as uterine polypus may complicate pregnancy, and may both give rise to hemorrhage after delivery, and also to a tumor, felt on vaginal examination. The comparative sensibility of a polypus and of the inverted womb does not furnish any trustworthy criterion; for the sensibility of that organ is in many instances very low, and was so in all the cases that came under my observation; while it may further be added, that there is no such difference between the appearance of the tumors as can be relied on in forming a decision.

Mr. Arnott suggested to me some years ago a means of distinguishing between the two, which appears quite worthy of being borne in mind. Let the finger be introduced into the rectum, and carried up as high as possible. On turning it round, if the uterus be inverted, the finger will have been carried above it, and will easily ascertain the absence of the organ from its natural situation in the pelvis. If, on the other hand, the vaginal tumor is a polypus, the uterus will probably be found enlarged, and at any rate occupying its proper position. The uterine sound furnishes us with another valuable aid in doubtful cases. If a polypus is present, the uterine cavity will be found enlarged, so that the sound will pass further than natural, and a sense of weight will

also, most likely, be experienced; and by these two means of examination combined, I believe that in all cases of inverted uterus after labor, an erroneous diagnosis may be avoided.

It now remains for me to offer a few suggestions with reference to the only means by which the almost inevitable results of irreducible inversion of the womb can with certainty be obviated; and these consist, as you know, in the *extirpation of the organ*, either by the knife or the ligature. It is almost superfluous to say that, inasmuch as there are some few instances on record in which inversion of the womb has not been followed by the serious results to which it usually gives rise, so nothing but most obvious danger to the patient's life will justify the performance of an operation so hazardous as the extirpation of the womb. But further, the occurrence of severe hemorrhage, and the apprehension of its increase at each return, will not suffice to render an operation expedient within a few months after delivery, since the chances of the patient's recovery appear to increase in proportion as the accident is of long standing. Since also in some instances in which the function of the ovaries has been kept in abeyance by lactation, but little loss of blood has occurred for several months after delivery, it would seem desirable that every woman suffering from irreducible inversion of the uterus should be encouraged to suckle her child, in order that time might be gained for the occurrence of as complete an involution of the uterus as possible before its removal is attempted. When the frequency of the return of the hemorrhage, or the abundance of the losses of blood, has shown the necessity of interference, it yet is not desirable to select the time when hemorrhage is going on for the operation, inasmuch as such times usually correspond with a menstrual period, and the uterine sensibility is generally greatest at those seasons. In spite of the general propriety of this rule, however, it may be borne in mind that if hemorrhage at any such period should threaten life, and should not be restrained by styptics or by the plug, a ligature may be applied as a temporary expedient with great probability of the loss of blood being thereby restrained,[1] even though the ligature should be removed some hours afterwards.

In the use of the ligature something seems to depend on the kind of material employed. Both silk and whipcord appear to irritate considerably; and Dr. Johnson, of Dublin, who has had greater success in this operation than any one else, prefers a ligature of well-annealed silver wire and dentist's silk twisted together, as being more readily loosened if too tight, and as causing less irritation than ligatures of other kinds. It has sometimes been attempted to obviate the risk of inflammation by applying the ligature at first so tightly around the inverted womb as at once and completely to strangulate it. This proceeding, however, whilst it

[1] This result occurred in Dr. Johnson's second case, with the effect of checking the bleeding, five weeks before the organ was actually extirpated. See his paper in vol. iii of *Dublin Hospital Reports*.

causes intense suffering, does not appear to have the desired effect; and a preferable plan seems to be that of applying the ligature comparatively loose, and of tightening it gradually day by day as the patient is able to bear it. The great prostration and severe pain which usually attend the first application of the ligature would probably be obviated in great measure by the administration of chloroform; the subsequent supervention of inflammatory symptoms seems to require the immediate slackening of the ligature, and may necessitate its complete removal. After the ligature has about half effected the division of the part, there appears to be no sort of objection to the completion of the operation by the knife or scissors; but the double operation of applying a tight ligature, and immediately excising the womb, does not seem to be as safe a proceeding as either the ligature or the knife alone. I have already expressed my opinion, however, that the substitution of the ecraseur for the knife, and its employment after the previous application of the ligature, will be found, as Dr. McClintock's cases would lead one to believe, to be the safest mode of proceeding.

A few words must still be said about those cases in which the *presence of a polypus in the cavity of the womb* has led to the inversion of the organ; an accident which, though probably not rarer, has yet been less frequently noticed than the inversion of the womb after labor. The large size of the outgrowth, the presence of more tumors than one, together with the origin of the polypus from the fundus of the womb, are the conditions which have been met with in the majority of instances where this accident has happened. These, however, are by no means of constant occurrence; for a very small tumor has sufficed to invert the womb,[1] while the insertion of the pedicle of the polypus into the fundus of the uterus is common to the greater number of these growths; and the large size of the tumor or the presence of several tumors, is by no means unusual, without any disposition to inversion of the womb. The accident seems to have taken place with polypi of all descriptions; with soft, malignant, or pseudo-malignant tumors, as well as with those of a fibrous texture, or which might be supposed to be actual outgrowths of uterine tissue; and I am not aware that in any instance the observation has been made of any peculiar relation subsisting between the substance of the womb and that of the tumor. In most of the instances, I believe, in which any definite history has been given of the patient's previous condition, violent expulsive pains are stated to have preceded the inversion of the womb. I need scarcely say, however, that violent expulsive efforts are too frequent a concomitant of the escape of a polypus into the vagina to have much diagnostic value; while in a remarkable case that came under my

[1] Of which a remarkable illustration is given by Mr. Crosse, *op. cit.*, p. 47 and plate viii, from a preparation in the Museum of the Royal College of Surgeons in Dublin; the tumor which had produced complete inversion of the womb very little exceeding a chestnut in size.

own observation, the escape of the polypus, and the inversion of the womb took place at a time when the previously severe pain had almost completely subsided.

In other respects, the symptoms attendant upon inversion of the uterus complicating polypus present nothing at all peculiar—leucorrhœa, menorrhagia, and exhausting hemorrhages occurring in cases of ordinary fibrous tumor or polypus as frequently, and to as great extent, while the womb retains its proper position, as when the organ is inverted.

In a practical point of view, that which it behooves us to bear in mind is, *first*, the possibility of this accident occurring in any case of polypus growing from the cavity of the womb, and the especial reason for suspecting it when any considerable or long-continued expulsive efforts have preceded the escape of the polypus into the vagina: *second*, the expediency, before tying or excising any polypus, which either is very large, or the development of which has been accompanied by such symptoms, of ascertaining by means of the sound the exact dimensions of the uterine cavity, that we may not unwittingly divide or tie the substance of the womb instead of the pedicle of the tumor. If it be ascertained that the womb is inverted, I should imagine the proper course would be to excise the polypus sufficiently low down to avoid all risk of seriously wounding the uterus, and then to endeavor to replace the organ: an attempt the impracticability of which seems to have not infrequently been assumed on insufficient grounds, and which was accomplished in my own case with the greatest facility.

Lastly, it must be borne in mind that the uterus may be inverted by the tractions made at a polypus in the endeavor to drag it down sufficiently low for its excision. I do not think, indeed, that there is much risk of this in the case of polypi of ordinary size; but the cases related by M. Amussat, and one which occurred still more recently in the practice of Mr. Johnson, of Norwich,[1] show that when the tumor is of considerable size this accident is very likely to occur.

A word or two, before concluding this Lecture, may be added concerning a form of uterine misplacement of no practical moment, except as sometimes helping to throw light on the nature of a patient's ailments, otherwise perhaps obscure. The ancients conceived, as probably you know, that the peculiar sensation of choking, the *globus hystericus*, from which women often suffer, was due to a positive *ascent of the womb* from its natural situation in the pelvis. In order to expedite its return to its proper place, they were accustomed, by a quaint combination of reward and punishment, to employ aromatic fumigations to the vulva, while fetid gums and other ill-savored medicines were given by the mouth. This practice, with many other absurdities of bygone days, is exploded, but a vestige of the theory still remains behind,

[1] See Crosse, *op. cit.*, p. 52.

for it is alleged by some continental writers[1] that contractions of the uterine ligaments, or as some say of the peritoneum, raise the womb from its proper situation, and thus supply a positive mechanical cause for the unpleasant sensations about the pelvis, of which hysterical patients frequently complain. For my own part, I neither admit the explanation, nor do I believe the fact. It is also said that the greater difficulty with which the os uteri is reached in the aged than during the years of sexual vigor, and the narrowing of the upper part of the vagina which is then observed, are due to an actual elevation of the organ in advancing years. This, however, again appears to me in the highest degree problematical. We know that the uterus wastes; that the projection of the cervix into the vagina also disappears from the same cause; that the vagina, too, becomes atrophied, and that if the uterus, owing to the weakening of its supports, do not sink down, and so distend the vagina, the calibre of that canal will become much narrower than it was before. I am quite at a loss to understand what causes operating in old age can tend really to raise the uterus higher than it was before; nor, in fact, am I convinced that such an elevation of the organ actually takes place.

But, though ascent of the womb does not call for notice as a condition of itself producing any definite symptoms, it is yet of importance to bear in mind the different circumstances in which we are likely to find the organ occupying a higher situation than usual.

1st. It is a physiological attendant upon pregnancy, from about the fourth to the eighth month, is especially marked in first pregnancies, is sometimes so considerable as to render it a matter of extreme difficulty to reach the os uteri. With moderate attention, however, to the patient's history, and consideration of all the circumstances of her case, the peculiarities presented by the pregnant os uteri will seldom fail to keep the practitioner from error.

2d. When any considerable degree of pelvic contraction exists, the want of space often obliges both the uterus and bladder to remain above the pelvic brim, a circumstance to which much of the difficulty of the operation of craniotomy is frequently due.

3d. In cases of inflammation of the pelvic cellular tissue, or of that between the folds of the broad ligament, the uterus is often found very high up, so that its orifice is reached with difficulty. This change in the position of the organ, too, is not necessarily due to the formation of a tumor lower down in the pelvic cavity, forcing it above its natural situation, though it may of course be produced in that way; but it may depend on a positive dragging of the womb upwards by the inflamed tissues.

4th. In a large number of instances of ovarian dropsy, the cyst, as it rises out of the pelvis, draws the uterus with it, sometimes even considerably above its natural position. In cases where a

[1] Busch, *Geschlechtsleben des Weibes*, vol. iii, p. 473.

question arises as to whether an accumulation of fluid in the abdominal cavity is due to ascites or to ovarian dropsy, the relations of the uterus often assist us in arriving at a correct conclusion, for the organ which is usually drawn upwards in ovarian dropsy is generally depressed below its ordinary situation in cases of ascites. More frequently it happens that doubt is entertained as to the nature of a non-fluctuating tumor, concerning which it is uncertain whether it is uterine or ovarian. Any considerable elevation of the uterus is much more frequently due to degeneration of the ovary than to tumor of the womb.

5th, and lastly. In a few instances, fibrous tumors of the uterus as they increase in size raise the organ more and more out of reach. Nothing, indeed, is more common in cases where the uterus is the seat of several fibrous tumors, some of which have attained to a considerable size, than to find the organ so much deformed that the os becomes situated high up behind one or other side of the ramus of the pubis. But besides those cases in which the firm irregular outgrowths felt per vaginam leave no room for uncertainty, there are a few exceptional instances in which a single fibrous tumor in the uterine wall, without producing any deformity of the organ appreciable per vaginam, raises it in the progress of its development high out of the pelvic cavity. In this process, however, the greatly elongated cervix uteri scarcely participates in the growth of the body of the organ, but becomes mechanically stretched till it attains sometimes the length of several inches.[1] As a result of this the lips of the os uteri become extremely thin, or disappear almost entirely, leaving the os a funnel-shaped entrance with almost membranous margins to the elongated and narrow cervical canal. When drawn upwards by the enlarged ovary, the traction is exercised on the body, not on the neck of the womb, and hence no change is produced in the character of the lips or os uteri.

With these hints, not without their use perhaps in the diagnosis of uterine affections, we may take leave of the subject of malpositions of the womb, and must at the next Lecture commence the study of another and most important class of its diseases.

[1] As in the very remarkable case described and delineated by Professor Walter, of Dorpat, in which the cervix was two inches and three quarters long, and scarcely any indication of the uterine lips was perceptible. See p. 10, of his Essay *Ueber Fibröse Körper der Gebärmutter*, 4to., Dorpat, 1852.

LECTURE XIV.

UTERINE TUMORS AND OUTGROWTHS.

Their occurrence connected with tendency of uterus to hypertrophy generally.
Outgrowths of the mucous membrane, or MUCOUS POLYPI; their simplest form. FIBRO-CELLULAR POLYPI. GLANDULAR POLYPI from hypertrophy of uterine follicles.
Cystic enlargement of follicles of cervix, or MUCOUS CYSTS OF THE UTERUS.
Symptoms of these affections: nature and source of the hemorrhage they occasion. Diagnosis. Treatment.
FIBRINOUS POLYPUS, its nature; analogy to other chronic effusions of blood. Note on some other alleged varieties of polypus.

IN the course of the foregoing Lectures I have referred over and over again, with an iteration that can scarcely have failed of being wearisome, to the ready increase of the womb under the influence of very various exciting causes. We have seen that inflammation going on to the production of its ordinary consequences—suppuration, or the effusion of lymph—is of very rare occurrence. Abscess of the womb is one of those accidents so uncommon, that when met with it seldom fails to be recorded among what the old writers used to term CURIOSA MEDICA; and the effusion of lymph into the tissue of the organ has been assumed in accordance with certain physiological or pathological hypotheses rather than actually demonstrated.

It is indeed scarcely ever, except after labor or miscarriage, when the tissue of the womb passes physiologically through changes such as those which inflammation tends to work, that the diseased process manifests itself in its acute forms, or with dangerous severity, while, even then, the serous investment of the organ, or the lining membrane of its veins, is generally the part which shows marks of the most serious mischief. Often, too, the signs of inflammation appearing at these times, turn out to be symptomatic less of affection of the womb itself than of its appendages or of the cellular tissue in its vicinity, or connecting together the different pelvic viscera. At the same time, however, we find that the causes which elsewhere might issue in inflammation produce in the case of the womb its overgrowth. It increases from that frequent afflux of blood towards it which produces many forms of menstrual disorder; it remains permanently increased from deficient involution after labor; it enlarges, if flexed or misplaced, and its prolapsus causes it in many instances to attain to more than double its ordinary size.

But not only is hypertrophy of the womb more frequent than the hypertrophy of any other organ, but each of its component tissues is liable to a similar overgrowth—not regular indeed, and equable, but in parts, here and there, constituting tumors and outgrowths, which are met with in this oftener than in any other

part, and of which frequency the physiological peculiarities of the womb furnish the only explanation. The mucous membrane of the uterine cavity undergoes, as we have already seen, an occasional hypertrophy in some menstrual disorders, but becomes eventually cast off in accordance with the laws which regulate its development in a state of health and under the influence of pregnancy. But the mucous membrane of the cervix also sometimes becomes hypertrophied, and such hypertrophies are not deciduous, but assume the form either of a distinct fold at the orifice of the womb,[1] or more frequently of distinct small pendulous outgrowths. Now and then, the admixture of a larger quantity of cellular tissue than usual gives to these growths a more considerable size than they attain to when composed exclusively of mucous membrane. Sometimes the same process of overgrowth affects the cellular structure of the neck of the womb, and then a peculiar form of outgrowth is produced, termed the glandular or cellular polypus of the cervix uteri. If one of these follicles alone increases at the expense of the others, and without a corresponding hypertrophy of the cellular structure or mucous membrane, there are then produced those cysts of the neck of the womb whose nature and origin were once so little understood. Lastly, if the same process involves the uterine substance itself, we then meet with the so-called fibrous tumors of the womb, which, identical with it in their intimate structure, differ only in this, that they are not developed in accordance with the general contour of the organ in which they arise; but, springing from various centres, grow with no symmetry towards its outer or its inner surface, and produce symptoms which vary according to their seat and the vigor of their growth.

With reference to these and other varieties of growths from the womb, it is not altogether without importance to observe that the time of their appearance is just that at which all the physiological changes in the organ go on with the greatest activity, and that they are rarely met with either in the season of decrepitude or of early youth. The same fact, too, holds good to a great extent with reference to another great class of ailments of the uterus; those, namely, of a malignant character. These, also, occur chiefly in the season of sexual activity, and seem to be connected, as in the case of the female breast, with the wide fluctuations in growth and in activity which succeed each other in those parts within very brief intervals.

Having thus thrown out a suggestion that may perhaps explain in some degree the singular liability of the womb to various tumors and outgrowths, I propose to examine each kind in succession, beginning with those of simplest character, namely outgrowths

[1] As well delineated by Dr. Tyler Smith in pl. ix of his Essay in the *Med. Chir. Transactions*, vol. xxxv.

from the uterine mucous membrane; the *mucous polypi* of most writers on the diseases of women.[1]

These generally appear as small outgrowths from the folds of the so-called *arbor vitæ*, varying from a third to half an inch in length by about three lines in thickness; the pedicle by which they are connected with the mucous membrane being generally exceedingly slender, though at the same time very short. It would seem as if they were originally duplicatures of the mucous membrane, of equal thickness throughout, and as if the gradual constriction of their pedicle were the process by which nature gets rid of them, just by the same means as those by which the loose cartilages in the knee-joint are by degrees detached from their connection with the synovial membrane whence they originally sprang. They are usually of a bright rose tint, abundantly supplied with a delicate network of vessels, and consist exclusively of mucous membrane with a very small admixture of cellular tissue. The seat of these little bodies is nearly always the cervical canal, from any part of which they may arise, though they are usually nearer the external than the internal os uteri, and now and then I have found a single growth of this kind in the uterine cavity, but quite at its lower part. Though generally pediculated, as just now described, they are now and then sessile, of a flatter form, and adherent along the whole of one of their surfaces to the mucous membrane. Occasionally, too, they do not assume the form of distinct outgrowths, but appear like hypertrophied folds of the arbor vitæ, bearing the same relation to the walls of the cervix as the attached carneæ columnæ do to the parietes of the heart.

Sometimes these growths are solitary, but it is at least as frequent for two or three of them to be found in the same patient; they have a disposition also to be reproduced; or at least successive growths form, so that it is not unusual for a patient from whom they have once been removed to require a repetition of the operation after the lapse of a few months. I have known them coexist with fibrous tumors of the uterus, but do not imagine that this was the result of more than a mere coincidence, and have never seen reason for regarding them as the precursors of malignant disease, though the late Dr. Montgomery, of Dublin,[2] believed this to be not infrequently so in the aged.

Those outgrowths, which are simple excrescences from the mucous membrane, never exceed the very small dimensions which I have just specified. Sometimes, however, a larger quantity of cellular tissue enters into their composition, and they then acquire a much larger size, and hang down beyond the os uteri into the vagina. They are often the size of a small fig, of a flattened form, and are found to be made up of *fibro-cellular tissue*, having an in-

[1] The *papillary* polypi of Hirsch, whose Essay *Ueber die Histologie und Formen der Uterus-Polypen*, 8vo., Giessen, 1855, is a valuable contribution to this department of morbid anatomy.

[2] In a very valuable paper on "Polypus of the Uterus" in the *Dublin Journal of Medical Science* for August, 1846.

vestment of mucous membrane, while they do not proceed exclusively from the cervix, but have their origin also sometimes within the cavity of the womb.

More frequent than these are *polypi of a more complex structure*, into the formation of which there enter not merely the mucous membrane of the uterus or its hypertrophied fibro-cellular tissue, but also the large mucous follicles of the cervix. These polypi assume different forms, being sometimes pediculated, and the pedicle is occasionally of considerable length; at other times they appear as continuous outgrowths from the inner surface of one or other uterine lip, most commonly, I think, of the anterior. On dividing them, their most striking peculiarity is at once seen, for they are found to contain a large quantity of tenacious, transparent, albuminous matter, precisely similar to that which is secreted by the Nabothian glands. Sometimes, when the growth is still small, vesicles varying from the size of a pea to that of a kidney-bean, filled with this albuminous matter, compose the great bulk of the tumor, their walls still partially transparent, but readily distinguishable beneath the delicate mucous membrane with which the whole is invested. In other instances, however, and generally whenever the bigness of the growth exceeds the size of the first joint of the thumb, the vesicles are not so distinct, though the structure is equally characteristic. In the midst of the succulent fibro-cellular tissue which enters into the composition of the tumor, there are numerous canals, whose walls are of a denser structure, arranged longitudinally, side by side, some of them communicating with each other towards the pedicle, but not by any cross branches. These canals are all directed towards the surface of the tumor, where some of them terminate in blind pouches. Others end in openings mostly of an oval form, and invariably smaller than the calibre of the tube itself. Their length is not quite uniform, and hence it results that the tumor has a peculiar, uneven, almost lobulated surface, closely resembling in this respect the appearance of an hypertrophied tonsil. They are filled with the same albuminous matter as in the smaller outgrowths is contained in the vesicles I mentioned, and the origin of both appears to be the same, namely, the mucous follicles of the neck of the womb. The long pedicle with which these growths are sometimes furnished[1] does not contain any of the hypertrophied follicles, but is composed entirely of fibro-cellular tissue. Usually, however, the pedicle is very short, and the point of origin of the growth low down in the cervical canal. Though freely supplied with vessels, these growths do not in general present any considerable vascularity of the surface, which may be stated on the authority of Virchow,[2] to be composed of very dense cellular tissue, covered by a thick layer of tessellated epithelium.

[1] See Boivin et Dugès, *Maladies de l'Uterus*, &c., Atlas, pl. xvii, fig. 2, and pl. xix, fig. 2.

[2] In the *Archiv. fur Pathol. Anatomie und Physiologie*, vol. vii, 1854, p. 164, and plate ii, figs. 5 and 6. A very good description of the general characters of this

Lastly, in connection with this class of ailments, may be mentioned the occasional *enlargement of the follicles of the cervix uteri*, unconnected with any outgrowth of its proper tissue, or any hypertrophy of its mucous membrane, but assuming the form of *cysts*, whose development takes place at the expense of the uterine substance. Sometimes, too, though I believe not in the majority of cases, these cysts or vesicles are altogether *new* formations; and are not produced by the mere enlargement of occluded follicles. Such, at least, is the conclusion which the examination of their structure by the microscope leads us to adopt. In examining the uterus after death, it is by no means unusual to observe several vesicles of the size of a pea imbedded between the folds of the arbor vitæ, but scarcely, if at all, projecting beyond the level of the mucous membrane. This size, however, may be greatly exceeded. In the uterus of a woman, aged twenty-nine years, which presented no other appearance of disease, all the Nabothian glands were much enlarged, and the whole cervical canal was filled with their secretion; while at the upper part of the cervix uteri was one of these cysts as large as a kidney bean, distended with albuminous matter, and having by its increase produced the absorption of almost the whole of the uterine wall, which was scarcely a line in thickness. The cyst had produced a degree of bulging outwardly of the attenuated uterine wall, such as must have been obvious during life, and by which I believe that, on one or two occasions, I have recognized this affection, which might, but for other symptoms, be taken for a solid tumor of the neck of the womb.[1]

Though I have met with many more cases in practice, yet I have preserved notes of only twenty-three instances of these varieties of uterine polypi, a circumstance readily explicable by the speedy and complete removal of the ailment by a very slight and simple operation. Of the twenty-three cases, five occurred in single, eighteen in married women, of whom twelve had given birth to children at the full period, one had aborted several times, and five had never been pregnant. The age of the youngest patient was twenty-three, that of the oldest fifty-seven; and the average age of all was forty years. The *symptoms* which induced the patients to seek for medical aid had existed for periods varying from three months to four years; and were in every instance very similar in kind, though varying greatly in degree. Either leucorrhœal discharge, or hemorrhage, or both existed; to which bearing-down pains were sometimes, though by no means constantly, superadded.

Once or twice I have accidentally discovered small polypi in

kind of polypus and a diagram of its structure were given by Dr. Oldham in *Guy's Hospital Reports*, 2d series, vol. ii. It has also been well described by Huguier in the *Mémoires de la Société de Chirurgie de Paris*, vol. i, 1847, p. 35.

[1] An extremely elaborate paper on this subject, with several illustrative drawings, has been published by M. Huguier, in the first volume of the *Mémoires de la Société de Chirurgie*, pp. 241–295, and plates i–iii. The other portions of this Essay will call for notice hereafter.

cases where they had produced no symptoms whatever. This, however, is unusual, for hemorrhage is very generally present, though its amount seems to be in great measure dependent on the relation the polypi bear to the cervical canal; being usually much more considerable if the growth is inclosed within the lips of the os uteri, than if it projects beyond them and hangs down into the vagina. This, indeed, is what might be expected beforehand, and it serves to explain the history which patients occasionally relate of themselves, that the hemorrhage which at one time had been profuse has at length greatly diminished, or even altogether ceased. The influence of these small polypi in producing uterine irritation is sometimes exemplified by their giving rise to considerable enlargement of the neck of the womb, and a degree of hardness consequent on engorgement of the part from the considerable afflux of blood thither; a condition that may lead the practitioner, unless on his guard, to overlook the real nature of the ailment, and to suppose that he has to do with hypertrophy and induration the result of some bygone inflammation of the neck of the womb. This same fact also explains why it is that a comparatively large polypus hanging down into the vagina may be unaccompanied with bleeding, while an extremely small outgrowth still included within the neck of the womb may occasion very formidable hemorrhage.

These simple facts point, I believe, to the solution of a much mooted question as to the source of the hemorrhage in these and other varieties of uterine polypi and tumors. The growths are themselves well supplied with vessels; if wounded they bleed; if excised, the hemorrhage which takes place from their pedicle is sometimes considerable, has even been known to prove dangerous; but yet all evidence goes to prove that it is rather from the womb itself than from the outgrowth that the principal bleeding flows, and that the hemorrhage is proportionate, less to the size of the outgrowth than to the intimacy of the relation between it and the womb. Of this I saw some years ago a very remarkable exemplification. A woman came under my care who for three years had suffered from very profuse hemorrhages, which had ceased without known cause for three months before I saw her. The non-appearance of the menses for the same period did not engage my attention as it ought to have done; and I accordingly excised a fibrous polypus the size of a small hen's egg, which grew by a short pedicle from the inside of the cervix uteri. Very profuse bleeding followed the operation, but no other untoward symptom; and within six months more the patient was confined at the full term of pregnancy. I do not relate the case now for the sake of the moral to be drawn from it with reference to the absolute necessity of care in your diagnosis, though in this respect it comments on itself, but because it illustrates exceedingly well the source whence the most abundant hemorrhage flows. For three years the polypus had irritated the womb, and blood had been abundantly poured out. Pregnancy took place, there was increased flow of blood towards the part;

the polypus must have gained rather than lost in vascularity, but no bleeding occurred. The uterine cavity was now lined with decidua, and its cervical canal was occupied by the mucous plug poured out from the Nabothian glands, and thus sheltered from irritation, the hemorrhage from its surface ceased, and leucorrhœa alone continued the evidence of the presence of the tumor.

The structure of the polypus has, however, something to do with the nature of the symptoms, with the occurrence, and still more with the amount of the hemorrhage. Those polypi which present the compound structure due to enlargement of the Nabothian glands, are always attended by profuse leucorrhœa, a circumstance easily explicable if we bear in mind that the formation of the outgrowth is associated with a state of hypertrophy and over-activity of the whole secreting apparatus of the neck of the womb. Their vascularity being less than that of the small mucous polypi, they are also more frequently unaccompanied with bleeding, while, as might be expected, the hemorrhage is usually absent when they assume the form of outgrowths from the inner surface of one or other uterine lip, since in that case the cervical canal escapes almost entirely from direct irritation.

I do not know whether these growths have any special influence unfavorable to conception, though there is no doubt but that the very nature of the symptoms to which they give rise is of a kind to lessen the probabilities of a woman becoming pregnant. I once excised a polypus, composed of enlarged Nabothian glands, of the size of a sugared almond, from the anterior lip of the uterus of a young woman who had lived for more than eighteen months in sterile marriage, but who became pregnant within a month afterwards, and was delivered of a living child at the full period. Here, however, the relations of the tumor were such as mechanically to narrow, and almost to occlude the uterine orifice.

The enlargement of one or more of the follicles of the cervix, so as to form distinct cysts in the uterine substance, is of rare occurrence. In the few instances of it which have come under my observation, a profuse albuminous discharge, unchecked by treatment, or even by the free application of the nitrate of silver within the cervical canal, has been invariably present. On one or two occasions I have felt at the upper part of the cervix a small nodule which might readily be taken for a small fibrous tumor, but which may be known by its yielding slightly on firm pressure, and by its size not being invariably the same at different times. I have not found these cysts associated with menorrhagia, though that symptom was present in some of the cases related in M. Huguier's essay on this affection.

I do not know of any special difficulty attending the *diagnosis* of these outgrowths, nor of any particular rules which can be laid down for the avoidance of error. The very small polypi are sometimes scarcely perceptible by the finger, and I have already referred to the enlargement of the cervix which they occasionally produce, and which is likely to mislead the unwary. The only rule that

can be given for practical guidance, is, however, this: that in no case of long-continued menorrhagia should we be content with mere digital examination, but should invariably employ the speculum; and further, if no satisfactory conclusion be thereby arrived at, we should dilate the os uteri with sponge tents, in order that the cervical canal may be brought within reach both of examination with the finger and with the speculum. If these precautions be neglected, the patient whom we have failed to relieve may place herself under some more careful practitioner, who will at once detect the cause of her symptoms, and cure her by an extremely simple operation.

For the most part, nothing is more easy than the *removal of these small outgrowths.* The smallest may be removed by laying hold of them with a pair of long forceps, and twisting them off, while those which are somewhat larger, after being twisted to check the risk of bleeding, may be cut off with a pair of scissors. The bivalve speculum should always be employed in doing this, and both forceps and scissors are made for the purpose, so constructed as to be readily worked within the speculum. To attempt their removal by means of forceps or scissors simply guided by the hand, is at best but a bungling mode of proceeding, while besides, the risk of hemorrhage is much greater than it would be if, after the removal of the polypus, the part whence it sprang were touched with the solid nitrate of silver, a precaution which I now never omit. Sir C. Locock[1] has described a sort of long gouge, which he has contrived, with much ingenuity, for the removal of small polypi of the cervix uteri; but these bodies, often so small as to be scarcely distinguishable by the finger, are also far too movable to be readily detached by any instrument introduced, as this must be, pretty much at a venture, and I have found it, on trial, practically useless. In the case of the sessile outgrowths, which I spoke of as occasionally resembling, in their relations to the uterine walls, those of the carneæ columnæ to the heart, I have applied the acid nitrate of mercury by means of the speculum, and by this proceeding destroyed the outgrowths, and arrested the bleeding.

In the case of the larger growths, made up either of fibro-cellular tissue, or of hypertrophied uterine follicles, I also employ the speculum if practicable. If the outgrowth be too large to come readily within the blades of the speculum, while its structure is too frail or its pedicle too thin to allow of its being seized and drawn down by means of the Museux hooks, I employ a pair of forceps similar to those used by surgeons for operations on the tongue, with rackwork at the handles to insure the firm closure of the instrument. In all operations of this kind it is a great convenience to have the forceps or hooks made with a lock like that of the midwifery forceps, by which means each blade may be introduced separately, may be carried higher up along the pedicle of the growth, and made to seize it more firmly than can

[1] *Medico-Chirurgical Transactions*, vol. xxxi, p. 171.

be done if the blades are united, and have to be separated after their introduction into the vagina. The polypus being laid hold of by this instrument, a pair of curved, blunt-pointed scissors may easily be carried up to divide the pedicle, while any hemorrhage that may follow will usually be checked with ease by the application of nitrate of silver through the speculum, and by the subsequent introduction of a piece of cotton-wool soaked in the tincture of matico, and which may be easily withdrawn after a few hours by a thread previously fastened to it.

The question of the comparative merits of the ligature and of excision can scarcely be raised with reference to these small polypi, since the latter proceeding is so simple and easy, and with due care is not attended by any serious risk of hemorrhage. The forcible *avulsion* of polypi is a rough and hazardous proceeding, a relic of barbarous surgery; while their strangulation by means of peculiar constructed forceps[1] appears to me to be possessed of no advantage over the use of the ligature.

Slight as in most cases the operation for the removal of these outgrowths is, it is yet a matter of prudence to keep our patient in bed for one or two days after its performance. On the only occasion in which I neglected this precaution, and allowed a woman from whom I had removed a small vascular polypus in the out-patient room to return home, an attack of peritonitis came on which necessitated her reception into the hospital, where, however, the disease speedily yielded to appropriate remedies.

Since I became acquainted with the essay of M. Huguier, I have not met with any of those enormous cystic enlargements of the uterine follicles whose nature was described a short time since. I applied, in the few instances which had come under my notice, the solid nitrate of silver abundantly within the cervical canal, but with scarcely any benefit. M. Huguier, however, has adopted, and with marked success, the simple plan of scarifying the interior of the neck of the womb previously to applying the caustic, by which means the cysts are emptied of their albuminous contents, and the caustic comes to act immediately upon their secreting membrane.

Allied to these outgrowths in many of the symptoms to which they give rise, though differing in their essential characters, are those accumulations of blood within the uterine cavity where it undergoes certain changes and a kind of imperfect organization, which have received the name of *fibrinous polypi*. The late Professor Kiwisch,[2] who was, to the best of my knowledge, the first

[1] A proceeding first suggested by Sir Charles Bell, in his *Principles of Operative Surgery*, and renewed with some modifications recently by M. Gensoul, of Lyons, in a pamphlet entitled *Nouveau procédé pour operer les Polypes de Matrice*, Lyons, 8vo., 1851.

[2] In the first edition of his *Klinische Vörtrage*, &c., published in 1849, vol. i, p. 420, § 222. He made no addition to the account there given in the subsequent editions of his book. Four years before the appearance of his observations a very characteristic case of this occurrence was published by M. Lebert, under the name of *Tumeur Fibrineuse de l' Uterus*, at p. 90, of vol. ii, of his *Physiologie Pathologique*.

person to give a complete description of this affection, admits the comparative unsuitability of the epithet, which may, however, be conveniently retained for the present. In certain conditions, independent, as he believes, of impregnation, consequent, as others think, upon previous abortion, the walls of the uterus may be so soft and yielding as to allow of the gradual accumulation of effused blood in the cavity of the organ. In the course of time the clot may not only pass through changes that remove the coloring matter from its exterior,—which assumes a dirty white or grayish aspect, while portions of a dark red hue are still to be found within, but may also be the seat of the same kind of imperfect organization as has been observed in the case of hemorrhages into the arachnoid, or of blood effused in other situations.[1] Like cardiac polypi, so these become firmly adherent to the walls of the cavity within which they form; and the late Franz Kilian, of Mayence, found one whose constituent fibrine was in various stages of fibrillization, while its surface had received a partial investment of tessellated epithelium, which he believed to be due to the advanced organization of the outer layer of fibrine.[2]

The very nature of the organ within which these collections form is unfavorable to that more complete organization taking place in them which may occur in similar effusions in other parts. After the lapse of a few months at the latest, the uterus becomes irritated by the presence of the clot, hemorrhage takes place, the organ contracts, and the mass is at length expelled with symptoms almost identical with those of an abortion.

The question, as I just now mentioned, has been raised, as to whether this fibrinous polypus forms independent of the previous enlargement of the uterus by abortion or delivery at the full period. Kiwisch believed that it does; and alleged as characteristic of it that the chief accumulation of blood takes place not within the body of the womb, but in the dilated cervical canal. This statement, however, is controverted by his worthy successor, Professor Scanzoni;[3] and the fact that the patients in whom the accident occurred were in every instance married women, and that in all the menses had been suppressed for a period of from six weeks to three months previous to the outburst of the hemorrhage, favors the suspicion that conception had taken place, and that the bleeding was at first but the evidence of abortion. In this view, too, Virchow[4] coincides, and states that on a post-mortem examination he has invariably found the base of the swelling formed either by actual remains of the fœtal placenta, or by the adhesion of coagula

In this case the expulsion of the mass took place six weeks after a miscarriage; and for some time previous both the pain and the hemorrhage which had accompanied the miscarriage had altogether ceased.

[1] On which subject see Paget's *Lectures on Surgical Pathology*, vol. i, pp. 173–175.

[2] Henle and Pfeuffer's *Zeitschrift*, vol. vii, 1849, p. 149.

[3] *Verhandlungen der Phys. Med. Gesellschaft in Würzburg*, vol. ii, p. 30; and in his *Lehrbuch der Krankheiten der Weiblichen Sexualorgane*, 8vo., 3d ed., Wien, 1863, p. 265.

[4] *Die Krankhaften Geschwülste*, 8vo., Berlin, 1863, vol. i, p. 149.

from the torn vessels to the uneven surface of the maternal placenta, so that the question of the origin of these polypi may be considered as decided.

The external os uteri, indeed, closes so speedily after the occurrence of abortion in the early months of pregnancy, that there is no difficulty in understanding how blood may slowly collect within the cavity of the organ, and, coagulating, remain there till by its bulk it excites the contraction of the womb. The presence even of a very minute portion of the ovum greatly favors this occurrence, and I have known pain and hemorrhage continue for six weeks in one instance, for four months in another, after the supposed completion of an abortion, till at length a portion of decidua, or, at least, of a substance resembling it, was expelled; with the discharge of which the hemorrhage and all the symptoms disappeared.

Be the conditions under which the hemorrhage occurs what they may, the object of all treatment would be the same,—namely, to empty the uterus by exciting its action, and afterwards to maintain the contracted state of the organ. For this purpose the removal of any coagulum that is within reach of the fingers, the administration of the ergot of rye, the local application of cold, and the injection of the uterine cavity, are the means to which we should obviously have recourse. Kiwisch was accustomed always to employ cold water; but in cases of this description I have been accustomed to use it tepid, and have found it excite sufficiently energetic uterine contractions, without producing that great shock which I have sometimes seen follow the injection of perfectly cold water into the cavity of the unimpregnated womb.[1]

[1] There is a peculiar form of uterine polypus, of which Dr. R. Lee gives a delineation in plate ix, fig. i, of his beautiful, though unfortunately incomplete, *Practical Observations on Diseases of the Uterus*, folio, 1849, part ii. He terms it a *fibro-cystic* tumor; but his account of its structure is too meagre to enable one to determine its real nature. Dr. Oldham, in his paper already referred to, gives a sketch of a similar growth, and suggests its probable source in some peculiar alteration or hypertrophy of the uterine glands, a view which quite accords with that of Hirsch, who describes several specimens of this kind of outgrowth, for which he suggests (*loc. cit.*, p. 61) the name of the Decidual-polypus of the body of the uterus.

LECTURE XV.

UTERINE TUMORS AND OUTGROWTHS.

Fibrous Tumors;—their general characters, varying seat, and identity of microscopic structure. Influence of these growths upon the uterus, and causes which modify it. Their number and size. Changes which they undergo, and nature's efforts to get rid of them;—their disintegration, their calcareous transformation.

Frequency of these growths;—influence of age on their production.

Symptoms: disorders of menstruation, hemorrhage, pain, sterility, and miscarriage; their comparative frequency. Mode of access of the symptoms.

General sketch of symptoms of fibrous tumors.

We are now about to enter on an examination of one of the most important ailments of the uterus; one which is frequent in its occurrence, serious in its results, and but little amenable to treatment. It is, moreover, characterized by much uncertainty in its rate of progress, which, sometimes rapid, is at other times very slow, while still more rarely, the disease is almost or altogether cured by nature, who either eliminates the morbid structure from the organ whence it sprang, or effects changes in it such as completely stop its growth, and render it quite harmless.

The *fibrous tumor* of the uterus (for this name seems to me the most appropriate among the many designations which it has received) is a growth more or less intimately connected with the uterine walls, with which its structure is almost identical. It is seldom solitary, but several tumors are usually found to be present at the same time, though one or two generally outstrip the others in the rapidity of their development, the rate of which, as well as the nature of the symptoms, are greatly influenced by the situation that they occupy.

Whatever is the situation or size of one of these tumors, it is characterized by a spherical form and a firm texture, though its surface is sometimes nodulated, as if from the aggregation together of several tumors, and the firm texture is occasionally interrupted by irregular spaces or cavities containing fluid, while many minor differences exist in the degree of firmness, elasticity, or succulence of different specimens. On a section being made of any of these tumors, they present great similarity to each other, being composed of a dense grayish structure, intersected by numerous dead-white bands and lines which are almost invariably arranged according to a definite type or plan. In some instances these fibres have a concentric arrangement, while in others they have a wavy distribution, or are disposed around several different centres. Tumors of the first kind are usually remarkable for their hardness and their small degree of vascularity; they are also contained within a remarkably distinct fibro-cellular investment, are imbedded in the uterine substance, and seldom attain a size exceeding that of a shelled walnut.

The other varieties are more vascular, less firm, have a less complete capsule, may occupy all parts of the exterior or interior of the womb, and may grow to a very large size, so as to weigh twenty, forty, or even seventy pounds. Moreover, it happens sometimes that in the course of their development two or more tumors coalesce, at least apparently, so as to form a large growth, though on a section it will be seen that the different growths remain distinct from each other, separated by fibro-cellular septa, the remains of the more complete investment by which, when smaller, each was surrounded. Lastly, they sometimes assume the form of distinct outgrowths from the uterine substance; the fibres of the womb not merely passing over the tumor at some parts, or even over the whole of its surface, but actually growing into and being continuous with it. This last form is, I believe, observed only in the case of some fibrous tumors growing into the cavity of the womb, and constituting polypi.

None of these differences, however, are accompanied by important modifications in the essential structure of these growths. They are all made up of fibres resembling those of very dense cellular tissue, or of tendinous substance, or of elastic tissue, presenting various degrees of completeness of development, and intermingled with cytoblasts and a granular substance, the abundance of which is usually in inverse proportion to the perfection of the fibrous element of the growth. In almost every instance there are present also some of the broad unstriped muscular fibres of the uterine tissue, and these sometimes enter very largely into the composition of the tumors; while, where this is not the case, the uterine tissue nevertheless is intermingled with the pedicle of those growths which project into the cavity of the womb, and furnishes them with a partial investment, often, indeed, with a complete covering.[1] When to this we add, that though the degree of vascularity of these tumors varies widely in different instances, there is nothing at all peculiar in the arrangement of their vessels, and further, that, like the tissue from whence they spring, they admit of being resolved into gelatine by boiling, we have mentioned everything of moment concerning their composition and their structure.

There are several different situations from any or all of which these growths may proceed, and it is not very unusual to meet with illustrations of all in the same uterus. Sometimes they are developed immediately beneath the peritoneum which covers the uterus, or the first half-inch or inch of the ovarian ligament or of the Fallopian tubes. Such perfectly superficial growths are generally limited to the fundus or upper part of the body of the uterus, are more frequent on its posterior than on its anterior surface, and for the most part remain of a very small size, scarcely exceeding

[1] The first careful microscopic examination of these growths was made by Valentin. See his *Repertorium*, 1843, p. 10. In Walter's *Dissertation*, already referred to, are the results of the microscopic examination of five different specimens, by Professer Bidder, § 20, pp. 37–41; and lastly, the results of some other examinations are given by Paget, *op. cit.*, vol. ii, pp. 135, 136.

the bigness of a large pea or of a kidney bean, and seldom project so far as to form more than the half of a much-flattened sphere. In other instances, they proceed from the thickness of the uterine wall, and may then either grow outwards towards the peritoneum, or inwards towards the cavity of the womb, though the former is by far the more frequent occurrence, and is so doubtless for the obvious reason that in that direction the tumor encounters the least resistance to its growth. Such tumors sometimes attain the size of a goose's egg, of a large pear, or even a greater bulk, and are connected with the uterus by a thick pedicle into which uterine fibres enter, though, unlike the tumors that grow towards the cavity of the womb, they do not receive an investment from its substance. The tumors that thus grow outwardly from the uterine walls are often present in considerable number, as may be seen, for instance, in a preparation in the Museum of St. Bartholomew's Hospital, where twelve of these growths may be counted projecting from the surface of the womb, though its interior is quite free from disease. When they grow internally, they are sometimes positive outgrowths of the uterine tissue, while even when this is not the case, their relations to the womb are generally very intimate.[1] They receive an investment of uterine tissue, and are often much more abundantly supplied with blood than any other varieties of these growths; points, all of which are of very great practical moment, modifying the patient's symptoms, and influencing also our conduct. Whatever be their point of origin, these growths usually tend, as they increase in size, to become distinctly pediculated. To this, however, there are occasional exceptions. The firm, very slightly vascular tumor, with concentric arrangement of its fibres, remains imbedded in the uterine substance and covered by its investment of cellular membrane, without any disposition to project into the interior, or to protrude at the exterior of the organ. In some cases, too, the more vascular variety of fibrous tumor, with a very elastic and very succulent tissue, becomes developed in the thickness of one or other uterine wall, attaining the size of the fœtal head, or even a greater bulk, and producing very great enlargement of the uterus, but retaining its spherical form, and continuing imbedded in the substance of the organ rather than projecting from it in either direction.[2]

The influence which these growths exert upon the uterus varies to a very remarkable extent, but is in proportion to the intimacy of the relation between the tumor and the womb, rather than to the mere size to which the tumor itself attains. When situated external to the womb, and growing into the peritoneal cavity, the

[1] The Museum of St. Bartholomew's Hospital contains two specimens illustrating exceedingly well the difference between the outgrowth and the tumor, for which purpose they are diagrammatized by Mr. Paget, *op. cit.*, vol. ii, p. 131, figs. 11 and 12.

[2] A condition admirably represented in Wenzel, *Krankheiten des Uterus*, folio, Mainz, 1816, plates vii and viii, x and xi.

tumor often acquires an enormous size, and the womb is, as might be expected, much elongated, and strangely deformed; but nevertheless is not in general much increased in bulk. On the other hand, the development of a single tumor within the substance of the womb brings about an increase of its size, a thickening of its walls, and a development of its tissue very similar to those which take place during pregnancy. Of this fact a preparation in the Museum of St. Bartholomew's Hospital affords a very remarkable illustration. Imbedded in the anterior wall of the uterus is a fibrous tumor, no larger than an unshelled almond, and of such slight vascularity that the injection which has deeply colored the parietes of the womb has not entered the vessels of the tumor. This small growth, however, has so stimulated the uterus that it has grown to a length of five inches, and its walls are at least an inch and a quarter thick. In like manner, the growths which project into the uterine cavity bring with them a remarkable increase of the womb, and this not due to the mere distension of the organ by the substance contained within its cavity, but to the actual growth of its tissue and unfolding of its muscularity, such as takes place in pregnancy, and even in those rare cases where the development of the ovum goes on external to the womb itself. In these cases, however, the womb, after a certain period, contracts upon and expels the tumor or polypus from its cavity, or the tumor passes out of it quietly and imperceptibly, with which occurrence the further increase of the organ not only comes to a standstill, but its size diminishes, so that not infrequently a large polypus may be found connected with a uterus whose dimensions fall below the natural standard. Hence it is that the instances in which the womb acquires the largest size are not those in which the tumor hangs down by a pedicle into its cavity, but those in which its development takes place into the substance of one or other uterine wall; and the organ thus increased in bulk sometimes attains the size of a child's head; and its cavity as measured by the uterine sound, may be found to equal four, five, or six inches in length.

It is a matter rather of idle curiosity than of practical utility to determine the number of these growths that may exist in any one uterus, or the size to which they may attain.[1] They are seldom solitary, sometimes they are very numerous; and they are usually present in the greatest number on the peritoneal surface of the womb, while it is rare to find more than one projecting at the same time into the cavity of the organ. This, however, is probably due to the circumstance that there is not room for more than one tumor at a time within the cavity of the womb, for it is not a very uncommon thing, some months after the removal of one growth, to find another occupying the same situation, producing

[1] Walter's *Dissertation*, already quoted, §§ 11 and 12, and pp. 27–30; and Meissner, *op. cit.*, vol. ii, pp. 16–19, contain references to the most remarkable cases of large or numerous fibrous tumors.

the same symptoms, and calling once more for a recourse to the same operation.

With reference to the size of these growths, we encounter wide differences again in this respect, instances being on record of their attaining to such dimensions as to weigh even eighty pounds; and the weight of the growth in the remarkable case delineated by Walter was seventy-four pounds.[1] These unquestionably are quite exceptional instances, but they are worth bearing in mind, as showing that in a diagnostic point of view the mere size of the tumor is not to be relied on in discriminating between growths from the uterus and those proceeding from the ovary.

There are very few ailments in the course of which nature does not make some efforts, often, indeed, imperfect and unsuccessful efforts, at cure. In the case of fibrous tumors, there are five different modes in which this attempt is made. Either the pedicle undergoes a process of gradual attenuation, and then gives way, the tumor thus becoming detached from the uterus; or more rarely, a portion of its investment becomes ulcerated or dies, and the growth gradually shells out from the sheath of cellular membrane which contained it; or a change takes place in its substance, the exact nature of which is not quite understood, it becomes disintegrated, dies, and is got rid of piecemeal; or a different change occurs, similar to what we see in other morbid products,—the tumor undergoes the cretaceous transformation, and though not eliminated from the womb, it ceases to stand in any vital relation to it, and the symptoms which it once produced diminish, or altogether disappear.

Nothing can be simpler than the processes by which these tumors, when growing within the uterine cavity, may become detached from their connections and eventually expelled, though my own experience does not lead me to believe that any of them are of frequent occurrence. It may happen, however, either that the pedicle, by constant traction of the growth, becomes thinner and thinner, till at length it gives way, or that the margins of the os uteri, tightly constricting, strangulate it, or that in its violent expulsive efforts, the uterus snaps the slender stalk of the out-

[1] *Op. cit.* Though in this case the whole tumor was of solid texture, still in some instances the enormous dimensions of these growths have been due to cyst formation, and the accumulation of a large quantity of fluid in their interior. This fluid has sometimes amounted to many pints, and the distinct fluctuation to which it gave rise has led to the disease being taken for ovarian dropsy, and to the patient being tapped for its relief. No instance of it has come under my own observation; but the impression left on my mind, by reading the various recorded cases of it, is, that the disease is essentially different from ordinary fibrous tumor, since, in addition to one or two cysts of very great size, a number of small cysts seem always to have been present in their immediate vicinity, and entering into the structure of the more solid portions of its growth. The cases, in short, seem to be instances of *fibro-cystic* disease of the uterus, and as such call for special investigation, rather than ordinary fibrous tumors, in whose substance cysts have accidentally formed. See, in addition to the references given by Paget, *op. cit.*, vol. ii, p. 138, Kiwisch, *op. cit.*, vol. i, p. 455, and Chiari, *op. cit.*, p. 404.

growth.[1] This detachment of the tumor, by the giving way of its pedicle, is not limited to cases in which it grows into the cavity of the womb, but is also occasionally, though very rarely, observed in instances where the tumor has sprung from the peritoneal surface of the womb. In the only case of the kind which has come under my own notice, the tumor had arisen from the posterior uterine wall, and had projected into the interspace between the uterus and rectum, which continental writers commonly speak of as the space of Douglas. Though perfectly detached from the uterus, however, the tumor, which was of the size of a walnut, had not fallen loose into the peritoneal cavity, but was held in its position by false membrane passing between the uterus and rectum; and I believe that in almost all recorded instances of the complete detachment of a fibrous tumor from the outer surface of the womb, the outgrowth has been retained in a similar manner close to the part whence it originally sprang.

Another mode by which fibrous tumors are sometimes got rid of, is the disintegration of their tissue, and their subsequent expulsion. This process seems to be one of death of the tumor; but the mode in which it is brought about is not by any means clearly understood. It is not a process of inflammation, nor one of its ordinary results. The fibrous tumor, when attacked by inflammation, presents a vivid rose-red color, and shows a greatly increased vascularity; while local pain and the general signs of inflammation attend the process during the patient's life. The disintegration of the tumor, on the contrary, takes place unattended by symptoms which could lead to a suspicion of what is going on; and the outgrowth becomes soft, and breaks down into a dirty putrilage. This change is not very unusual in the lower part of fibrous polypi, when they project through the os uteri into the vagina. The mucous membrane covering this part becomes ulcerated, and being thus deprived of its most important source of nutrition, the adjacent portion of the tumor loses its vitality; the cellular tissue binding the bundles of its fibres together, dies first, and such a growth may sometimes be found firm and solid, and presenting all the ordinary characters of a fibrous tumor at its upper part, but lower down split up into a number of shreds or packets of fibres connected together by a dirty decaying matter. By degrees, these firmer fibres themselves soften, and the process of decay extending further and further, the whole growth may come away imperceptibly; or, on attempting to remove the polypus, we may be surprised to find that what had once been a very firm mass, is now so soft that the hooks by which we endeavor to draw it down, tear out—that nature, in short, has anticipated us, and that in a few more days or weeks she will have completed her operation.

[1] A very elaborate paper on this subject, containing an enumeration of twenty-four cases, collected from different sources, was published by M. Marchal de Calvi in the *Annales de la Chirurgie*, August, 1843.

It is not, however, in these cases only that the death of a fibrous tumor takes place. The same process may go on in the tumor, while still completely within the cavity of the womb, and while still of inconsiderable size. On examining the womb of a woman sixty-three years old, and who was not known to have suffered from any symptoms of uterine disease, the organ was found deformed by eight fibrous tumors growing from its outer surface, which altogether made up a mass three times the size of the healthy womb. One of these tumors, as large as a pigeon's egg, was connected with the posterior uterine wall only by peritoneum and a very slender pedicle of cellular tissue, and would probably in a very short time have become completely separated, while many other tumors were undergoing the calcareous change, and were thus in process of cure. On laying open the cavity of the womb, it was found to be occupied by a growth of the size and shape of a sugared almond, 1.25 inch long by .9 of an inch broad. On its free surface it was covered by the uterine mucous membrane; but it was imbedded for about a fourth of its thickness in the uterine wall, from which it was separated by a distinct envelope of dense cellular tissue, such as surrounds fibrous tumors in general. It was of a dark, almost melanotic color, through the greater part, though not the whole of its substance, and looked as if blood were infiltrated into the substance of a softening fibrous tumor; for enough of its tissue still remained to show its real nature, even irrespective of the evidence afforded by numerous small fibrous tumors, varying in size from that of a pea to that of a bean, which were imbedded in the uterine walls.

Had this person lived a little longer, one of two things would doubtless have occurred,—either the elements of the softened outgrowth would have been absorbed, or its cellular investment would at some point have given way, and a slight discharge, apparently of coagulum, would have been the sole evidence of the ailment from which the patient had suffered, and of the means by which nature had wrought for its removal. Whether without any such previous change in its tissue, fibrous tumors are ever completely removed by absorption, is a question that I am unable to answer from my own observation. I should quite believe in the possibility of the occurrence, though my impression is that softening and disintegration usually precede the removal of the tumor, and that almost invariably it is not absorbed, but is expelled in its softened state, and piecemeal, from the cavity of the womb.

Whether in health or in disease, there is a general analogy between nature's modes of proceeding, even in cases apparently the most diverse, which it is both interesting and instructive to study. The tuberculous bronchial gland is softened, its investment is absorbed, a communication is opened with the air-tube, and the diseased matter is expelled; or when this cannot be accomplished, another change in its element takes place; the gland shrinks, its substance grows harder and harder, chemical activities

are set to work, and a few masses of calcareous matter unexpectedly discovered close to the bronchi of some person who had died in a good old age, tell, not infrequently, that in his youth he was the subject of a disease which usually tends to destroy, and to destroy speedily, those whom it attacks.

Just the same kind of changes occur in fibrous tumors of the womb. We have already studied the process of softening, by which their removal is sometimes brought about: a process of hardening by calcareous deposit in their substance is still more common. This deposit sometimes takes place merely in the periphery of the tumor, which thus receives a calcareous investment or shell, its interior remaining unaltered. This, however, is very unusual, though it is less rare to find incipient calcification of the interior of the tumor, while the change of its surface is complete. The most common form is that in which irregular masses like coral are deposited in various parts of the tumor, whence they may be separated by maceration, or which make up in the case of the smaller tumors almost the entire mass. Now and then, too, this alteration goes on to the same extent even in the larger growths, and they become converted into a substance of stony hardness, which, as is the case with a tumor in the Museum of the Middlesex Hospital, may receive as smooth a polish at the hands of the lapidary as any geological specimen. The growths which proceed from the outer surface of the womb, where nutrition is usually the least active, are those in which this change most commonly takes place. Still the rule is by no means without exception, as a tumor projecting into the cavity of the womb sometimes undergoes this alteration, and being at length expelled from the uterus, constitutes the so-called osseous concretions,[1] the origin and nature of which were once a puzzle to observers. It is, I imagine, almost superfluous to say that these tumors contain none of the elements of true bone, that the change which takes place in them is unaccompanied by the formation of bone cartilage; that in short it is due to a chemical rather than to a physiological process, and like the so-called ossification of the arteries, is an evidence of enfeebled vitality, not of active nutrition.[2]

The only other question of importance concerning the pathology of fibrous tumors of the uterus, is that of their relation to malignant disease, and the possibility of their degeneration into carcinomatous structures. Nothing but the imperfect means of observation possessed in former days would have allowed this question to remain so long undecided; but while hard cancer was believed to be a common form of uterine disease, and every induration

[1] There are some good drawings illustrative of these changes in fibrous tumors in Hooper's *Morbid Anatomy of the Human Uterus*, 4to., London, 1832, plate vii.

[2] See on this subject the remarks of Professor Bidder at p. 42 of Walter's *Dissertation*, who believes in the occasional presence of true bone; while Henle also, *Allgemeine Anatomie*, p. 809, states that he has discovered cartilage corpuscles in them; a statement which Vogel, in Wagner's *Handbuch der Physiologie*, vol. i, p. 823, does not corroborate.

of the cervix was regarded as scirrhous, it is not surprising that hard tumors should have been believed to be at least of kindred nature. It may, however, be now positively asserted that no such degeneration of a fibrous tumor ever takes place; and further, that though fibrous tumors do not exclude carcinoma, they yet are not associated together with any special frequency.[1]

Fibrous tumors are generally regarded, and I believe with truth, as the most frequent of all organic diseases of the womb, though I cannot pretend to state the fact numerically, for the reasons which have been already referred to as vitiating the statistics of hospital practice. Strange as it seems, too, the results of *post-mortem* examinations are conflicting; on the one hand we have the statement on Bayle's authority, that every fifth woman, after the age of thirty-five, has fibrous tumors in her uterus; and on the other hand, the allegation of M. Pichard,[2] that they were met with only seven times in 800 examinations made by himself or by M. Lair.[3] Mr. Pollock,[4] in a paper read before the Medico-Chirurgical Society, states that of 583 uteri examined by himself and his predecessor at St. George's Hospital, 265 were diseased, and in thirty-nine of them fibrous tumors were present, while cancer existed in only thirty-eight. The value of these statements is, however, not a little diminished by their referring to females of all ages, from birth up to old age. Equally unsatisfactory are the data given by MM. Braun and Chiari,[5] according to whom out of 2494 *post-mortem* examinations of both sexes, twenty-five instances were found of the presence of fibrous tumors of the uterus. Of seventy instances in which I have examined the uterus of women who died after puberty of other than uterine diseases, seven presented fibrous tumor of the uterus. From these data we arrive at nothing more definite than the general conclusion that fibrous tumors of the uterus are very frequent, probably more frequent than cancerous disease of that organ.

The data of which we are possessed with reference to the *age* of patients affected with fibrous tumors, though very scanty, are yet more satisfactory, because more definite. Twenty-four *post-mortem* examinations of Braun and Chiari, and nine cases of my

[1] Dr. Lee, in his *Clinical Reports of Uterine and Ovarian Diseases*, relates one case of the coexistence of a calcareous fibrous tumor and malignant ulceration of the uterine cavity, p. 176, Case V; and one case of the presence of the two has come under my own notice. Chiari's figures, indeed, would lead to the belief that fibrous tumors of the womb are associated with a special liability to malignant disease, since in twenty-five examinations of patients suffering from them, two presented also cancer of the womb, one cancer of the mamma and lung, and six cancer of other organs, *op. cit.*, p. 404. I know of no other data, however, which would lead to the same conclusion.

[2] *Dict. des Sciences Médicales*, 8vo., Paris, 1813; Article *Corps Fibreux de la Matrice*, p. 73.

[3] *Des Abus de la Cautérisation, &c., dans les Maladies de la Matrice*, 8vo., Paris, 1846, Table at the end.

[4] *Lancet*, Feb. 7, 1852, p. 155.

[5] *Klinik der Geburtshüfe und Gynäkologie*, 2d part, Erlangen, 1853, p. 397.

own, yield the following result as to the age of the subjects in whom the tumors were found:

2	age not stated.					
1	was aged 24 years;	and she died of puerperal peritonitis.				
3	were aged between	30	and	40	years.	
14	"	"	40	"	50	"
4	"	"	50	"	60	"
7	"	"	60	"	70	"
1	"	"	70	"		
1	"	"	80			
33						

In many of these cases, however, the tumors had doubtless existed for many years, and we are therefore concerned rather with the age at which patients first complain of those symptoms to which fibrous tumors give rise, though even then the disease itself has probably existed in many instances for months, or even years, before it attracted notice.

Braun and Chiari have stated the ages of thirty-seven patients who applied for relief at the great hospital at Vienna on account of fibrous tumors of the uterus not including polypi; and if to these be added ninety-six cases which have come under my own observation, we obtain a total of one hundred and thirty-three, of which—

26	were between	20	and	30	years	of age.
44	"	30	"	40	"	
47	"	40	"	50	"	
15	"	50	"	60	"	
1	"	72 years.				
133						

The above proportions differ in no important degree from those obtained by Malgaigne[1] on a comparison of fifty-one cases of fibrous polypus of the uterus, from which, if twenty-two cases of my own be added, we obtain the following result:

From 26 to 30 years	4
" 30 to 40 "	24
" 40 to 50 "	30
" 50 to 60 "	7
" 60 to 70 "	3
" 70 to 74 "	5
	73

If, however, instead of taking the age at which the patient first applied at the hospital, we draw our conclusions, as we ought rather to do, from the period at which the symptoms characteristic of the disease first manifested themselves, it will be seen that fibrous tumors and fibrous polypi are an affection incidental to the

[1] *Des Polypes Utérins, Thèse de Concours*, 4to., Paris, 1833, p. 12.

season of sexual vigor much oftener than to the period of its decline.

Age of patients.	First came under observation.	Symptoms commenced.
Under 20 years, . .	...	3
Between 20 and 30 years,	11	26
" 30 " 40 "	40	48
" 40 " 50 "	50	34
" 50 " 60 "	15	5
Above 60 years	1	1
	117	117

It has been asserted on Bayle's authority that single women are more liable to these tumors than those who are married, but my own observation does not bear out the statement; for of ninety-six women affected with non-pediculated fibrous tumors, eighty-two were married; or including the cases of fibrous polypi, of one hundred and eighteen, ninety-nine were married. The preponderance of married women is so considerable as to show, I think conclusively, in spite of the comparative smallness of the numbers, that the non-exercise of the sexual functions has no influence in predisposing to the disease.

Taking leave, then, of that attempt to ascertain the cause of this affection, which in the case of all diseases we are so disposed to make, and from which we so seldom arrive at any satisfactory result, we may now pass to the very important inquiry concerning the consequences that these tumors produce and the *symptoms* that they occasion.

First of all it may be premised that sometimes these tumors are attended by no symptoms at all; that they exist for many years without producing any inconvenience whatever. Illustrations of this fact are afforded us by the discovery of fibrous tumors after death in the uteri of women whose sexual system had never shown any sign of disturbance; by our accidentally ascertaining their presence when examining a patient for some other purpose; or by the sudden supervention of symptoms calling our attention to the state of the womb, and revealing the existence of a large fibrous tumor, whose growth must have been going on for years. As might be expected, the constancy of the symptoms is generally proportionate to the intimacy of the relation between the tumor and the uterus. The growths which proceed from the outer surface of the womb often produce no symptoms except such as are due to their mechanical pressure upon adjacent organs; whilst those which are imbedded in the uterine substance almost always disturb the functions of the organ, even before they have attained any considerable size; and the polypi or growths which occupy the cavity of the womb attract attention almost from the first by the hemorrhage which they occasion. Some relation, too, subsists between the general activity of the sexual system and the exercise of its highest functions on the one hand, and the severity of the symptoms of fibrous tumor on the other. It is thus that in women advanced in life, and whose menstruation has ceased, the effects

of fibrous tumors are usually less serious than in younger women. It is thus, too, that these growths may produce so little inconvenience as to be scarcely suspected so long as a woman remains single, but may become the occasion of much suffering as soon as she marries, and as sexual intercourse occasions the frequently increased afflux of blood towards the womb. The bearing of these facts upon our prognosis and treatment must be sufficiently obvious even now, but will be still more apparent after we have examined the symptoms of this affection more in detail.

Those fibrous tumors which hang by a pedicle into the uterine cavity, and which are commonly called uterine polypi, are attended by one invariable and characteristic symptom,—viz., hemorrhage. Since, then, their diagnosis is comparatively easy, and since their treatment differs from that which is generally practicable in the other forms of fibrous tumor, we will postpone their further consideration for the present; and my remarks will be understood to have reference to those varieties of fibrous tumor which are either imbedded in the uterine substance, or which project from its peritoneal surface. Menstrual disorder, uterine hemorrhage, pain, dysuria, and more rarely difficult defecation, are the more important symptoms of fibrous tumors, though from being present in various degrees, and in varying combinations, they often leave room for much doubt as to the nature of the affection to which they are due.

The following are the principal results deduced from a comparison of ninety-six cases of fibrous tumor of the uterus, of which I have preserved a sufficient record:

In eight of the ninety-six cases menstruation had already ceased when the patients came under my observation, but in two of them considerable hemorrhage occurred from the uterus at irregular intervals, in two such hemorrhage occurred in but small quantity, and in four it did not take place at all.

In thirty more cases the menstrual function was not disturbed at all, and in twenty-four of them there was no intercurrent uterine hemorrhage at other times; but in six patients hemorrhage occasionally took place, which, however, had no relation in the time of its occurrence to the menstrual function.

In the remaining fifty-eight cases menstruation was more or less seriously disturbed, being

Excessive,	in 30	cases.
" and painful,	" 10	"
" " irregular,	" 5	"
Painful,	" 5	"
" and irregular,	" 2	"
Irregular,	" 2	"
Scanty,	" 4	"
	58	

It appears then that in forty-five out of eighty-eight cases in which menstruation had not ceased, it was either excessive in quantity, or over-frequent in recurrence, or both; while in fifteen

instances the function was performed with excessive pain; and only in four instances did the quantity of blood lost at the period fall below that to which the patient was accustomed when in health.

In forty-four cases hemorrhage from the uterus occurred at other times than those of menstruation; an accident which took place

After the cessation of the menses, ...	in	4 cases.
Coincided with menorrhagia or over-frequent menstruation, ...	"	32 "
" " painful menstruation, ...	"	2 "
" " " and irregular menstruation, . .	"	1 "
" " irregular menstruation, ...	"	1 "
" " no disorder of menstruation, ...	"	4 "
		44

In sixty-five cases, pain was complained of at other periods than those of menstruation. This pain varied greatly in its severity, its situation, and its continuance; some patients describing it as a burning sensation, others as a sense of bearing down, while others again seemed to suffer from it in paroxysms of almost intolerable anguish. This pain in thirteen of the sixty-five instances coincided with painful menstruation; but in four cases of dysmenorrhœa, pain was not experienced at other than the menstrual epochs. Menstruation had already ceased in six of the cases in which pain was experienced, and in the remaining forty-six was performed without suffering, and in nineteen of the number, without disorder of any kind.

There were, moreover, thirty-five instances in which the patient suffered from dysuria; either from pain in voiding urine, or from difficulty in its discharge, or from frequent desire to pass it; while four times complaints were made of difficulty in defecation: but none of these sensations could be referred so distinctly to the seat of the tumor or to its size as might beforehand have been expected.

The influence of fibrous tumors in modifying the rate of fecundity is very remarkable, and shows itself both in diminishing the number of conceptions, and also in increasing the proportion of pregnancies which come to a premature termination. Of the ninety-six cases on which these observations are founded, eighty-two were those of married women; of these twenty were sterile, while the remaining sixty-two had given birth to one hundred and twenty-four children, and had miscarried forty-eight times. Thirty-one of the sixty-two had had but one pregnancy, which in the case of twenty-one had gone on to its full period; in ten had terminated prematurely by miscarriage. It is true that five women had given birth to three children each, four to four, three to five, one to eight, one to nine, and one to eleven, respectively; but in all but three of these instances, the tumor either grew from the fundus, or was situated external to the posterior uterine wall, and, as far as could be ascertained, did not involve the substance of the womb. We shall hereafter see that even when proceeding

from this situation, fibrous tumors of the uterus often render pregnancy, and labor, and the puerperal state, periods of great hazard; but it is easy to understand that when the growths proceed from the exterior of the womb, they may not interfere with the mere term of utero-gestation.

The symptoms of fibrous tumors for the most part come on by degrees, so that the patient cannot narrowly define the commencement of her illness, but speaks of a gradual increase in the abundance of her menstruation, or of the discomforts which attend it, or of some painful sensation at first scarcely perceived, becoming by little and little more and more importunate, until at length, when driven to seek relief, she first became aware of the existence of the tumor. To this rule, however, exceptions are by no means uncommon; and in twenty-one of ninety-six cases the symptoms came on suddenly, some grave accident at once forcing itself on the attention of the patient, who had previously imagined herself quite well. In eleven of these twenty-one cases, it was hemorrhage, in five inability to void the urine, such as to call for the use of the catheter, which first excited the patient's alarm, and five times it was intense abdominal pain, though it by no means follows that the first symptoms should continue throughout the most prominent. Lastly, I may add that in eleven instances the accidental discovery of a tumor in the abdomen, was the first indication that the patient received of the existence of an affection which for years must have been in slow course of development.

If, now, we endeavor to picture to ourselves the history of a case of fibrous tumor of the uterus, we shall, I think, find our sketch to be something of the following kind: A person, probably a little past the prime of womanhood, but at an age at which the sexual functions are still actively performed, becomes causelessly the subject of menorrhagia, which may or may not be attended with pain. The hemorrhage is at first readily suppressed by rest and ordinary precautions, but it afterwards returns on every slight exertion, and at length comes on without any cause at all, or continues from one menstrual period to another, so that the patient loses all count of the proper menstrual epochs. She does not experience that general constitutional disturbance which almost always accompanies idiopathic menorrhagia, but suffers merely from the loss of blood and its direct results, while in the intervals between the attacks of bleeding, she is seldom troubled by leucorrhœa, and never by any offensive discharge. Coupled with the hemorrhage, sometimes from the very first, generally within a few months from its outset, various sensations of pain or discomfort are experienced in the lower part of the abdomen, and the neighborhood of the womb. Among these sensations of discomfort, that of a frequent desire to pass water is one of the most frequent. The abiding pain is seldom of great intensity; unlike the pain of chronic uterine inflammation, it is not such as to render sudden changes of posture, the sitting on a hard seat, or jolting on a rough road almost intolerable; it does not even preclude

sexual intercourse. On the other hand, it is not a sharp lancinating pain like that of carcinoma, but is a dull aching, or burning, or throbbing, not in general very difficult to bear, though now and then there are associated with it occasional attacks of suffering evidently neuralgic in character, intense in their severity, and generally accompanied by violent expulsive efforts.

Any symptoms of this kind should raise a suspicion in our minds as to the probable existence of a fibrous tumor of the uterus, while neither the comparative youth nor the advanced age of the patient, neither the sudden supervention of the symptoms, nor their very slow development, should be allowed to negative this suspicion, or to bias our minds with reference to a question which a careful examination can alone decide. In any such case, and indeed in every instance where there is the least possibility of the existence of a tumor of any kind, it is necessary to begin by a careful examination of the abdomen. The tumor formed by a fibrous growth is generally very firm, nodulated, and uneven, seldom mesial, but so often situated considerably to one side of the abdomen, that its position alone is not of much value as a means of discriminating between it and tumor of the ovaries. The latter may, however, generally be distinguished by their smooth surface and spherical contour, as well as by a certain degree of elasticity, which is usually distinguishable in them, even though they should yield no distinct sense of fluctuation. On making a vaginal examination, the condition will be found to vary very much, according to the position and relations of the tumor. If any tumor can be felt in the abdomen, the first point to ascertain is the relation borne by it to that of the uterus, to determine whether pressure on the one is immediately communicated to the other; since thereby some clue may be obtained as to the probability of its connection with the substance of the womb on the one hand, or with the uterine appendages on the other. The ovarian tumor, when once it has risen out of the pelvis, almost always draws the uterus up with it, while this change of position seldom takes place when the growth proceeds from the womb itself. The posterior uterine wall is the most common seat of fibrous tumors, inasmuch as they were present there in thirty-eight out of ninety-six cases;[1] and in twelve of the number could not be discovered in any other part of the uterus that was accessible to examination. Hence we generally find a firm body often, but not always, uneven, occupying more or less of the posterior part of the pelvic cavity, carrying the uterus forwards towards the symphysis pubis, and frequently more or less completely retroverting the organ; in which case it is usually displaced from the mesial line, so that the os uteri is to be found near to the pubo-iliac synostosis on one or other side.

[1] The result thus obtained by examination during life tallies tolerably closely with that arrived at by Mr. Lee, from a comparison of various preparations in the Museums of the metropolis; who found that in twenty-two out of seventy-four cases the growth sprang from the posterior wall of the body or neck of the uterus. See Safford Lee, *On Tumors of the Uterus*, 8vo., London, 1847, p. 2, table i.

The os uteri itself is generally small, circular, and healthy; the tissue of the cervix smooth and healthy, or, at the most, only somewhat turgid and hard, from the frequent afflux of blood towards the organ. If the tumor be very small, springing from just behind the cervix, the diagnosis between it and retroflexion of the uterus is a matter of much difficulty, and harder still is it to make out the distinction between anteflexion of the uterus and a fibrous tumor of its anterior wall, the possibility of which must not be lost sight of in the confessed rarity of its occurrence. If the tumor is within the uterine cavity, or imbedded in its walls, the results of an examination will of course be different; the uterus will be found larger, heavier, and less movable than natural; its lower segment may be distended by the tumor, and in that case will not be unlike the form which is assumed by the pregnant womb, though the lips of the uterus, instead of presenting the development characteristic of the gravid state, will be found mechanically thinned by the pressure of the tumor. The cervix uteri, too, in such cases not infrequently disappears long before the growth has attained such a size as by its prominence in the abdomen to simulate the state of the womb when gestation is half completed. If, however, the tumor does not thus project into the uterine cavity, its diagnosis will be much more difficult, for a large, a somewhat hard, and a but partially movable uterus, will be all that is at first apparent, all perhaps that even a repeated examination may discover. Still, even here, the unaltered orifice of the womb, the absence of tenderness of its cervix, and of any thickening about the roof of the vagina, will suffice to show that neither has inflammation of its appendages fixed the organ in its position, nor has inflammation of its substance or its cervix increased its size and weight. The sound may also show the cavity of the uterus to be elongated; and I believe that an enlarged, and heavy, and somewhat hard uterus, coupled with the causeless occurrence and frequent return of uterine hemorrhage, while the os and cervix uteri are healthy, are almost always characteristic of fibrous deposit in the uterine substance. It is, I imagine, scarcely necessary to say that not infrequently we come to this opinion rather by the exclusion of all other possible sources of similar symptoms than by the positive evidence afforded by any single sign pathognomonic of this affection.

It must remain, however, for our task at the next Lecture to pass in review the various anomalies in the symptoms of fibrous tumors of the uterus, and to study the different circumstances which may render our diagnosis difficult or doubtful.

LECTURE XVI.

UTERINE TUMORS AND OUTGROWTHS.

Fibrous Tumors;—their diagnosis, and exceptional character of their symptoms in some cases. Occasional difficulty of distinguishing between them and ovarian tumors. Menstrual irregularity and subsequent sudden hemorrhage has raised suspicion of miscarriage. Sudden suppression of urine in some cases; its import. Difficulty of distinguishing between flexions and tumor of the uterus. Possibility of mistaking for cancer. Cases characterized by intense pain. Diagnosis between pregnancy and fibrous tumor, and difficulty of discovering former when complicated with latter.

Prognosis; progress generally slow; illustrative table. Influence of pregnancy and labor; dangers which attend them, and why.

We have hitherto looked at the symptoms of fibrous tumors of the uterus only as they appear in the simplest cases, with nothing to obscure or distort their characteristic features. In the study of all diseases, however, our concern is at least as much with the exception as with the rule; and if we would not fall into gross errors, we must be as ready to undo the tangled web, and to find in the midst of it the clue that may lead us right, as we should be quick to follow the signs which point out the plainest path, and render even a moment's doubt almost impossible.

Some of the rarer cases, then, must next engage us; and I must try, even at the risk of wearing out your patience, to describe some of the many circumstances which may cause us to hesitate in the *diagnosis* of fibrous tumors of the uterus.

In enumerating the symptoms of this affection, it has already been mentioned, that while hemorrhage very often attends it, the occurrence is by no means constant. It may, however, happen that missing on some occasion this, which is one of the most characteristic signs of the disease, we may begin to doubt its nature, and to question whether the tumor which we discover is not connected with the ovary rather than with the womb itself. I do not know any certain means of avoiding error in such cases, but refer to them for the sake of impressing on you the fact, that the mere absence of hemorrhage, or even a condition of scanty menstruation, does not negative the possibility of the existence of fibrous tumor; just as, I may add, on the other hand, very profuse hemorrhage sometimes occurs in instances where the tumor is unquestionably connected with the ovaries.

The kind of difficulty which presents itself in some instances in distinguishing between tumors of the uterus and tumors of the ovaries, and the considerations which guide us to a solution (possibly indeed not always a correct one) of the question, will perhaps be best understood by the following sketch of the history of a woman, aged thirty-nine, who was admitted under my care into St. Bartholomew's Hospital, in April, 1851. She had been married twenty years, but for eighteen had been a widow, her only child

having been born a year after marriage. Her menstruation, which commenced at fourteen, had always been regular, and unattended by any considerable inconvenience, while it had at no time been excessive. She first noticed a swelling in the right side of the abdomen between three and four months before she came under my notice; and this tumor had since gradually increased in size. Since she first perceived the tumor, she had had two or three attacks of pain in the back, followed by retention of urine; while her bowels were often constipated, and she frequently required aperient medicine. Her general health, however, was not seriously impaired.

The abdomen measured thirty-six inches and a half at the umbilicus, forty-one inches and a half two inches lower down. The abdominal integuments were loose, and contained a good deal of fat. A solid movable tumor occupied the abdomen, extending from low down on the left side of the pelvis, across the mesial line, reaching on the right side to an inch and a half above the umbilicus, and to within three inches of the right crista ilii, but not dipping down into the right side of the pelvis as it did on the left. This tumor was solid, non-fluctuating, and its surface was somewhat nodulated. At its upper part, and at the right side near the umbilicus, one portion of the tumor, a sort of offshoot as it seemed, was movable upon the other larger part of the growth. On examining per vaginam, the finger at once came upon a firm globular tumor occupying the pelvic cavity, and dipping down to within an inch of the outlet. At the anterior and right part of the tumor a depression could be felt, somewhat like the os uteri, though the finger could not be made to enter it; but in no other situation could the least trace of an opening be discovered. A grooved needle was introduced with some difficulty per vaginam into the tumor, but no trace of any fluid was obtained.

In this case the circumstances which favored the supposition that the tumor was ovarian, were its large size, the alleged rapidity of its growth, the fact of its situation not being mesial, and the absence of uterine hemorrhage during its growth. On the other hand, the mere size of the tumor is not conclusive, since, as you know, a fibrous tumor of the uterus sometimes attains to enormous dimensions; while further, the early stages of its growth might all the more readily be overlooked, owing to the large quantity of fat in the abdominal walls. Moreover, in spite of the frequency of uterine hemorrhage as a symptom of fibrous tumors of the uterus, it is an accident by no means of constant occurrence, and in some of the largest fibrous tumors that have come under my notice, the only symptoms produced have been purely mechanical. It is very unusual to find so large an ovarian tumor without some sense of fluctuation; the uneven nodulated surface, and the mobility of one portion of the tumor upon the other is, moreover, consonant with what one observes in tumors of the uterus rather than in those of the ovary. The results of vaginal examination, the solid tumor, the altered condition of the lower segment of the uterus, the

absence, or at least the impossibility of discovering the os uteri, unless it were represented by the small depression which I have mentioned, and lastly, the result of puncture with the exploring needle, all seem to warrant the conclusion that the tumor was uterine, and not ovarian.

In addition to these means of diagnosis, which will be found more or less applicable in other cases, the position of the patient during a vaginal examination is a matter of considerable importance. If a woman assumes the usual attitude, the tumor naturally falls towards the left side, carrying the uterus with it. To ascertain correctly the relations between the womb and the tumor, the examination should be made with the patient lying on her back, even though it should be necessary, as very probably it may be, for the sake of making a complete examination, to alter her position, and to place her afterwards on her side.

I should perhaps add that the diagnosis between uterine and ovarian tumors is sometimes still more obscured by the presence of fluid in the abdominal cavity. Some degree of ascites is indeed far from unusual in cases of ovarian disease; but its coexistence with fibrous tumor of the uterus is so rare that it may possibly be forgotten. Twice, however, I have had occasion to tap the abdomen in cases where a tumor was supposed to be ovarian, and it was only on a careful examination, after the evacuation of the fluid, that its real nature became apparent, and that the tumor was ascertained to be connected with the uterus, and not with the ovary. Since, then, the two conditions may be present, it is wise to abstain from forming a positive opinion as to the nature and relations of any solid tumor which may be felt in the abdomen when much distended by fluid, and to wait till tapping has removed the fluid, and rendered the tumor accessible to a thorough examination.

Another deviation from the ordinary characters of the disease is seen when its symptoms set in with great suddenness, those symptoms being generally either hemorrhage, or retention of urine. The sudden hemorrhage is sometimes assumed to be due to miscarriage, and this upon grounds as slender as a mere impression upon the patient's mind that she was pregnant, often indeed a hope, rather than a belief, that this was the case. The great safeguard against this class of mistakes consists in never taking a patient's statement as to the existence of pregnancy for granted, but in always questioning her closely with reference to the date of her previous menstruation, and the evidence of her alleged condition; and if this be done, it will not infrequently turn out that an assertion made most positively, is nevertheless unsupported by a single tittle of proof. But further, the hemorrhage excited by a fibrous tumor is usually more profuse than that of an early abortion—is often unattended by pain, while when pain is present, it is not of the same kind, nor do the pain and the bleeding cease at the same time as they do when miscarriage has occurred. The causeless return of the bleeding in cases of fibrous tumors, gene-

rally removes the doubt which might have been felt; while if an examination be made per vaginam, though in both cases the womb will be heavier than natural, yet the developed lips of the os, its patulous condition and soft texture, after a recent miscarriage, differ much from the firm tissue of the neck of the womb in the other case, its undeveloped lips, its small and scarcely open orifice.

The other mode in which the symptoms sometimes suddenly manifest themselves is in the supervention of great difficulty in voiding the urine, or in the occurrence of retention of urine such as to necessitate the use of the catheter.

The occasional retention of urine is an occurrence by no means infrequent, independent of organic disease, in women of an hysterical temperament, and cannot of itself be regarded as characteristic of any one affection in particular. It is, however, well to bear it in mind, as being sometimes the first indication of the existence of fibrous tumors of the uterus, while both it and dysuria, and very frequent micturition, are less frequent attendants upon ovarian tumors, except in those cases in which both ovaries are affected, and one occupies the pelvis, while the other fills the cavity of the abdomen. The reason for this difference between ovarian and uterine tumors is, I believe, to be found in the tendency of the tumor of the ovary to rise out of the pelvic cavity, while the fibrous tumor of the uterus still continues in its original situation; and, as it enlarges, either presses against the neck of the bladder, or carries the uterus more and more forwards till it comes to press upon that organ, to irritate it, and even mechanically to interfere with the discharge of its contents.

This interference with the functions of the bladder is usually most remarkable in those instances in which the tumor proceeds from the anterior surface of the uterus; and I relate the following case both in illustration of this fact, and also of another to which reference has already been made, namely, the manner in which some unwonted cause of uterine congestion may at once call into painful distinctness a train of symptoms previously little felt, perhaps even scarcely suspected.

A woman, aged thirty-five, married for eleven months, but who had never been pregnant, was admitted under my care in December, 1852. Previous to her marriage, habitual dysmenorrhœa had been the only form of ill health from which she had suffered, but since then she had been troubled with frequent desire to pass water, and constant aching pain in the loins, aggravated by walking. The urine was either natural, or else threw down a precipitate of the lithates. The case seemed at first as though it were simply one of uterine congestion after marriage, and local leeching brought slight and temporary relief to the symptoms. On examination per vaginam, however, the os uteri was found to be directed much backwards,—it was very slightly open; while a tumor of a rounded form was distinctly felt in front of the cervix, pressing immediately against the bladder, and the sound introduced into the bladder encountered this same obstacle to its introduction,

which was overcome only after a little manipulation, though no evidence was obtained at any time of the existence of disease of that organ. The position of the os uteri, and the circumstance of its almost complete closure, while in cases of flexion of the womb it is nearly always open, were two of the reasons which led me to regard the case as one of uterine tumor, not of anteflexion of the uterus. In other instances of tumors of the anterior uterine wall, I have observed a nearly equal degree of irritability of the bladder, but coupled with hemorrhage and other characteristic symptoms of fibrous tumors of the uterus, which in this case were absent.

The discrimination between fibrous tumors of the posterior uterine wall and retroflexion of the uterus, is often attended by at least as much difficulty as that between the two opposite states of anteflexion and tumor of the anterior wall. These cases illustrate one remarkable fact, to which reference has already been made when I was speaking of flexions of the uterus, namely, the want of any constant relation between the amount of mechanical pressure on the rectum, and the degree of difficulty in defecation. Sometimes, indeed, the presence of a tumor so large as almost completely to fill the cavity of the pelvis, will be attended by scarcely any difficulty in the expulsion of the fæces, while in another case, a growth of but small size will be accompanied by pain and difficulty in emptying the bowel, and the presence of mucus in the evacuations will give unmistakeable proof of the irritation to which it has given rise. The comparatively slow growth of a fibrous tumor, and the time consequently given for the adaptation of parts to their new relations, no doubt goes far to explain the general absence of any serious difficulty in defecation; it occurred only in four of the ninety-six instances on which my remarks are founded. Nothing, however, is more variable than the amount of pain attendant upon uterine ailments; and causes acting through the medium of the general system, as well as others more local in their influence, often excite intense suffering from some disease of the womb which had existed for months or years before without occasioning severe pain, perhaps even without producing serious inconvenience.

Neither the amount of pain, nor the degree of difficulty in defecation, can be taken as affording any clue to the solution of the question, whether we have to do with a retroflected womb, or with a fibrous tumor of the posterior uterine wall. The exact relations of the tumor, the fact of the tissue of the cervix uteri passing over into that of the tumor,—a characteristic of flexion of the womb which the experienced touch will generally be able to appreciate,—the state of the os uteri, and the results of the introduction of the uterine sound, which will remove the misplacement and inform us of the weight of the uterus (supposing always that we can introduce it, though that is sometimes impracticable), are generally sufficient to keep us from error. In spite of all care, however, we may sometimes meet with cases in which we shall

find it a most difficult matter to arrive at a certain diagnosis. Need I say that the importance of a correct diagnosis consists, in these cases, not in its leading us to the adoption of any special plan of treatment, but rather in its enabling us to remove much needless anxiety, to assure our patient that there may be some misplacement of the womb, but that there is no disease of the organ, nor any reason for anticipating an increase of suffering, still less for apprehending a painful and lingering illness.

The history alone of fibrous tumor may often raise the suspicion that the patient is affected with cancer, for pain and hemorrhage may both be present, and the health may give way under their continuance, while it needs but inattention to cleanliness, and the allowing the coagula to remain in the vagina and decay there, in order to produce the third symptom,—offensive discharge, which is so often looked upon as almost pathognomonic of malignant disease of the womb. A vaginal examination, however, seldom fails to clear up all uncertainty; so little is there in common between the small os, the thin and undeveloped lips which coexist with fibrous tumor, and the gaping orifice, with the thickened, hard, irregular, and nodulated lips that characterize cancer of the womb.

Error, however, is still possible, and Dr. Montgomery, in his valuable paper, to which reference has already been made, mentions some instances where the pressure of a fibrous tumor just about to project through the os uteri against the lower segment of the womb, and the consequent alteration in the condition of the cervix, had led to the mistaken supposition that cancer existed. Care ought to prevent you, I think, from falling into this mistake. More difficult, however, is the diagnosis between cancer of the body of the uterus and fibrous tumor of the organ; and the risk is considerable, in spite of much watchfulness, of your taking the more for the less serious disease. When speaking of cancer of the womb, I shall shortly have occasion to refer again to this subject. At present it may suffice to say that the more rapid progress of the malignant disease, the persistence, though not of necessity the greater abundance, of the hemorrhage, and the want of mobility of the uterus, though its size be not such as to occupy completely the pelvic cavity, are some of the more important characters by which we may usually recognzie that rare affection—cancer of the body of the womb.

Though not likely to induce any positive error of diagnosis, there is yet another deviation from the ordinary symptoms of fibrous tumors of the uterus, which calls for some notice. It happens now and then that they are accompanied by attacks of pain of such intense severity as to be almost unbearable, the pain being evidently neuralgic in character, ceasing abruptly, returning causelessly, and being but little amenable to any kind of treatment. These attacks do not seem to be dependent on the size of the tumor, nor on its situation, and are certainly not connected with any special pressure exerted by it on any organ, or on any

set of organs. In one case, in which it continued for years to return occasionally, a sense of weight and burning referred to the womb being experienced in the intervals, the tumor was imbedded, as far as could be ascertained, in the posterior uterine wall. Menstruation was irregular, but profuse; its occurrence had no influence either in increasing or in lessening the uterine pain. The patient was at different times under my care with little benefit, and many trials were made of preparations of iodine, without her being able to continue the remedy. At length, after the lapse of four years, she became able to take iodine without the disturbance of health which it had previously occasioned, and after about six weeks' continuance of it, both the abiding and the paroxysmal pain were greatly lessened, though the condition of the tumor remained unaltered.

The other case was one of a still more remarkable character. A stout, tolerably healthy-looking woman, but whose somewhat bloated face confirmed the suspicions which her calling as the wife of a publican excited, presented herself one morning at the out-patient room of St. Bartholomew's Hospital. At that time her appearance and manner presented every sign of most intense agony; drops of perspiration stood on her forehead, her skin was cold and clammy, and her pulse feeble. With these manifestations of extreme suffering, there were associated a disposition to weep, and also a good deal of *globus hystericus*. After being some little time in bed, the intense pain subsided, and she then gave the following account of herself: She was thirty-three years old, had been married seventeen years, had given birth to one live child at the eighth month, and had miscarried three times at early periods; twelve years having elapsed since her last miscarriage. The catamenia had always been regular in their return, but for the last two years the discharge had been more profuse than before. For sixteen years she had had occasional attacks of pain similar to those from which she suffered when she came under my notice, but the attacks had always been mitigated by cupping and leeching. For eight years, however, the pain had returned regularly immediately after the cessation of menstruation, and had continued for about a week after each period, the paroxysms returning every two hours, and lasting from half an hour to an hour. Her health was generally best for a week before, and sometimes during menstruation, though the pains had greatly increased in their severity, and were sometimes brought on by exertion, or by sexual intercourse, while rest in the recumbent posture always relieved them. The patient complained besides of a sort of cramping pain during micturition, and of difficult defecation, as if from some substance contracting the passage for the fæces. When the pain came on she sat up in bed, swaying herself from side to side, weeping loudly, complaining of pain like the throes of labor, and also of a choking sensation, all of which subsided by degrees in the course of about half an hour. The abdomen was full; its size, which was considerable, was partly due to fat with which the integuments were loaded;

on laying the hand upon it, spasm of the abdominal muscles was immediately excited; and this for some minutes prevented the attempt to determine whether any tumor was seated there or not, though after a time this was settled in the negative. The uterus was situated low down in the axis of the pelvic outlet; its anterior lip was three-fourths of an inch longer than the posterior; the tissue of the cervix was healthy, the os circular, and slightly open. Behind, and to the left of the uterus, and extending also slightly in front, was a firm uneven nodulated tumor, tender on pressure, connected, though apparently not very intimately, with the uterus, but which was ascertained by repeated examinations, and by evidence of the uterine sound, which discovered the cavity of the organ to be four inches and a half long, to be in reality an outgrowth from the womb, and not a tumor simply connected with its appendages.

At first quinine was given in large doses and at short intervals, but with little effect; and I may state my general impression, that quinine oftener fails to arrest uterine neuralgia than to relieve pain seated in other systems of nerves. Afterwards the pain was kept in check by opium, and the patient left the hospital relieved, but not more than might be expected from quiet, a regulated diet, and the anticipating each attack of suffering by appropriate treatment.

The most frequent and the most important exceptional peculiarities of these growths have now been passed in review; but reference ought perhaps to be made to the distinction between fibrous tumors and pregnancy, and to the discrimination of pregnancy when it coexists with tumors. Of the two, I believe the latter to be far the more difficult; and, indeed, when we find the size of the womb obviously increased by fibrous outgrowths, it is almost a pardonable error to attribute to them the whole increased bulk of the organ, and to lose sight of the possibility of a physiological cause having a share in the production of the enlargement. No direction can be laid down such as will always keep from error: the best safeguard is perhaps to be found in our making it a rule for our guidance, in every case of doubtful tumor, to prove the non-existence of pregnancy before advancing a step further in forming a diagnosis. It is to be remembered, sadly strange as it may seem, that there is scarcely any disease, however formidable or however loathsome, in spite of which sexual intercourse and conception may not take place. Vesico-vaginal fistula, the most repulsive disease of the external organs, cancers of the vagina or of the uterus, are far from proving the bar to cohabitation that might be expected—a cohabitation often on the woman's part submitted to with pain of body and anguish of mind; for, indeed, it is in her sex, much less often than in our own, that "the Centaur not fabulous" finds its aptest illustrations.

Reference has already been made to the different condition of the womb in pregnancy from that which it presents when enlarged by fibrous tumor; and the dissimilar state of the lips and orifice of the womb, and the different consistence of its enlarged lower

segment, will generally suffice to keep the attentive observer from error. It is, indeed, from relying on the evidence furnished by some one or two symptoms of pregnancy, and not taking into due consideration the counterproof afforded by other symptoms, that mistakes are almost always committed. The uterus is found enlarged, and its lower segment expanded; movements supposed to be fœtal are felt by the patient, and a sound resembling the uterine souffle is perhaps detected, and the existence of pregnancy is at once assumed; no account being taken of the occurrence of hemorrhage, of the non-development of the uterine lips, and of those other phenomena which ought to have excited suspicion;—which, duly weighed, might have at once proved the case to be merely one of uterine tumor. It is well to bear in mind that, although always of rare occurrence, it yet happens more frequently in cases of fibrous tumor than of any other uterine ailment, that a sound is perceptible closely resembling the uterine souffle, and corresponding with it in situation, and in the extent of surface over which it is heard.[1] The caution which this fact suggests must not be lost sight of in any case of doubtful pregnancy.

The complication of fibrous tumor with pregnancy may interfere very seriously with the detection of that condition, partly by the misplacement of the womb which it frequently produces, the consequent alteration in the form of the organ, and the difficulty that it may give rise to in attempting to reach the os uteri; and partly by the impediment which the deposit itself may offer to the occurrence of the physiological changes in the orifice, neck, and lower segment of the womb.

Some time since a case was under my observation in the hospital, in which I overlooked the existence of pregnancy; and I will relate to you some particulars of it, as illustrating the circumstances that may conspire to throw you off your guard, and to obscure almost completely the usual symptoms of pregnancy.

A woman, aged thirty-eight, who had been married twelve months, but had never been pregnant, stated that she had had tolerably good health, and had menstruated regularly until seven weeks before she applied for admission, when the discharge suddenly ceased after exposure to cold. Four months before I saw her she first perceived a hard, painless swelling, about the size of an egg, below and to the right of the umbilicus, and this increased until it had attained half its subsequent size, without any disturbance of her health. Since the cessation of her menses, she had suffered from pain in the back and loins, which, slight at first, had

[1] In Walter's remarkable case, to which reference has already been made, a loud souffle contributed for a time to obscure the diagnosis. Several instances of loud uterine souffle coexisting with uterine tumor, and independent of pregnancy, are related by J. A. H. Depaul, *Traité d'Auscultation Obstetricale*, 8vo., Paris, 1847, pp. 209–222. I have observed it in one only out of the ninety-six cases on which these remarks are founded. In this instance, too, error was scarcely possible, for the sound was accompanied by a distinct *frémissement*, and both it and the tremor seemed to be seated in the left epigastric artery and its branches.

by degrees become very severe, and at length compelled her to seek for medical advice. Leeching and rest had relieved her pain, but the tumor gradually increased in size. Three weeks before her admission, a discharge, said to be menstrual, again made its appearance, and continued for a week, when it ceased for two days, but then returned, and was still going on when the patient came under my care.

The abdomen was occupied by a tumor, which was not symmetrical, but more prominent on the right than on the left side of the umbilicus, reaching up to about its level, extending to within about an inch and a half of the left crista of the ilium, and completely occupying the right iliac region. It was hard, unyielding, seemed about the size of an infant's head; was tender on pressure upon its most prominent part. On examining per vaginam, the finger came at once upon a spherical body, occupying the posterior half of the pelvis, and pressing the neck of the womb closely against the symphysis pubis. This tumor, which was firm though somewhat elastic, began immediately behind the cervix uteri, which was about half an inch long, the lips soft, and the os open enough to admit the finger, while the cervical canal was not closed, nor could any mucous plug be detected in it.

After the patient's admission, there was very little hemorrhage from the uterus, but she had frequent attacks of very violent pain of an expulsive character. Opiates mitigated the severity of these attacks and controlled their frequency, and at the end of a month the patient left the hospital much relieved, her abdomen measuring thirty-three inches at the umbilicus, as on the day of her admission.

A month after she left the hospital she was prematurely confined of a still-born child at about the sixth month of utero-gestation, and her recovery after her labor was retarded by an attack of uterine inflammation, of which the patient spoke as having been very severe. Nine weeks after her delivery I again saw her, and found her uterus low down and fixed in the pelvis, the enlarged, elongated, and much thickened cervix being closely in apposition with the anterior pelvic wall, while a large tumor connected with, and growing out of the posterior uterine wall, completely filled the pelvic cavity, and greatly contributed to the immobility of the organ.

It were time wasted to dwell at length on the causes which rendered the diagnosis of pregnancy so difficult in this case, or which indeed prevented any suspicion of it being entertained. Unsuspected by the patient herself, some of its symptoms were doubtless unnoticed by her; while the continuance of a discharge like that of the menses, its subsequent suppression for a short period, its reappearance and persistence for three weeks before she was received into the hospital, all seemed more like the evidences of disease than any of the ordinary results of pregnancy. Examination, too, detected a tumor occupying the pelvic cavity, and which was clearly a fibrous outgrowth. This very tumor prevented the ordinary changes in the lower segment of the uterus

from taking place, and thus led to the belief that uterine disease, and disease alone, existed. You know, however, that a correct diagnosis implies, not simply the discovery of the patient's disease, but the formation of a right judgment concerning that patient in all respects. The public feel as little respect for an incomplete diagnosis as for one that is altogether wrong.

It is not possible, with reference to any disease whose progress is so variable and course so uncertain as that of uterine fibrous tumor, to make any general statement concerning the *prognosis* that we should form, for the contingencies are very numerous by which the patient's condition may be modified. Thus much, however, may be stated: that apart from the risks attendant on pregnancy and labor, fibrous tumors do not tend generally, nor ever rapidly, to the destruction of life, though they undermine a person's health, and must often make her an easy prey to any intercurrent disease. In only one out of the ninety-six cases on which these observations are based did the patient die of hemorrhage, and the fatal event in this instance occurred nine years after the appearance of the first symptoms of the disease; while in the other two fatal cases death was due to uterine and peritoneal inflammation after delivery. The subjoined table which shows the duration of the symptoms at the time when the patients first came under my observation, illustrates the comparatively slow course of the affection.

The symptoms had lasted less than					1	year	in 23
"	"	between	1	and	2	years	in 8
"	"	"	2	—	3	"	" 5
"	"	"	3	—	4	"	" 13
"	"	"	4	—	5	"	" 10
"	"	"	5	—	6	"	" 9
"	"	"	6	—	7	"	" 4
"	"	"	7	—	8	"	" 4
"	"	"	8	—	9	"	" 2
"	"	"	9	—	10	"	" 3
"	"	"	10	—	11	"	" 4
"	"	"	11	—	12	"	" 3
"	"	"	12	—	13	"	" 2
"	"	"	13	—	16	"	" 3
"	"	for	. . . .		20	"	" 1
"	"	"	. . . .		23	"	" 1
							In 1

who died after delivery, the existence of the tumor was not suspected till labor took place.

Total, 96

Unlike, then, any form of malignant disease, uterine fibrous tumor shows no constant tendency to advance or to increase; and if we are compelled to allow that medicine furnishes no certain means by which to arrest its growth, and that surgery can but seldom be called to our aid, it is yet a consolation to be able truthfully to assure our patient that the much-dreaded ailment is yet less formidable than it was supposed to be, much less so than it has often been represented.

I purposely, however, excepted one contingency when mention

ing the comparatively small risk to life from fibrous tumor of the uterus, and spoke of the disease apart from the dangers that attend upon it when associated with pregnancy, labor, and the puerperal state. We have already seen that the existence of fibrous tumors in the uterus lessens the chances of conception, and it is fortunate that it does so, for the increased afflux of blood towards the womb which pregnancy occasions is almost sure to accelerate the growth of any tumor connected with it. Pregnancy, indeed, when it does take place, often has a premature termination; for the presence of a tumor in the wall of the uterus interferes with the regular development of the organ, and thus in many instances abridges the term of gestation. Not long since a patient was under my care, in whom the existence of a tumor, imbedded in the left wall of the uterus, was ascertained soon after the occurrence of an apparently causeless miscarriage. Four other miscarriages have since successively occurred, and no other reason can be assigned for them than that which the uterine tumor suggests.

But there are greater evils than either sterility or the premature termination of pregnancy, to which patients affected with fibrous tumors of the uterus are liable. The annals of medicine are full of cases illustrating the dangerous character of this complication, which may expose the patient to one or all of three different perils. The tumor may mechanically prevent the passage of the child through the pelvis, and may thus even necessitate the performance of the Cæsarian section. It may interfere with the efficient contraction of the uterus after the expulsion of the placenta, and thus expose the patient to hemorrhage which it will be very difficult to control. Or lastly, it may interfere with the processes of involution of the womb after delivery, and may either itself undergo a morbid softening and disintegration, or may be the occasion, either in connection with inflammation of its own substance and of that of the womb, or independently of it, of peritonitis, always dangerous, too often fatal.

While I believe the risk of any of these untoward occurrences complicating labor to be very real and very serious, it is nevertheless my impression that the danger has been overstated by some writers of very deserved reputation. There can be no doubt but that the peril depends in great measure on the intimacy of the relations between the tumor and the uterine substance; and that those pediculated outgrowths which spring from the peritoneal surface of the uterus are of no great moment except in so far as by their size and position they encroach on the pelvic cavity, and interfere with the passage of the child. I know four women, one of whom has given birth to one child, the others to several, from the fundus of whose uterus there springs a tumor having all the characters of a fibrous outgrowth; and yet, with the exception of some disposition to hemorrhage in two of the cases (and that indeed by no means difficult to restrain), labor and its consequences have been uninterrupted by any untoward occurrence. Even in other instances, the exceptions to an unfavorable issue are far too

numerous to warrant us in admitting the disposition to disintegration and softening or suppuration of the tumor to be as invariable an attendant on advanced pregnancy as some writers suppose. My own experience, too, leads me to connect the fatal issue, when it does take place, more with peritoneal inflammation than with any constant change in the substance of the tumor; while, lastly, it is not to be forgotten that the softening and disintegration of fibrous tumors, when they occur in the unimpregnated condition, are not attended by any formidable symptoms.[1]

The bearing of these facts on the question of the induction of premature labor in pregnancy complicated with fibrous tumors of the uterus, must be reserved till after I have said what little there may be to tell you with reference to the general treatment of the disease.

LECTURE XVII.

UTERINE TUMORS AND OUTGROWTHS.

FIBROUS TUMORS. Treatment. Precautionary measures to retard their growth; management of menstrual periods, and palliative treatment. Alleged specifics: iodine, bromine, the waters of Kreuznach. Surgical proceedings; great hazard attending them. Sources of danger, and management of pregnancy and labor complicated with fibrous tumors.

WE now come, last of all, to the consideration of the *treatment* of fibrous tumors of the uterus. The treatment, indeed, of an irremediable disease may seem to require but brief notice, and to present but slender interest to the student of medicine. But in fact it is not so. There are as large opportunities for skill in palliating the irremediable ill, as in curing the sickness which gives the widest scope for the healing art to show itself most sovereign; and there are occasions, too, far more numerous, for the exercise of all those sweet charities of life which render our profession in its right exercise so unalloyed a blessing to mankind. Hereafter I shall have to plead the same reasons for begging your most heedful attention to the management of cancer, and of other ailments more hopeless, more constantly, more quickly fatal than that which we are now studying. I urge them on you now, however, because there is a not unnatural disposition on the part of the student and the young practitioner to fix their attention on the great diseases which admit of great remedies, and to pass almost unnoticed the slow, wearing ailments, in which each day's suffering is like that

[1] With reference to this subject and the practical questions connected with it, the reader may consult Puchelt, *De tumoribus in pelvi partum impedientibus*, 8vo., Heidelbergæ, 1840, cap. i, ii, v, pp. 58, 66, 104; Ashwell, *Guy's Hospital Reports*, vol. i, p. 300; Lever, ibid. vol. vii, pp. 98–103; and some remarks by Dr. Simpson which first appeared in the *Edinburgh Monthly Journal*, August, 1847, and are republished at p. 833 of vol. i, of his collected *Obstetric Works*, 8vo., Edinburgh, 1855.

of the day before; with no prospect indeed of return to health, but with a decline so tardy, marked by so few events, that the shadow on the dial seems scarcely to go down at all.

Fortunately, in the present case, the disease often has pauses in its course, which, though uncertain alike in their occurrence and their duration, are yet frequent enough to lend a little brightness to the patient's prospects. These, too, are still further cheered by the rare accident of a perfect recovery being now and then brought about by nature's hands; while concerning it we can foretell so little, that every patient may with almost equal reason hope that she herself will prove the happy exception to the general rule.

We have already seen enough of the conditions that favor the development and growth of fibrous tumors, to be able to infer the nature of those precautions by which their increase may be retarded. We find their growth to be more rapid, and their symptoms generally to be more formidable, during the years of sexual activity, than after the time when those functions have ceased; while pregnancy and its consequences are not only attended by certain positive dangers, but appear to be accompanied by a greatly accelerated rate of increase of the disease. Hence it may be regarded as a fortunate circumstance when the symptoms of this affection come on comparatively late in life, and we then venture to hold out to our patient the expectation of amendment taking place when menstruation ceases. Hence, too, a more encouraging prognosis may usually be expressed in the case of an unmarried woman, or of a widow, than of one who is still cohabiting with her husband. Apart, indeed, from the occurrence of pregnancy, there can be no doubt but that mere sexual intercourse is injurious to patients with fibrous tumor, and that the congestion of the uterus and pelvic viscera, and the increased vitality of the sexual organs which the act induces, favor its increase. If then your patient be a married woman, it is your duty to acquaint her with this fact; it is not generally your duty to do more; for often there are complicated questions both moral and physical involved, which you must not ignore, but into which, unasked, you have no right to intrude.

But while you must to a great extent leave this matter to be settled by your patient, there are some other points concerning which your advice cannot be out of place. Independent of the risks of hemorrhage which attend it, the menstrual period is always unfavorable to this class of patients, and the more quietly you can succeed in conducting them through it the better. Absolute rest through the whole of each period is of great importance; while, if much hemorrhage or severe pain accompanies it, the patient should remain in her bed for the first forty-eight hours, and should not move further than to her sofa during the whole of its continuance. If it sets in with severe pain, associated, as is usually the case, with abdominal tenderness, a few leeches over the hypogastrium, or the tender part of the tumor as felt through the abdomen, will often be of service, but the caution which I have

already given as to the inexpediency of leeching the uterus just before the commencement of a menstrual period, holds good in this case. Both the pain and the hemorrhage are often much lessened, not only by keeping the bowels acting with regularity at all times, but also by giving an aperient just before the discharge commences. If menstruation should be very excessive, the case must be treated just like any other case of menorrhagia, and in anticipation of profuse loss of blood, astringents may be employed from the very first day of the discharge appearing. Not infrequently there is a disposition to intercurrent hemorrhage between the periods, which may in many instances be warded off by complete rest at the time, by the avoidance of all stimulants, by salines and sedatives, such as the citrate of potash with tincture of henbane, and by the application of a few leeches to the abdomen, if the threatenings of loss of blood are accompanied with much pain. I do not think that in cases of fibrous tumor of the uterus very much is gained by the application of the leeches directly to the womb itself, though in simple hypertrophy of the organ that constitutes our most efficient mode of treatment. Sometimes, however, when menstruation is scanty, and, as is then generally the case, painful; or when there is considerable uterine tenderness, and a puffy or indurated condition of the cervix, much is obtained by this measure. I believe, however, that then it is the general state of the uterus, rather than the tumor of the organ, which is benefited. Much standing, much exertion, and especially much walking, are all objectionable, for all tend to produce and to keep up a congested state of the pelvic viscera. If these, however, be interdicted, and the patient be thereby condemned to a sedentary life, it is obvious that to maintain her health she must adopt a mild, unstimulating diet, that she must live more simply, even more abstemiously, than before. On the degree to which you can command your patient's confidence, and can induce her to adopt this somewhat self-denying kind of life, and on the extent to which she has fortitude to persevere in it, month after month, even year after year, will depend the measure of her health, her comfort, and her powers of usefulness.

It would profit but little to repeat all that has been said before when treating of dysmenorrhœa and of excessive menstruation; for the rules then given and the remedies then suggested apply equally to the mitigation of pain or the suppression of bleeding when dependent on fibrous tumor. It may not, however, be superfluous to add, that the steady observance of the hygienic rules which I have laid down is of more importance than the mere use of medicines for the permanent mitigation of either of these symptoms.

But it may be asked whether there is no remedy that exerts a specific influence on the growth of these tumors,—none by which we can obtain their absorption, or at least feel sure of putting a stop to their growth? I very much fear that no such remedy exists, or at least has been at present discovered. Mercurial preparations most certainly have no such influence; and the alleged

powers of iodine seem to have been very much overrated, for in a very large proportion of the instances in which it has been perseveringly employed, no effect whatever has appeared to follow its administration. The disintegration of the tumors, and their expulsion, have never, in my experience, succeeded the continued use of preparations of iodine, but have taken place unexpectedly, and independent of any assignable cause. Still it is possible that the rapid increase of these growths may be sometimes restrained by this agent, and I therefore employ it as our best, though but an uncertain remedy, and with a yearly lessening faith in its efficacy. To gain anything by it, indeed, it is essential that its use should be continued for many months; and, in order to this, the patient must be brought very gradually under its influence, since large or frequently repeated doses often disorder the digestion, occasion sleeplessness, or produce a febrile condition, which compels the discontinuance of the medicine. I seldom give more than one grain of the iodide of potass with twenty minims of the syrup of iodide of iron, twice a day; and though in addition I generally recommend the inunction of an iodine ointment over the tumor, yet this is rather as an additional means of impregnating the system with iodine than on account of any marked local influence which its employment in this manner has seemed to me to exert. The introduction into the vagina of balls of iodine ointment, for the sake of the supposed local action of the remedy on the tumor, does not appear to me to have evidence in its favor sufficient to counterbalance the obvious disadvantages attendant on constant local medication of the womb, and the daily introduction of irritants into the vagina. The same kind of objection, with the additional drawbacks attendant on the proved inefficacy of mercurials, attaches to the local use of the unguentum hydrargyri, and its injection, as has been recommended, into the cavity of the womb.

The bromide of potassium has been spoken of as of superior efficacy to the salts of iodine. I cannot say whether it deserves this character or not; but it certainly has the advantage of being better tolerated, and for a longer time, by the patient. It must also be remembered that the waters of Kreuznach[1] in Germany,

[1] Dr. Sutro, in his work on the *German Mineral Waters*, London, 1851, gives at page 256 the following result of an analysis by Professor Löwig of Zurich, of the contents of sixteen ounces of the water:

72.88	chloride of	sodium.
13.38	"	calcium.
4.07	"	magnesium.
0.62	"	potassium.
0.61	"	lithium.
0.27	bromide of	magnesium.
0.03	iodide	"
1.69	carbonate of	lime.
0.01	"	baryta.
0.10	magnesia.	
0.15	oxide of	iron.
0.02	phosphate of	alumina.
0.12	silica.	
94.02		

which have acquired considerable reputation for the special influence which they are supposed to exert over enlargements and fibrous tumors of the uterus, contain salts of bromine in much larger quantity than those of iodine. I am much at a loss, however, as to how far the alleged influence of these waters on fibrous tumors is a real one, and must confess that in no instance have I seen any marked diminution of a tumor result from their use, still less have I known a tumor become absorbed or disappear. The waters are no doubt possessed of great potency, and in many scrofulous and secondary syphilitic affections prove of much service. The mode of their employment, too, is very energetic, so that failure cannot be attributed, as when the waters are used in this country, to the imperfection or insufficiency of their application. For six or seven weeks the patient spends three-quarters of an hour daily in a bath, the strength of which has been increased by the gradual addition of from twenty-four to thirty pints of the *mother lye*, or liquor which remains after evaporation of the water, to four hundred pints of the water. Besides this, twice a day for an hour together, warm fomentations of the mother lye are applied to the abdomen, and these fomentations are increased in strength until they produce a burning sensation, and an eruption of pimples on the surface. The patient, in addition, takes the waters internally, and employs an enema of two ounces of the water, with twenty to thirty minims of the mother lye, every day after the bowels have acted. This treatment is continued until constitutional symptoms, indicative of what is regarded as saturation of the system with the remedy, are produced; and then, after a pause of three or four weeks, a second similar course of four or six weeks is undergone, and this plan is repeated in many instances for two or three successive summers.[1]

If to this energetic treatment there be superadded the observance of all those subsidiary measures, often too hard to enforce in other circumstances, but which seldom fail to be attended to when a patient leaves her home and places herself for some months under the care, not of an ordinary practitioner, but of one who seems to preside as a sort of genius of the place over the wonder-working spring, we certainly have all those conditions assembled from which most striking results might be anticipated. My own conclusions, however, are fully borne out by the greater experience of Scanzoni,[2] who says that he "does not believe that by these means any important diminution of a real fibroid tumor has ever been effected." It seems, too, from the statement of Dr. Prieger himself, a gentleman who first brought the waters of Kreuznach into notice, and who for many years practised there with well-merited reputation, that by far the greater proportion of cures occurred in his

[1] For this account of the plan pursued at Kreuznach I am indebted to a letter from Dr. Engelmann, who has practised there for many years, and has written a little book on the use of the waters in secondary syphilitic affections,—*The Baths of Kreuznach*, 8vo., Frankfort, 1852.

[2] *Op. cit.*, p. 237.

experience in cases of simple hypertrophy of the uterus, and not of fibrous tumors of the organ.

My own observation confirms Dr. Prieger's statement. I have seen simple enlargements of the uterus consequent on chronic inflammation of the organ, or a deficient involution after delivery or miscarriage, much reduced in bulk; and I have also seen the womb in whose substance fibrous tumors were imbedded grow smaller, not from reduction of the tumor, but from lessening of the hypertrophy of its tissue, to which the tumor had given rise. With this improvement, too, in the local condition, there has been a lessening of the discomforts from which the patient previously suffered. I do not know, however, that I have seen this relief, in cases of fibrous tumors, persist for long after the patient's return home, on her attempt to resume her previous mode of life; nor have I found it to be more complete or more lasting than I have seen follow in other instances from obedience to simple rules deduced from general principles of treatment. Still, when our remedies are so few, we cannot well afford to dispense with any, even though their virtues may be questionable; and I often sanction, or even suggest a visit to Kreuznach, though accompanying it with a hint that relief of discomfort, rather than absolute cure, is all that I can promise from the experiment.

I should also say that of late years the Kreuznach salt and the mother lye have been imported into this country; and patients anxious to make trial of their virtues can obtain them from most of the principal chemists in London. They are employed either in hip-baths, or in the form of epithems worn over the lower part of the abdomen, and I have known patients obtain relief from both of these proceedings. I doubt, however, whether the latter does more than act as a moderate counter-irritant, and whether the comfort afforded by the former is not due as much to the soothing influence of the warm water as to the medicinal action of the salt which it contains.[1]

If medicine, however, is so slow, and confessedly so uncertain in its action upon these growths, are they, you may inquire, equally beyond the reach of surgical interference? Such of them as spring from a distinct pedicle, and hang down into or beyond the uterine cavity, admit of removal either by the knife or the ligature; and concerning these fibrous polypi I shall have something to say presently. The non-pediculated growths, with the study of which we are now occupied, and those pedunculated tumors that spring from the outer surface of the uterus, are almost or altogether beyond our reach. A few cases are on record where the abdomen has been laid open, and the extirpation of a fibrous tumor from the outer surface of the uterus has been attempted, and even actually accomplished. In most of these cases the

[1] One pint of the mother lye and one pound of common salt in an ordinary hip-bath of 86° is a sufficiently close imitation of the baths of the mineral spring itself, differing from it chiefly in being stronger than the baths are at Kreuznach, in which the whole body is immersed.

operation was undertaken with the impression that the tumor was ovarian, and in all instances but one, which is reported by an American surgeon, Dr. Atlee, its completion was followed by the patient's death. It is a proceeding to be altogether deprecated, difficult to accomplish, almost certainly fatal if concluded, surrounded by dangers which wisdom cannot foresee, nor skill avert.

It would perhaps not be right to pass quite so sweeping a condemnation on another operation which, since its first performance by M. Amussat, has had several imitators, and which consists in the enucleation of fibrous tumors of the uterine walls by an incision made through the os uteri, or the lower segment of the womb. No one can have noticed the extremely loose connection between the uterus and fibrous tumors imbedded in its substance, without the feasibility of an operation for their removal occurring to his mind, and it was suggested, on theoretical grounds, by M. Velpeau, some years before the idea was put in practice in 1840 by M. Amussat. The results of it, however, are by no means encouraging, so long as we limit our inquiry to cases of enucleation of interstitial fibrous tumor of the body of the uterus, for twenty-eight operations yield fourteen deaths to fourteen recoveries, while in four of the latter the operation was incomplete, and a portion of the tumor was left behind.[1] If now to the published mortality

[1] The following references include all the cases with which I am acquainted that strictly belong to this category:

SUCCESSFUL CASES.

Amussat,	2 cases,	reported in full in *'Examinateur Médicale*, Feb., 1843.
Maisonneuve,	2 "	*Bulletin de l'Acad. de Méd.*, xiv, 722; and *Gazette des Hôpitaux*, Dec. 6, 1849.
Grimsdale,	1 "	*Liverpool Medico-Chirurgical Journal*, Jan., 1857, p. 54.
Teale,	1 "	*Medical Times*, March 22, 1856, p. 283.
Atlee,	7 "	*Transactions of American Medical Association*, vol. vi, p. 559.
Davis,	1 "	*Transactions of the Obstetrical Society*, vol. ii, 1861, p. 17.
	—14 cases.	

FATAL CASES.

Boyer,	1 case,	*Révue Médicale*, March, 1845; death in 6 days.
Bérard,	2 "	*Bull. de la Société Anatomique*, 1842, p. 82; death in 5 weeks; in his other case mentioned by Jarjavay, death took place in 2 days.
Maisonneuve,	1 "	*Bulletin de la Société de Chirurgie*, vol. i, pp. 458, 474. M. Maisonneuve does not himself mention the death of the patient, but the fact is mentioned by Jarjavay, who states that death took place at the end of a month. See the translation of his thesis, "Des Operations aux Corps Fibreux de l'Uterus," in vol. vii, of the *Analekten für Frauenkrankheiten*, p. 426.
Chiari,	1 "	*Klinik der Geburtshülfe*, &c., p. 408; died in 36 days.
Baker Brown,	2 "	*Medical Times*, July 25, 1857; death of one in 30 hours, of the other in 13 days.
Atlee,	5 "	*Loc. cit.* The date of death was 1 month, 11 days, 5 days, 7 weeks, and 20 days respectively, after the first operation was attempted.
Simpson,	1 "	*Ed. Monthly Journal*, March, 1848, and republished in the *Obstetric Memoirs*, p. 118; died in 6 days.
Self,	1 "	
	—14 cases.	

The temptation to suppress due mention of cases having an unfortunate issue

we make some addition,—and I fear it ought to be a very large one,—for suppressed, or at least for non-reported cases, we arrive at a result which compels us to class the operation among the most hazardous in surgery. These risks, too, be it observed, are incurred not in the case of a disease surely and rapidly destroying life, but of one that runs a slow course, that often comes to a standstill of its own accord, and that almost always affords a prospect of months or years of valetudinarianism indeed, but still of life, which the operation may cut short in a few days. Success, on the other hand, by no means necessarily frees the patient from her ills, for fibrous tumors are but seldom solitary, and the removal of one may but serve to bring to light the existence of another beyond the reach of surgical interference.

In the performance of the operation itself, the main difficulties seem to arise from the size of the tumor, the inadequate space afforded by the opening of the os uteri, which it has generally been necessary to incise or to dilate forcibly, and from a thinness of the uterine parietes, so extreme as to necessitate the most cautious manipulation, lest the peritoneal cavity should be opened in the endeavor to extract the tumor. It must, indeed, be impossible for any one to read the particulars of operations such as those of Amussat and Boyer, where the patient was more than two hours under the hands of the surgeon; or of that of Maisonneuve, in which the hemorrhage that immediately followed it was very alarming, without feeling much hesitation as to the propriety of exposing a person to so great a risk for advantages so uncertain. It is not, however, the loss of blood, for that is not in general considerable, nor the immediate effect of the shock, which is most to be apprehended, for no patient appears to have died from hemorrhage, and only two from the direct shock, and one of these patients had already been exhausted by frequent operations. Peritonitis, phlebitis, and pyæmia, the consequences of violence done to the uterus of women exhausted by large and frequently repeated floodings, are dangers from which but few have altogether escaped; under which I fear that correct statistics would show that most have succumbed.

seems almost insurmountable, while it vitiates all the conclusions which we may attempt to draw from the statistics of these adventurous operations. Thus, in the discussion that arose at the Société de Chirurgie, on Dec. 5, 1849, with reference to M. Maisonneuve's third and fatal case, that gentleman himself mentioned having seen a "good number" of unsuccessful attempts at enucleation of fibrous tumors, all of which had a fatal issue; while M. Huguier relates an instance where death took place two days after another unsuccessful operation at which he himself assisted. Our tables, however, bear no record of these failures and deaths, any more than of two other fatal cases of Dr. Simpson's, making three deaths out of four operations, which are referred to by Dr. Arneth, of Vienna, in his "Impressions of a Journey," published in the *Wiener Zeitschrift*, viii, 3, 1852, and *Schmidt*, vol. lxxv, p. 323. It is to be regretted that Dr. Simpson's *Obstetric Memoirs* have had so little of his supervision as to contain no account of many of those failures in this or in other cases, which no skill can prevent, which are known to have modified his own practice, and which might afford lessons so well worth learning to others.

The amount of difficulty in the performance of the operation, and the degree of risk which it will entail on the patient, can scarcely be estimated beforehand; and of this it would not be easy to give an apter illustration than is furnished by my own unsuccessful case of attempted enucleation of a fibrous tumor.

The patient was thirty-nine years old, the mother of three children. The first symptom of her disease had appeared a year before, when she had a sudden attack of most profuse hemorrhage, which returning thrice at intervals of a fortnight, reduced her to a state of extreme exhaustion. The enlarged uterus was only with difficulty felt by the hand over the pubes; its enlargement was due to the presence of a tumor as large as an orange, imbedded in the anterior uterine wall, which had distended the os uteri to about the size of the top of a wine-glass, but did not project beyond its margins, the surface of the tumor being adherent to the anterior uterine lip. The uterine sound appeared to circumscribe more than half of the growth. The moderate size of the tumor, the open state of the os uteri, and the circumstance that so large a portion of the tumor was unattached, seemed both to Mr. Paget and myself to render the case one in which, if hemorrhage returned dangerously, enucleation might be attempted. For a few months no considerable bleeding took place; but then the hemorrhages returned; and ten months after the patient first came under my notice, the operation was attempted, the tumor apparently retaining very nearly its original size and relations. A pair of hooks were firmly fixed in the tumor, and by their means the uterus was drawn down near to the vulva. The anterior uterine lip was then dissected off from it, and as far as the finger could reach the shelling of the tumor out of its investing membrane was easily accomplished. The hand was partly introduced into the cavity of the womb, and the detachment of the tumor posteriorly was accomplished; but no effort succeeded in reaching high enough in front to complete its separation. Attempts were made in vain to separate the growth by traction, or to invert the uterus so as to bring it within reach of the finger, but in vain; and the operation was left incomplete after the enucleation of about four-fifths of the tumor had been accomplished. Before abandoning the attempt, however, incisions were made in various directions into the substance of the growth, in the hope that its vitality might be destroyed, and that eventually it might be got rid of in a state of disintegration.

The operation lasted about an hour, very little blood was lost in its performance, but the patient suffered much, and was left in a state of great depression, which seemed to require the liberal employment of stimulants. As this condition subsided, the complaints of abdominal pain became greater, and the tenderness more exquisite, on which account two dozen leeches were applied on the third day after the operation, and mercurials were given which produced salivation in five days, marked relief of all the symptoms taking place about the same time. A profuse, fetid, and very

acrid discharge came on soon after the operation, and continued for more than a month, causing the patient much distress by excoriating the vulva and nates; but though the whole of the tumor disappeared, it was but once that a very small portion of it was discovered in the matter which flowed from the vagina. The operation was performed on December 21st; by January 5th the patient seemed to be in a state of safety; and before the end of the month she was able to walk about the ward. On February 11th she complained of some increase of pain in the left iliac region, which subsided on the application of half a dozen leeches; and which seemed the less to call for any serious anxiety, since the patient a few days before had menstruated scantily, though naturally. In the afternoon of February 14th, however, the patient, who had been up and walking about in the morning, was seized with a violent rigor and a return of pain, which once more subsided completely on the application of a few leeches, and the administration of an opiate. On the 20th she was so well that she was about to leave the hospital the next day; but at two o'clock in the morning was attacked by violent shivering, intense abdominal pain, and those indications of collapse which accompany peritonitis from intestinal perforation, and died at four o'clock in the afternoon of the same day.

After death, all the evidences of recent acute peritonitis were discovered, with a considerable quantity of a sero-purulent fluid; which in the pelvic cavity was found to consist almost entirely of pus. This pus seemed to proceed from the cellular tissue between the uterus and rectum, though the abscess there did not appear to have been large. The matter had escaped into the peritoneal cavity through several small openings formed by sloughing of the serous membrane in that situation. The uterus was healthy; the upper part of its cavity retained its ordinary appearance, but a little above the os there existed a cavity formed at the expense of the uterine wall, which was here less thick than elsewhere. This cavity, which was evidently the bed whence the tumor had been removed, measured $1\frac{1}{4}$ inch in its lateral diameter, half an inch in depth, and the same in its antero-posterior diameter. It was lined by soft, pale granulations, and no trace of the tumor was to be seen in it.

But for the bursting of this abscess into the peritoneum this case would have been numbered among the successes. The fatal accident, it is true, was one of very rare occurrence, unlikely to happen again on another occasion, but it is this very liability to rare accidents which foresight cannot anticipate nor skill prevent that serves to distinguish these exceptional proceedings from those operations whose indications can be clearly defined and their dangers accurately estimated, and which fall within the more legitimate domain of surgery.

It seems to me worthy of consideration how far the mere incising fibrous tumors, so as to destroy, or, at any rate, greatly to impair

their vitality, might be substituted for the more hazardous attempt at their entire enucleation. In the case just narrated, this might have been done without the infliction of any such violence on the uterus as was inseparable from the attempt at the complete removal of the tumor; and some instances have since been recorded, in which the gouging out a portion from the centre of a fibrous tumor of the uterus has proved successful.[1] The great hazard attending this, as well as all other operations on the sexual organs of women, is that of the supervention of pyæmia; and it must not be forgotten that the previous exhaustion of the patient by frequent hemorrhages renders her specially liable to this accident.

But while the hazard attendant on operations for the enucleation of interstitial fibrous tumors of the uterus, when still imbedded in the walls of the organ, is so extreme as to render them generally inadmissible, and to remove them to that class of exceptional proceedings which the special condition of the patient, and the unusual dexterity of the surgeon alone justify, there is a class of cases in which the attempt at the removal of these growths may be admissible. Such are those instances, some of which are recorded by Lisfranc,[2] where a small tumor was imbedded in the substance of the uterine lip, and its removal could consequently be effected without any violence to the cavity of the womb. A case of this kind was recently under my care in St. Bartholomew's Hospital. The tumor, which weighed $2\frac{3}{4}$ ounces, and which presented all the ordinary characters of a fibrous tumor, was imbedded in the posterior lip of the uterus of a patient aged forty-seven. An incision was made by Mr. Paget along the whole posterior surface of the uterine lip, and was carried forwards to the margin of the os. The growth was then shelled out by the finger with the greatest ease, except at one small point at its front and upper part, where it adhered firmly to the uterine tissue, but was detached by a few strokes of the bistoury. No hemorrhage of importance, nor any bad symptoms, followed the operation, and the patient left the hospital quite well in a fortnight.

The operation, too, is comparatively free from danger in those cases where the tumor has approached the pedunculated form, and has consequently been easily reached through the widely open or easily divided os uteri, or perhaps has admitted of still readier removal, owing to its having passed beyond the orifice of the womb, and come to lie almost completely within the vagina. The operation here would seem to stand on much the same footing with operations on pedunculated tumors or polypi; and the details of cases such as those of Dr. Pancoast,[3] Mr. Teale,[4] Dr. Gil-

[1] Baker Brown, *Obstet. Transact.*, vol. iii, p. 67.
[2] *Clinique Chirurgicale*, &c., vol. ii, pp. 172, 173, 178, 179.
[3] *Boston Med. Journal*, Oct. 9, 1844.
[4] *Med. Times*, Aug. 20, 1853; and *Ibid.* March 22, 1856.

bert,[1] and M. Langenbeck,[2] appear to bear out the correctness of a supposition which has all theoretical probabilities in its favor. Absolute safety, however, cannot be claimed even for this simple operation. I performed it once on a patient who had long suffered from a fibrous tumor, which, growing somewhat in a polypoid form, had on three previous occasions been partially removed. At length spontaneous inversion of the uterus took place, and the tumor with the inverted womb was now easily drawn by a pair of midwifery forceps beyond the vulva. The mass, weighing six ounces, was readily shelled out of the uterine tissue by the hand, and scarcely any blood was lost in accomplishing this; the inverted womb being afterwards readily replaced. Seventeen days afterwards the patient died of pyæmia; a large coagulum, in which pus-cells were abundantly present, filled the inferior vena cava, and there were purulent deposits in the lungs, spleen, and left kidney, though the large uterus, its appendages, and its veins, were perfectly healthy.

There is still one resource left us in cases where the hemorrhage produced by a fibrous tumor is very formidable and uncontrollable, while the patient's condition forbids the adoption of any grave surgical proceeding. This consists in making free incisions into the os uteri, and great diminution of the bleeding seems almost always to have resulted from it,[3] though I confess that I do not understand the mode in which this effect is to be explained. I once had recourse to it with partial success; but the patient, already much exhausted, sank a few weeks after under the slight

[1] *Boston Med. Journal*, vol. xxxi, p. 350. For this last reference, and also for calling my attention to Dr. Atlee's cases, I am indebted to some very interesting papers by Hutchinson, in the *Medical Times*, July 25 to August 15, 1857. Four of the cases, however, which he includes in his table being those of operations on two patients with recurrent fibroid tumor of the uterus, appeared to me to be out of place there, and for the reason assigned in the text; the seven cases just referred to seemed to require to be ranged in a different category from that to which operations on interstitial fibrous tumors belong. This division appears to me to convey a juster impression of the sources of danger from the operation than one based on the mode of its performance. In many, enucleation by the induction of gangrene was attempted, only because primary enucleation had been attempted and failed. The very uncertainty in cases of interstitial fibrous tumor as to which operation will be practicable, or whether both may not alike prove impossible, constitutes to my mind the great objection to these proceedings. The real question is obscured, if stated so as to seem one concerning the comparative merits of two kinds of operations.

[2] *Deutsche Klinik*, 1859, p. 1. Three cases are related, one of which does not belong here, since the operation was performed as a matter of necessity during labor, when the patient was already much exhausted, and death was attributable to the delay rather than to the operation. The other two cases, which had a successful issue, illustrate the indications for the performance of the operation, which M. Langenbeck defines as being "The youth of the patient, the dangerous nature of the hemorrhage, and the seat of the tumor in the substance of either lip or of either wall of the cervix uteri, so that it can be reached by the knife, without forcibly drawing down the womb." Two other additional cases by M. Santesson and M. Janger, both of which had a favorable issue, are related in Schmidt's *Jahrbücher*, 1858, vol. 100, p. 41.

[3] See some cases recorded by Dr. McClintock, *op. cit.*, p. 147.

hemorrhage which still continued, and symptoms of pyæmia for a few days preceded her death.

In conclusion, and before taking leave of the subject of fibrous tumors, a few remarks must be made on the management of cases in which they occur as complications of pregnancy or labor. It happens occasionally, as in a case which some years since came under my own observation, that the pelvic cavity is found at the commencement of labor occupied by a large and firm tumor, the existence of which had not been betrayed previously by any symptoms whatever of uterine disease. In some of these cases the Cæsarean section has been performed, but I am not acquainted with any instance where a favorable result has followed the operation when rendered necessary by uterine tumor. The presence of the growth both interferes with the due contraction of the womb, and thus exposes the patient to great risk of hemorrhage, and also, if this danger be surmounted, seems to insure the supervention of inflammation of the uterus and peritoneum of a kind so perilous, that in every recorded instance it has hitherto proved fatal. Unfortunately the cases are but very few in which extirpation of the tumor is possible, for, in comparison with any operation by which the peritoneal cavity is laid open, that would seem to be far less hazardous. The successful removal of polypi during labor, and the extirpation of large fibrous tumors of the pelvic walls,[1] encourage to such a proceeding; but the only instances with which I am acquainted of the actual enucleation of a fibrous tumor from the uterus itself during labor, are related by M. Danyau,[2] M. Langenbeck,[3] and Dr. Keating.[4] M. Danyau's patient was thirty years old, had given birth to three children, after easy labors, and had reached the end of her fourth pregnancy, though slight hemorrhage had been going on for three weeks. Forty hours after the escape of the liquor amnii, a foot of the child was felt presenting, while the pelvic cavity was almost completely filled by a tumor which seemed to be formed by the thickened posterior lip of the uterus, and which did not leave a space of above three-quarters of an inch to an inch and a quarter between itself and the symphysis pubis. The child having been ascertained to be dead, and no question therefore arising as to the performance of the Cæsarean section, M. Danyau, having consulted

[1] As in the remarkable case related by the late Professor Burns of Glasgow, in his *Midwifery*, eighth edition, 8vo., London, 1832, p. 33.

[2] *Gaz. des Hôpitaux*, No. xlii, 1851; and Schmidt's *Jahrbücher*, vol. lxxi, August, 1851, p. 190.

[3] *Loc. cit.*, p. 3.

[4] *American Journal of Med. Sciences*, May, 1858; and Schmidt, vol. 100, p. 40. I purposely do not go into the consideration of those cases, of which several are on record, with varying results, of the extirpation of polypi or of non-pediculated tumors soon after delivery, for I have no personal experience on the subject. My leaning, however, would be to non-interference with them in the puerperal state, unless symptoms urgently called for an opposite course, since I should fear that the greater facility of their removal would be more than outweighed by the greater risk of purulent absorption afterwards.

with Professor Dubois, carried a bistoury on two fingers of his left hand through the os uteri, which was open to the size of the top of a small wine-glass, made a longitudinal incision through the anterior and upper part of the tumor, and then succeeded with two fingers of the right hand in shelling it out of the uterus, and removing it from the pelvis. The tumor weighed twenty ounces seven drachms; its longest diameter was five inches and three-quarters; its shape conical, with the apex downwards. The extraction of the child was easily accomplished after the removal of the tumor, and the patient recovered without any bad symptoms, though a considerable quantity of venous blood escaped at the commencement of the operation, when the tumor was first cut into. The patients of M. Langenbeck and of Dr. Keating were less fortunate. The former, exhausted by the previous long duration of labor pains, died within twenty-four hours, while the latter was attacked by puerperal phlebitis, which proved fatal on the eighth day.

In all cases, however, where it is practicable, operations on the parturient uterus are to be avoided, and the first thing to ascertain with reference to any tumor is whether it admits of being moved out of the pelvic cavity, since, if that can be done, it is obviously attended with the least possible hazard. In my own case it was readily accomplished; and there can be little doubt but that the same proceeding would have been successful in the case well described and delineated by Dr. Etlinger,[1] in which Professor Kilian of Bonn performed the Cæsarean section on a patient whose pelvis was occupied by a fibrous tumor that grew by a rather broad peduncle from the posterior surface of the womb. This person died forty-eight hours after the operation, from the effects of the hemorrhage which attended it. My patient survived till the sixth day, and I cannot but attribute her death to an attempt which was made (injudiciously on my part) to puncture the tumor before trying to carry it above the pelvic brim. There was no general peritonitis, but the wound in the tumor was gaping widely; the tissue about it was of a black color, and discoloration extended thence inwards towards the centre of the tumor. The dark portion of the tumor was softened, but the rest of it was of a vivid red color, and neither it nor the other tumor, which was about the same size, namely, that of the head of a fœtus at seven months, presented any trace of that general softening and disintegration which have been alleged to occur in these growths after delivery. The intestines in the left iliac fossa were matted together by recent lymph, and about four inches of them, just where they lay in contact with the punctured tumor, was much congested, quite rotten, and their posterior part was converted into a large greenish-black slough. This slough corresponded to a large slough on the outer and upper part of the punctured tumor. The other tumor was

[1] Etlinger, *Observationes Obstetriciæ*, 4to., Bonnæ, 1854, see pp. 50–53, and plates i and ii.

of a rose tint; the uterus, which presented some half-dozen small tumors about the size of peas on its surface, was, in other respects, perfectly healthy. It seemed, in short, as if the puncture of the tumor had been the point of departure whence all the subsequent mischief proceeded.[1]

In all instances, then, the endeavor to carry the tumor out of reach should precede any attempt at reducing its bulk by puncture. In the event, however, of the former failing, the apparent solidity of the growth must not be taken as warrant sufficient for dispensing with the trocar, for a cyst, if very tense, either from the accumulation of fluid within, or from any very great pressure upon it from without, will often yield, even to the well-practised finger, scarcely any sensation by which the nature of its contents can be suspected.

Lastly, I am disposed to think that in almost all of these cases it will be preferable to turn the child rather than to make any attempt at extracting it with the forceps; and even if the want of space be very great indeed, craniotomy, followed by turning (and little though it may be used in this country, I cannot refrain from adding the use of the *céphalotribe* to break up the base of the skull), will, I doubt not, enable us to carry to a safe conclusion a case which at first appeared to offer no alternative but the performance of the Cæsarean section.

At the close of the last Lecture, I stated my dissent from the opinion that there is a constant, or at least a general tendency on the part of these tumors to pass into a state of softening, or disintegration during pregnancy. I do not therefore conceive that the induction of premature labor, and still more of abortion, simply because a fibrous tumor is connected with the uterus, is either necessary or justifiable. The presence of a fibrous tumor so encroaching on the pelvic cavity as to render labor difficult or dangerous, is of course an indication for the operation; so also may perhaps be the experience of a previous delivery which had been followed by symptoms of uterine inflammation. The mischief, however, dates, I believe, in all instances, not from any particular epoch of pregnancy, but from the expulsion of the ovum whenever that occurs; and the greater hazard attendant upon labors at the full period, is due to the greater violence undergone by the uterus and the tumor during the passage of the fœtus in advanced than in early pregnancy. Each case, then, must be considered and treated on its own merits; the mere fact of a pregnant woman having a fibrous tumor of her uterus, cannot be taken as a sufficient indication for the induction of abortion or of premature labor.

[1] A second case, almost identical in its features with the foregoing, and, like it, having a fatal termination, came under my notice in 1862, and has been reported by Dr. Madge, in the fourth volume of the *Obstetrical Transactions*.

LECTURE XVIII.

UTERINE TUMORS AND OUTGROWTHS.

FIBROUS POLYPI; their structure, vascular supply, and source of hemorrhage which attends them. Their symptoms. Operations for their removal; comparative merits of ligature and excision. Management of labor complicated with polypus.
RECURRENT FIBROID TUMORS OF UTERUS. Their rarity; illustrative cases.
FATTY TUMORS OF UTERUS.
TUBERCULAR DEGENERATION OF UTERUS. Its characters, seat of the disease, and connection with general tuberculosis.

IT still remains for us to consider that variety of uterine fibrous tumor which grows from the inner surface of the womb, or which less frequently springing from either lip, hangs down by a stalk or pedicle into the cavity of the uterus, or into the canal of the vagina. The impropriety of the term *Polypus*, as applied to these solid growths, need not occupy us now; it is sufficient that it has been universally adopted, and is so well understood, that no one will be misled by the incorrect terminology.

In general structure these tumors are almost identical with those we have hitherto been studying; the only important difference, perhaps, being, that whereas the growth in all the former cases was distinct from the uterine tissue, even though imbedded in it, or projecting from it, some polypi are positive outgrowths of uterine tissue, their texture and that of the womb itself being inextricably interwoven.[1] Even in these instances, however, the substance of the growth is usually firmer, denser, and less vascular than that of the adjacent uterine wall; while on the other hand, the pediculated fibrous tumor is generally, when growing from the interior of the womb, more succulent and better supplied with blood than similar tumors whose position and relations are different. The pedicle of these tumors is composed of uterine substance mingled with more or less dense cellular tissue, and though generally single, is sometimes formed by the coalescence of two or three bundles of fibres springing from different, though nearly adjacent, parts of the womb. A layer of uterine substance is continued from the pedicle for a varying distance along the tumor, sometimes investing it completely, at other times only in part, as the cup surrounds the acorn, or the calyx the petals of a flower. Besides this, the polypus is always covered by the mucous membrane of the uterus, which becomes firmer and denser than natural, both it and also the muscular fibres of the womb itself undergoing development somewhat in proportion to that of the tumor. The tumor can often be shelled out of its coverings just in the

[1] As in a preparation in the Museum of St. Bartholomew's Hospital, sketched and referred to by Paget, *op. cit.*, vol. ii, p. 131, fig. 11.

same manner as an ordinary fibrous tumor may be enucleated from its investment of dense cellular tissue; but this is not invariably the case, and the connection between the substance of the polypus and the membrane that surrounds it is now and then very intimate. The vascular supply, as already stated, is more abundant than that of other fibrous tumors, though it may generally be observed that neither the arterial trunks entering the tumor nor the veins leaving it are proportionate in size to what might be anticipated from the quantity of blood in its substance. Some part of its supply of blood also comes to the polypus through the mucous membrane by which it is invested, though even in this no considerable vessels are in general perceptible. This comparatively small apparent supply of blood to these tumors, coupled with the fact that they always give rise to very profuse hemorrhage, while such hemorrhage is always arrested by a ligature applied round their pedicle, have contributed to form a problem in uterine pathology, which, till within a recent date, received very conflicting and very unsatisfactory solutions. The profuse bleeding which is excited alike by non-pediculated fibrous tumors, and also by the very minute vascular polypi of the organ, seems to show that it is rather from the irritated mucous membrane of the uterus than from the surface of the tumor itself that the bleeding flows. The same fact, too, is further illustrated by facts such as the following: A woman, aged forty-six, was admitted under my care into St. Bartholomew's Hospital. She was a single woman, and, with the exception of a sense of weight at the lower part of the abdomen, since the cessation of her menses at the age of forty-three, had had good health till three weeks before she came under my notice. She was then suddenly attacked by profuse hemorrhage, and at the same time a tumor had partially forced its way through her vulva. The loss of blood had continued more or less since, and the patient, at her admission, seemed very much exhausted by it. This tumor, which at its lower part was already in a state of superficial slough, was a fibrous tumor which measured seven inches in length by four in diameter at its widest part, and weighed one pound one ounce and a half. It was connected by a small and short pedicle with the posterior lip of the uterus; an arterial trunk about the size of one of the digital arteries seemed to be the source whence its supply of blood was derived; though it presented an unusual degree of vascularity, and its lower part, which had projected beyond the vulva, and had been subjected to pressure, was so intensely congested as to have an almost apoplectic appearance. Now this large and vascular growth had gone on, doubtless for years, increasing in size, and yet producing no symptoms, giving rise to no hemorrhage, until having partially escaped beyond the vulva, it began to drag upon the womb, to pull it downwards, and to irritate it, and then all at once, from the womb itself, for there was no appearance of bleeding from any part of the surface of the tumor, sudden and most formidable hemorrhage broke forth. The suspension of bleeding by the application of a ligature

around the pedicle of a polypus does not of necessity imply that the source whence the hemorrhage proceeded is thus mechanically shut off, but is also intelligible on the supposition that the ligature interrupts the vital relations between the tumor and the womb, and thus renders the polypus a far less powerful excitant of the uterine mucous membrane than it was before. No stronger proof can be afforded of the difference between a vital and a mere mechanical stimulant of the uterus than is given by the comparative impunity with which, in many instances, the metallic stem of the uterine supporter is borne within the cavity of the womb, as contrasted with the almost irrestrainable hemorrhages that are often excited by even the smallest vascular polypi.

Fibrous polypi are susceptible of the same kinds of changes as may take place in fibrous tumors elsewhere situated. I am not aware, however, of their undergoing that atrophy which occasionally occurs in other fibrous tumors of the uterus, while calcareous deposits in their substance are excessively rare. On the other hand, both œdema of their substance, and the extravasation of blood into their tissue, are far from being of unusual occurrence; and when they have passed through the os uteri into the vagina, the membrane covering their lower surface not infrequently becomes ulcerated, or passes even into a sloughing condition, which may extend to the adjacent substance of the growth. They do not, however, so far as I know, ever shell out completely from their investment as some other fibrous tumors now and then do; and when spontaneously detached and expelled, their natural cure is brought about by their pedicle giving way.

Formed, as these polypi usually are, within the cavity of the uterus, their influence upon that organ seems to depend somewhat on the situation whence they spring. Thus if it arise low down in the cervical canal, the tumor soon grows beyond these limits, and hanging down into the vagina, may acquire a considerable size without exerting much influence on the womb itself, neither disturbing its functions nor producing any considerable hypertrophy of its tissue. On the other hand, those polypi which are developed from some point high up in the womb, naturally remain within its cavity till they have acquired a considerable size, and thus give rise to enlargement of the organ, and to thickening of its walls. There seem, however, to be considerable diversities between the relations which the polypus continues to bear in different cases to the organs within which it is developed. In the great majority of instances, before it has acquired the size of a small apple, the os uteri, against which the lower part of the polypus lies, gradually dilates to allow its passage, and the growth is then found hanging down into the vagina, its pedicle embraced, though but seldom tightly constringed, by the orifice of the womb. Sometimes, however, I know not why, this process is effected much less quickly; the margins of the os uteri do not yield so as to allow of the easy exit of the polypus, but violent uterine action is set up, and under efforts like those of labor, and which recur in paroxysms, and

then subside, and again recur after a lapse, perhaps, of many days, the polypus is literally born. It is usually under these violent throes that the womb, as was explained in a former Lecture,[1] sometimes becomes literally inverted, or turned inside out; an accident which is brought about less by the mere mechanical action of the weight of the tumor than by the efforts which it excites in the muscular tissue of the womb.

When once in the vagina, the growth of the polypus still goes on; and probably even more rapidly than before, since it is no longer subjected to the same degree of pressure as while it was within the uterus. For the most part, however, the symptoms to which it has given rise have been so serious as to lead to its early detection, and it is removed before it has acquired any very formidable dimensions.[2] If it be allowed to sojourn for any time in the vagina, that part of the tumor to which the air has access seldom fails to become ulcerated, while it is further by no means unusual for the adjacent surface of the vagina to become likewise inflamed and ulcerated, and for adhesion then to take place between the two. A similar occurrence happens occasionally, though much less often, between the tumor and the lining membrane of the uterus itself; and either of these accidents may make the diagnosis obscure, and must render all forms of operative interference unusually difficult.

The two grand *symptoms* of polypus uteri are hemorrhage and leucorrhœa, symptoms which go on increasing in severity and continuance until, if their cause be undiscovered or unremoved, they will at length exhaust and destroy the patient. At first the seasons of menstruation are those when the hemorrhage takes place, the periods lasting longer, returning sooner, and being accompanied with a more profuse loss than was their wont, while abundant leucorrhœa persists in their intervals. Then the periodicity of the hemorrhage ceases, for its presence becomes general, or constant, and it is at length found impossible to keep any account of when menstruation last took place, or when it may next be expected.

A constant sense of bearing down may be experienced, or some mechanical inconvenience or other, from the pressure of the polypus, if large, upon adjacent parts; or expulsive efforts may sometimes occur; but they are by no means constant; and the last-mentioned symptom in particular is met with only in a small minority of cases. It has been said that the escape of coagula of an annular shape, due to their being formed around the pedicle of the polypus, is characteristic of this affection. This, however, is one of those plausibilities which savor more of the study than of

[1] See Lecture XIII, on Inversion of the Uterus, p. 187.

[2] I have already mentioned one case where the polypus weighed 1 lb. 1½ oz. An instance is related by Heyfelder, *Studien im Gebiete der Heilwissenschaft*, 8vo, Stuttgart, 1838, vol. i, p. 269, of a polypus which weighed 1 lb. 3 oz. 7 dr.; and numerous references are given by Meissner, *op. cit.*, vol. i, p. 838, to cases of polypi of enormous dimensions.

the bedside, and experience does not confirm the statement. The only rule, indeed, which I can give you as to the diagnosis of polypi is, that whenever hemorrhage, having taken place causelessly at one menstrual period, recurs equally without cause at the succeeding one, you should on no account omit making a vaginal examination. The tumor projecting through the os uteri, encircled by its lips, and passing up into its cavity, perhaps beyond the point to which your finger can reach, can scarcely be mistaken for anything else, except, perhaps, for the inverted uterus, the distinctive characters of which I have already endeavored to point out.[1] Neither, indeed, can the nature of those polypoid growths which proceed from one or other lip of the uterus be doubtful, since the os uteri will be perceptible either in front of the growth or behind it.

In cases where the polypus has not yet passed through the os uteri, the *diagnosis* may be very difficult, for hemorrhage and leucorrhœal discharge are common to many uterine ailments, while the growth itself may not be sufficiently large to produce any marked increase in the size of the womb, still less to expand its lower segment. In doubtful cases the uterine sound is often of much service, since as, by means of it, we ascertain either that the uterine cavity exceeds its natural dimensions, or is limited to them, so the presumption in favor of the presence of some tumor in the womb is either greatly strengthened, or altogether refuted. Sometimes, however, the introduction of the sound is very difficult, or, from its extremity impinging on the body of the tumor, is altogether impossible; while even at the best, though the sound may raise our presumption of the existence of a polypus almost to a certainty, we are not thereby at all assisted towards its removal. The ingenuity of Professor Simpson,[2] however, has furnished us, in the sponge tent, with a means by which we can readily dilate the os uteri sufficiently to make a careful examination of the interior of the womb, and to perform any operation which the tumor may call for, almost as easily as if it had already descended into the vagina.

This brings me, in conclusion, to consider the best means of *removing* these fibrous polypi of the uterus, for I will not waste your time in repeating again all the measures by which you must try for the moment to stanch the profuse hemorrhage to which these growths sometimes give rise. Now there are two different proceedings, each of which has been strenuously advocated by some persons, and equally strongly reprobated by others.[3] One of these consists in strangulating the growth by means of a ligature, the other in its excision with the scissors or some other cutting instrument. The apprehension of dangerous bleeding from the

[1] See p. 199.

[2] *On the Detection, &c., of Intra-uterine Polypi*, in *Ed. Monthly Journal*, Jan. 1850, and *Obstetric Memoirs*, vol. i, p. 122.

[3] See a paper by Dr. Simpson, *Obstetric Memoirs*, vol. i, p. 150, strongly condemnatory of the use of the ligature.

removal of polypi, to which mistaken anatomical views in a measure contributed, led to the adoption of the ligature in the first instance; but its use has now, with propriety, been almost universally abandoned. The reasons for the discontinuance of its employment are, that the application of the ligature is almost always tedious, often difficult; that while in the case of the smaller polypi and of those with thin pedicles, its employment is superfluous, its action when the pedicle is thick is both slow and uncertain, and it of necessity condemns the patient for days to all the discomforts arising from the decay of the strangulated tumor. But further, the operation is attended not merely by discomfort, but also by positive danger, partly from the tissue of the uterus itself being almost unavoidably included in the ligature, partly from the risk of phlebitis being set up by the absorption of the putrid débris of the decaying polypus. That these dangers, too, are far from being imaginary, you may satisfy yourselves by visiting any of the anatomical museums of this metropolis, all of which I think you will find contain specimens of polypi partially detached, or of uteri from which the growth had been quite separated by ligature, but in which the supervention of inflammation had destroyed the patient.

The reason alleged for the preference of the ligature to the excision of polypi is the risk of hemorrhage attending the latter operation. My own experience of twenty cases of excision of fibrous polypi unattended by hemorrhage, is too small to be of much weight; but Velpeau[1] states that no instance of troublesome hemorrhage occurred to him in twenty cases in which he excised polypi; Lisfranc[2] states that he met with it in but two out of 165 cases; and Dupuytren[3] also in but two out of nearly 200; while they all refer to instances of phlebitis, or of peritoneal inflammation leading to a fatal issue after the operation by ligature. There are, indeed, a few instances on record of inflammatory symptoms succeeding to the excision of polypi, just as there are a few in which dangerous hemorrhage has followed their removal by ligature; and in one instance under my care, peritonitis came on on the fourth and terminated fatally on the tenth day, after the easy excision of a small fibrous polypus. I believe that on the whole the advantages of the former operation greatly preponderate; that it is much easier, much more speedy, and much safer; and that the cases are very few in which it will not be found the better proceeding. In this opinion, too, there is an almost unanimous concurrence on the part of those whose experience has been most extensive;[4] though in order to guard against the possibility of hemorrhage occurring, some few, as for instance M. Aran,[5] prefer,

[1] *Médecine Opératoire*, t. iv, 2d ed., p. 391.
[2] *Clinique Chirurgicale de la Pitié*, t. iii, p. 210.
[3] Schmidt, *Jahrb.*, vol. ii, p. 90.
[4] It may suffice to refer to the names of Scanzoni, Aran, and McClintock, in support of this statement.
[5] *Op. cit.*, p. 875.

wherever it is practicable, to apply the ligature, and then, either at once or very soon after, to excise the growth.

Considering the opinion which I entertain concerning the comparative merits of the operation by ligature and that by excision, it can scarcely be expected that I should enter into any lengthened details with reference to the former mode of extirpating polypi, or the different instruments which have been invented for the purpose. It may suffice to say that on the whole Gooch's double canula, with the contrivance invented by Laundy, the instrument-maker in the Borough, for tightening the ligature, appears to me the most easy of application, and most generally suitable; though nothing can better illustrate the great difficulty often experienced in tying polypi than the number of the instruments which have been devised with this end.[1]

The excision of polypi is very seldom indeed attended by much difficulty, or even by so much pain as to necessitate the use of chloroform, though, if the patient be nervous, there can be no possible objection to its employment. The patient being placed on her back, with the feet resting on a stool, and the knees separated and firmly held apart by assistants, a pair of Museux hooks are to be carefully carried along the index finger of the left hand of the operator as high as the pedicle of the tumor. They must then be carefully separated; two fingers of the left hand guarding their hooked extremities until they are sufficiently far apart to allow of the pedicle being seized by them firmly. If the polypus be but small, a single pair of hooks will suffice to hold it securely, and the polypus may now be steadily but gently drawn down beyond the external parts, or at any rate close to the vulva, when its stalk may be divided by a pair of stout, curved, probe-pointed scissors, similar to those which surgeons use in operations on the tongue. If, however, the first pair of hooks be not fixed very firmly, or if the tumor be of considerable size, so as not to yield to traction readily, it may be expedient to introduce a second or even a third pair of hooks before making any extractive efforts. In this case it is often convenient to introduce each hook and fix it separately, which is easily enough done, by having the instrument made as my former colleague, Mr. Arnott, was accustomed, with the two halves separate, but capable of being united by a lock like that of the common midwifery forceps. Even when thus contrived, however, if the polypus be large, so as nearly to fill the vagina, a sharp hook cannot be carried high up so as to lay hold of its pedicle without a good deal of risk of getting entangled as it is passed, or of prickling the operator's fingers severely. A metal sheath which I have had made for covering these hooks, and which can be immediately dislodged, as soon as they have

[1] An elaborate critique of the different instruments for tying polypi is given by Kilian, *Operationslehre f. Geburtshülfer*, 2d ed., Bonn, 1852, part ii, pp. 208–248. Dr. Gooch himself describes his own canula and its mode of application at pp. 259–265 of his work on the *Diseases of Women*, so clearly, that no better rules can be laid down for the use of the ligature.

been carried to the part of the tumor into which it is wished to fix them, very readily overcomes this difficulty. Steady traction seldom fails to bring the growth within reach of the scissors, though I have known it to be requisite to employ the midwifery forceps to bring a large polypus through the vulva. Lisfranc was accustomed, in cases where there was much difficulty in dragging down the polypus, to fix the hooks into the lips of the uterus, and then to make traction directly on the womb itself. Neither this proceeding, however, nor that of incising the perineum in cases where the large polypus could not pass the narrow vulva, and which has the authority of Dupuytren in its support, seems to me expedient.

The division of a large polypus, and its extraction piecemeal, has been proved by experience to be unattended by any of those risks of hemorrhage which were once apprehended from the employment of cutting instruments in any way for the extirpation of these tumors; while various practitioners have invented curved knives or cutting hooks for the division of the pedicle of polypi which could not be drawn down with facility. Thus M. Velpeau[1] employs a knife eight or ten inches in length, curved at its point, which is blunt, and has a cutting edge only on one side. With this instrument he divides the pedicle of the polypus, which is kept on the stretch by an assistant grasping it with a pair of Museux hooks. A very ingenious, though perhaps rather complicated knife, the blade of which is fixed at right angles with the handle, and is introduced defended by a sort of sheath, like that of a *bistoire caché*, was invented and used in a case where the polypus was very large, and its pedicle very thick and solid, by Dr. Herrich, of Ratisbon,[2] while more lately Professor Simpson, of Edinburgh,[3] has employed an instrument not unlike the sharp hook employed by midwifery practitioners for decapitating the fœtus. The instrument seems in his hands to have answered very well, though one might have feared that the sharp edge being on the same plane with the handle of the instrument, it would have cut too obliquely for the ready division of the pedicle.

Though thus generally applicable, there are, however, a few conditions in which excision of polypi appears to be inferior in safety to their removal by ligature. The forcible drawing down of the uterus in cases where a polypus is contained within its cavity, in order to obtain access to the growth, is inevitably accompanied with a degree of violence which is avoided in the application of the ligature. The employment of the steel wire rope instead of the old whip-cord ligature, and the application of the principle of the ecraseur, as in the instrument invented by Dr. Braxton Hicks,[4]

[1] *Bull. Gén. de Thérapeutique*, vol. xiv, Paris, 1838, p. 1856; and Meissner, *op. cit.*, vol. i, p. 864.

[2] *Ueber Gebärmutter Polypen und deren Ausrottung*, 8vo., Regensburg, 1846.

[3] *Edin. Monthly Journal*, Jan. 1855, and *Obstetric Works*, vol. i, p. 150.

[4] See the description and drawing of the instrument in *Transactions of the Obstetrical Society*, vol. iii, p. 346.

deprives the ligature of the danger which used to accompany it, since by this means the pedicle of the outgrowth may be cut through in a few minutes. In cases of very large polypi, in which there is no space for the application of other instruments, this cutting ligature may also probably be employed with safety.[1]

By whatever means a polypus is separated from the uterus (polypi of a malignant character of course excepted), the pedicle withers, and the growth is not reproduced. This fact, which was once regarded as suggesting a problem of difficult solution, is not hard to understand, if we bear in mind that the pedicle is formed of uterine tissue. On the removal of the growth, the stimulus to hypertrophy of the uterus is withdrawn, the whole organ returns by that process of involution of which we see so many illustrations to its natural dimensions, while the pedicle of the polypus, having no longer any office to perform, is completely removed.

Other modes of getting rid of fibrous polypi have been occasionally resorted to, but it is scarcely necessary to do more than enumerate them. Torsion is but rarely applicable, for the pedicle is usually too thick and too firm to admit of the growth being thus removed. If the polypus be small, and its stem slender, there can, however, be no objection to it, while it unquestionably has the great advantage of doing away almost completely with all risk of bleeding. The forcible tearing away or avulsion of the growth has nothing whatever to recommend it; it is uncertain, painful, and hazardous. The destroying the vitality of the polypus by forcible compression, either of the whole mass, or by an instrument strangulating its pedicle, as practised by M. Gensoul, of Lyons,[2] appears open to all the objections that may be alleged against the ligature, without any compensating advantage.

Some reference ought, perhaps, to be made to the occasional complication of pregnancy or labor with polypus of the uterus, before we take a final leave of this subject.[3] There seems to be good reason for believing that polypi participate in the general development of the uterus during pregnancy, and that a growth previously very small may attain to a very considerable size during gestation. They do not, however, in general produce marked symptoms during pregnancy, nor do they tend to interfere with its natural progress. After the commencement of labor their injurious effects become manifest, since they sometimes present a

[1] Dr. G. Simon, who has done so much for the improvement of operative surgery in the diseases of women, suggests a very ingenious mode of obtaining access to the pedicle of very voluminous polypi. This proceeding consists in making a deep transverse incision as high as possible into the body of the polypus, and then dissecting off its capsule from half the circumference of the growth. If now the polypus is seized with hooks, and steady traction made upon it, its fibres will elongate to such an extent as to allow ready access to the pedicle, though before, while the mass retained a more globular form, it might have been altogether out of reach. (*Monatschrift f. Geburtskunde*, vol. xx, p. 467.)

[2] *Nouveau Procédé pour opérer les Polypes de Matrice*, 8vo., Lyons, 1851, p. 11.

[3] A very able essay on this subject, which will well repay perusal, was published by Dr. Oldham in the *Guy's Hospital Reports*, 2d series, vol. ii.

mechanical obstacle to the passage of the child, and at other times give rise to untoward consequences after its expulsion. Of these, one of the most frequent is hemorrhage; the polypus within the uterine cavity interfering with the due contraction of the organ, just as the portion of adherent placenta does in cases of its disruption. The other risk is that of violent and uncontrollable uterine action being excited, and exhausting the patient by its severity and continuance, as, for instance, in the remarkable case related by Dr. Gooch,[1] in which, after delivery, a polypus weighing three pounds fifteen ounces was expelled beyond the external parts, and the patient died while her medical attendants were still uncertain as to what her ailment was, and what should be done for her cure.

In spite of these contingencies, however, the general rule, and one concerning the wisdom of which there can be no doubt, is not to meddle with a uterine polypus either in labor or after delivery, unless the symptoms are so serious as to leave us no alternative. The ground for this rule is furnished by the risk of hemorrhage if the polypus be excised, and of phlebitis from the absorption of decaying animal matter if the growth be removed by ligature; while the vascularity of the polypus, and probably its size, will rapidly diminish as the involution of the uterus goes on, and the whole organ grows less and less susceptible as the date of delivery becomes more distant.

It is therefore better during labor to extract the child, and afterwards to check hemorrhage, and by opiates to still any violent uterine efforts, if possible, rather than by attempting the immediate removal of the polypus, to expose the patient to hazards so serious and so difficult to obviate. If, however, interference become urgently necessary, I think that I should, even in these cases, prefer the excision of the polypus, with the present risk of hemorrhage, to the somewhat tardier, but, I apprehend, graver dangers attendant on the use of the ligature.

There still remain a few varieties of uterine disease, concerning which something should be said, before we pass to the study of those malignant affections of the womb, that constitute the most painfully important of all the ailments of the female sexual system. To a brief notice of these I propose devoting the remainder of this Lecture; and first, I will describe a very rare form of tumor of the womb, which resembles in its character what has been termed the *Recurrent Fibroid* tumor.

In the eighth volume of the *Transactions of the Pathological Society*[2] there are recorded by Mr. Hutchinson the particulars of a case in which a tumor formed within the uterine cavity of a middle-aged unmarried woman, and gave rise to floodings large in amount and frequent in their return. At the end of twenty-three months an attempt was made to remove the tumor, which sprang from within the uterus by a pedicle as thick as the wrist, whence a mass as large as three fists projected into the vagina,

[1] On *Diseases of Women*, &c., p. 281, case vii. [2] Page 287.

while the uterus itself was felt as large as a child's head above the pubes. The soft texture of the tumor prevented it from being firmly grasped, and the operation was discontinued after only a comparatively small portion of the mass had been detached. The bulk of the tumor, however, subsequently sloughed away, and at the end of a month no trace of it could be discovered, nor any enlargement of the womb detected. For the next three months the patient continued so to improve that it was hoped a perfect cure had been effected; but at the end of six months the growth was reproduced, though it had not quite regained its former size. A second operation was now performed, and the hand introduced into the uterine cavity broke down the tissue of the tumor, which it was found possible only very imperfectly to remove. Temporary improvement again followed, but in three months more the tumor had grown again, and was attended by its old symptoms. Attempts to destroy its tissue by caustic injections caused much suffering and did little good, and death took place two years and ten months after the commencement of the patient's illness.

The uterus was about the size of two fists, and contained a white soft growth, attached by a very broad base to the fundus and posterior surface, its free extremity hanging down in a polypoid shape close to the os. The mucous lining of the cervix, though congested, was healthy. The uterine walls were much thickened in those parts to which the tumor had no attachment, but were thinned, evidently by its infiltration, at the base of the growth.

On a microscopic examination the tumor was found to be composed of a fibroid tissue, and of a softer material made up of round nuclear bodies, of transparent molecules, and of some fusiform cells. Both its microscopic character as well as the history of the disease seem to remove the tumor from the class of malignant growths, and Mr. Hutchinson's own interpretation of its nature as belonging to the class of recurrent fibroid tumors is doubtless correct.

In his paper on the enucleation of fibrous tumors, Mr. Hutchinson refers to a case of Dr. Atlee's, as probably belonging to the same category with the one just related. The account given by Dr. Atlee,[1] however, is too vague to enable one to form any very accurate judgment of the structure of the growth, though its rapid reproduction after removal renders his opinion in the highest degree probable. A case has also come under my own observation, that belongs to the same class, and the details of which, as will be seen, harmonize very closely with the history of Mr. Hutchinson's patient.

A young unmarried woman, aged twenty-three, who had always had good health, and since her fourteenth year had menstruated scantily, but without pain, every three weeks, was kicked on the lower part of her back during a menstrual period in July, 1852.

[1] *Transactions of American Medical Association*, vol. vi, p. 579, case iii.

This kick was followed by frequent abundant discharges of blood from the vagina, and towards the end of September by pain, referred to the loins and hypogastrium, and by a sense of bearing down, which, however, was not aggravated by moderate exertion, nor relieved by the recumbent posture.

The discharges, which had reduced her to a state of great weakness, were described at the time of her admission into the hospital on October 1st, 1852, as being habitually offensive, consisting sometimes of fluid blood, often intermixed with large coagula, but being at other times greenish and watery.

On examination the os uteri was found widely open, and a polypus, apparently of the size of a pigeon's egg, protruded through it, but the finger could not be passed high enough up to reach the point of its insertion. The hooked forceps introduced to draw it down, tore out from its substance, which was found to be remarkably soft; but a portion as big as an egg having been removed, a large mass was still left behind in the uterus. No hemorrhage followed this first operation, which was attempted on October 4th; on the 10th, the ergot of rye having been given in the interval in the hope of forcing the tumor lower down, the sound passed four and a half inches, and the finger detected a rough mass, not unlike placenta or very old clot, firmly adherent to the walls of the uterus, which was perfectly movable in the pelvis.

On November 11th a second attempt was made to remove the tumor, the patient having in the interval suffered much from hemorrhage, and having also experienced considerable pain. The attempt, however, issued in the removal of but a very small portion of the tumor, whose texture again broke down, while its attachment to the posterior and lower part of the uterus was too broad to allow of a ligature being placed around it. On December 20th, a third operation was attempted; a fourth on January 5th; a fifth on February 21st; and a sixth on March 8th; the growth being partly torn away by the fingers, in part scraped from the interior of the uterus by a blunt knife, whose blade was fixed at right angles to its handle. After each operation masses of the tumor came away, and it was estimated that altogether the quantity removed in and after the several operations amounted to about six ounces. On April 11th, the sound still entered three and a half inches, showing that though the size of the uterus was diminished, it had not yet returned to its natural dimensions; while, though the os was closed, so that the exact state of things could not be ascertained, I yet feared the reproduction of the tumor, for I had been struck by the circumstance that in spite of its laceration and of the forcible avulsion of portions of it at each operation, it yet, on every repetition of the proceeding, presented the same smooth surface.

Microscopic examination of the portions of the tumor showed its texture to be made up of imperfectly formed fibres, and of an

aggregation of cells resembling those of inflammatory lymph, or granulation cells.

In April the patient left the hospital, but at the end of June she had a most alarming hemorrhage, during which large portions of the tumor were discharged, intermixed with coagula. At the beginning of August she was readmitted, and the enlarged uterus was now felt distinctly over the pubes, while on a vaginal examination its lower segment was felt much distended. The os uteri was dilated with sponge tents, and as much of the tumor as could be removed in fragments was extracted, though the quantity did not much exceed six drachms. The muriated tincture of iron was now injected into the broken-down issue, in the hopes of thus expediting its destruction, and this was repeated thrice between that time and the 17th of October. The patient, however, dreaded these injections very much on account of the severe pain which they occasioned; while chloroform produced so much and such abiding sickness and depression, that it was not possible to have recourse to its use.

In December, 1853, an attack of hemorrhage was accompanied by the expulsion of six ounces of the tumor; and on the 15th of that month a large portion was removed; and on February 20th, 1854, a ninth and last operation was performed. The suffering caused by each operation, not so much at the moment of its performance as subsequently, when much abdominal tenderness was always experienced, and a great degree of constitutional disturbance was produced, coupled with the necessarily incomplete character of each operation, and the extreme rapidity with which the growth was reproduced, led me from this time to abstain from all interference. It would be tedious to relate minutely the subsequent history of the patient, who, in the autumn of 1857, was still able to follow a sedentary occupation, and to walk half a mile in order to show herself to me at the hospital. She had had many attacks of profuse hemorrhage, one of which, in May, 1856, very nearly proved fatal, and was followed for weeks by alarming depression, with severe abdominal pain, which was kept under only by large doses of morphia; and by profuse, extremely offensive watery discharges. The outline of the abdominal tumor, too, could be felt above the umbilicus, the abdomen measuring at that point thirty-two and a half inches; while per vaginam a lobulated soft growth extended through the widely-dilated mouth of the womb. In spite of the decided increase of the abdominal tumor, however, the patient's condition steadily improved, after her recovery from the hemorrhage in May, 1856, since which time no considerable loss of blood occurred, though the abdomen remained extremely tender; and the patient, in spite of added strength, remained pale as a marble statue.

On December 20, 1857, she re-entered the hospital for the last time, not suffering indeed from any return of her uterine symptoms, but from pain, which she conceived to be rheumatic, in her neck, and from cough brought on by exposure to cold a week

before. Some swelling was perceptible on the right side of the cervical vertebræ, and light was thrown on its probable nature in the course of a few days by the occurrence of numbness of the right arm and leg, and difficulty in moving them. Next, power over the left arm and leg became similarly impaired; and the urine was voided involuntarily as well as unconsciously. The respiration, too, was labored to an extent which auscultation did not account for; and the strength daily declined, though without suffering, and death took place quietly on the 3d of January, 1858; nearly six and a quarter years from the commencement of the patient's illness.

The following account of the appearances after death is from the notes of my friend and colleague, Mr. Callender. The rarity of the case furnishes my excuse for relating it in such detail: On opening the sac of the peritoneum, a large oval tumor, in front of which lay several coils of small intestine, was seen occupying the left iliac fossa, and extending upwards to about the level of the middle of the left kidney. It was invested by a thin transparent membrane, which dipped in between the convolutions that divided the tumor into lobes of unequal size.

The tumor was of a white or pale straw color, slightly vascular, a few large bloodvessels ramifying over its surface. It grew from the posterior wall of the uterus, to which it was connected by means of a broad base, two inches and a half thick, by one and a half in length. The tumor itself measured five and a half inches in breadth. The uterus occupied the entire pelvis, and rose to some height above the level of its brim. Its walls were only a quarter of an inch in thickness, and the os uteri was so dilated by a tumor which projected through it, that it was impossible to determine exactly where the uterus ceased and the vagina began. The uterus thus attenuated was stretched over a large tumor which occupied its interior. This tumor was attached by a broad base to the posterior uterine wall, where it was continuous with the growth which projected into the iliac fossa, while anteriorly and at the sides it was perfectly free.

Independently of this, a few isolated nodules were connected with the right side of the uterus, and projected upon its inner aspect, involving the mucous and submucous coat. The lobed surface of the tumor was free from any irregularities such as might have been expected from the previous operations. The lobes were more marked and more irregular on the anterior and lower portion of the tumor than elsewhere. It measured seven and a half inches in length, by five inches in breadth. These tumors presented throughout the ordinary characters of recurrent fibroid growths, being composed of narrow, elongated, caudate, and oat-shaped nucleated cells, with some detached nuclei, and granular matter.

The lumbar glands were the seat of a similar deposit; and nodules of a similar kind were imbedded in the lungs, and connected with the parietal layer of the pericardium. A mass of the same

kind was seen projecting from the body of the sixth cervical vertebra, and the same deposit being infiltrated into the substance of the bone had expanded it, both anteriorly and posteriorly, compressing the anterior columns of the spinal cord, and producing the symptoms which at length proved fatal.[1]

I have related this case at length on account of its rarity, and because its duration of more than six years brings into stronger prominence, than did the history of Mr. Hutchinson's patient, the differences between this kind of growth and those of a truly malignant character. No cancer-cells were detected in the uterine tumor either during the patient's life, or when the parts were removed after her death; and though the nodules in the lungs were thought by some who examined their structure to contain cells resembling those of ordinary scirrhus, yet Mr. Callender did not discover any, while every one agreed as to the abundance of fibroid material.

I know of no other cases resembling these. Our experience is at present too small to warrant our arriving at very positive conclusions respecting the disease which they illustrate. It may, however, be doubted whether our wiser course is not to let the disease alone; for while its complete removal seems impossible, its partial extirpation appears to be followed by an increased rapidity in its reproduction.

Two instances of *Fatty Tumors* of the uterus are reported in the German medical journals; and though nothing of the kind has ever come under my notice, it might seem an omission if I failed to refer to them.

The patients in whom this growth was observed were of the respective ages of fifty and fifty-three.[2] The former of these women, after suffering for eleven years from leucorrhœa, expelled from the vagina a tumor the size of the fist, which was ascertained to be made up of fat, closely resembling cholesterine, though not quite identical with it. In the other case the tumor, which was of the size of a child's head, projected beyond the external parts, but was connected by a pedicle three fingers broad with the whole margin of the os uteri. It was removed by ligature, and the patient, who had been subject to menorrhagia for a year previously, recovered. The tumor, which weighed three pounds and a half, is said to have been an ordinary fatty tumor, having an investment of dense cellular tissue, septa of which dipped down into its substance. The patient in the first case continued after the expulsion of the tumor liable to periodical discharges of very offensive slimy, watery fluid, in which were now and then small flat masses similar to the larger substance. The state of the cervix was quite natural, and I suppose that in this case the deposit of fat had taken place upon the free surface of the diseased mucous

[1] This case is described at length by Mr. Callender, in vol. ix of the *Transactions of the Pathological Society*, p. 327.

[2] The cases are related by Dr. W. Busch, in *Müller's Archiv*, 1851, p. 358, Dr. Seeger, in *Würtemb. Zeitschr*, vol. v, 1852, and Schmidt's *Jahrb.*, Dec., 1852, p. 335.

membrane of the womb, and had by degrees accumulated in the cavity of the organ until it stimulated its muscular fibres to contract upon and expel it.

In conclusion, I will add a few words concerning *tubercular deposit* in the uterus, though it ought not, perhaps, in strict propriety, to be noticed here, but should rather be referred to a separate category. Convenience, however, may be allowed to overrule strictly scientific arrangement. It happens occasionally that on examining the uterus, although its exterior may appear quite healthy, and the canal of the cervix also be free from disease, the whole of its cavity is found occupied by a matter of a dirty yellow color, closely resembling both in its aspect and its consistence the substance of a tubercular bronchial gland when just beginning to soften. This deposit is generally about an eighth of an inch in thickness, is easily scraped away with the back of the scalpel; but on its removal it is found that all trace of the lining of the uterus has disappeared too, or if anywhere a portion of it remains, that is seen to be opaque, more vascular than natural, and to present beneath it small yellow spots, looking like distinct tubercular deposits, which, in fact, they have been ascertained to be by careful microscopic examination. In cases where the disease is only beginning, the separate yellow deposits in the mucous membrane are alone apparent, while when the disease is far advanced (and it was so in the two cases which came under my own observation), not only is the mucous membrane completely destroyed, but the deposit encroaches on the substance of the womb, its cavity is enlarged by the abundance of the morbid substance, and its walls are thickened; changes that in some instances have been known to occur to a very considerable extent.

In the great majority of cases the tubercular deposit does not extend beyond the cavity of the uterus, though sometimes a similar matter is found distending the Fallopian tubes, and tubercular degeneration of the ovaries now and then coexists with the disease of the interior of the womb. Either of these occurrences is, however, more frequent than the extension of the disease to the cervical canal; and Rokitansky[1] states that it scarcely ever appears there as a primary deposit. Occasionally one sees in the living subject, on the surface of one or both lips of the uterus, deposits of a yellow color, of the size of a split pea, or smaller, having altogether the appearance of small deposits of yellow tubercle, and which on being pricked give issue to a small quantity of matter of the consistence of pus, or rather firmer, and having a granular appearance under the microscope. These deposits have been alleged to be tuberculous; and the high authority of the late Professor Kiwisch[2] may be adduced in support of that opinion. I am familiar with the appearance, but am not altogether convinced of its tuberculous character, and am rather inclined to con-

[1] *Pathol. Anatomie*, 3d ed., 1861, vol. iii, p. 498.
[2] *Op. cit.* vol. i, p. 558.

sider it as due to hypertrophy of some of the Nabothian follicles, with obliteration of their orifices and alteration of their contents. At any rate, though small slightly excavated ulcers are now and then left behind, I have never been able to trace any connection between this appearance and any form of destructive ulceration of the cervix.

The disease seems to be always secondary to tubercular deposit elsewhere, and even then to be of rare occurrence, though perhaps less so than it was believed to be by Louis,[1] who did not estimate its frequency higher than one and a half per cent. of all cases of tubercle in general. M. Kiwisch[2] states, that at Prague it was met with once in every forty cases, or, in other words, with a frequency of two and a half per cent.; and I know of no other statistics bearing on the subject.

The following table deduced from data furnished by Kiwisch and a recent very painstaking writer on the subject, Dr. Geil,[3] furnishes some information not without its value.

Tubercular deposit in the uterus was met with—

In 6	subjects	between	10	and	20 years.
" 22	"	"	20	— 30	"
" 15	"	"	30	— 40	"
" 10	"	"	40	— 50	"
" 7	"	"	50	— 60	"
" 6	"	"	60	— 70	"
" 2	"	"	70	— 80	"
Total, 68					

In forty-five of the cases collected by Dr. Geil, the seat of the affection is distinguished—

Uterus alone affected,		1 case
" and tubes,	with affection of peritoneum,	19 cases
	without " "	12 "
Uterus, tubes, and vagina,	in form of an aphthous process,	2 cases
	" true tuberculous ulcers,	1 case
Tubes alone affected,		8 cases
Right tube alone,		2 "
	Total,	45

Amenorrhœa or dysmenorrhœa, often associated with leucorrhœal discharges, are the *symptoms* which are ordinarily observed in connection with uterine tuberculosis. Pain appears to be an exceptional occurrence, and when present, neither to be an early symptom, nor commonly to attain to any great severity, though now and then, as in the interesting case which came under my own

[1] *Récherches sur la Phthisie*, 2d ed., Paris, 1834, p. 142.

[2] *Op. cit.*, p. 559.

[3] In an inaugural dissertation, published at Erlangen in 1851, and of which an abstract is given in Schmidt's *Jahrbücher*, March, 1852, p. 324. Some additional cases, which, however, throw no fresh light on the subject, will be found in the abstract of a paper by M. Crocq in *Archives de Med.*, 1860, vol. ii, p. 215; and in another by M. Paulsen, in Schmidt's *Jahrbücher*, 1852, vol. 80, p. 222.

notice, and which was described by Mr. Tomlinson of Burton-on-Trent, at a meeting of the Obstetrical Society, pain may become very severe. In many instances no symptoms have attended the affection during life, while those which have just been enumerated present, as I scarcely need to say, nothing pathognomonic of this peculiar disease. Indeed, if we bear in mind that tuberculous affections of the womb appear to be almost always secondary to extensive deposit of tubercle in other organs, we are led to the practical inference that, in cases where phthisical symptoms are present, there is every reason for interfering as little as possible for the removal of amenorrhœa, or other irregularities of the menstrual function, and especially for abstaining from much local treatment of any other uterine ailment that may occur.[1]

LECTURE XIX.

MALIGNANT OR CANCEROUS DISEASES OF THE UTERUS.

Hopelessness of the subject, but importance of questions involved in its study; erroneous opinions formerly held concerning it.
Definition of CANCER; its varieties. Scirrhus extremely rare; its anatomical characters.
Medullary Cancer; its nature, mode of occurrence of ulceration, its rapid progress; abortive attempts at cure, and advance of the disease. Hypertrophy of uterus in its course; changes in its walls; its interior; on its surface. Extension of disease to vagina and bladder. Exceptional cases; cancer of body of uterus; cancerous polypi. Alveolar cancer.
Epithelial Cancer; its general characters; its relation to medullary cancer; essential identity with Cauliflower Excrescence.
Ulcers of the os uteri; the so-called Tuberculous Ulcer; Corroding Ulcer.
Frequency of secondary affections in cases of uterine cancer.

IN the study of the diseases which have hitherto engaged our attention, we have never entirely lost a sense of hopefulness. Either medicine might cure the ailment, or surgery might remove

[1] Twice have I met with symptoms of disease of the womb which I regarded as tuberculous, but had no opportunity of verifying my diagnosis by a post-mortem examination. The patients in these cases were aged 35 and 53 years respectively. The younger had given birth to children; the elder had not married until late in life, and had never been pregnant. The younger patient was in a state of advanced phthisis, with cavities in the lungs; the elder had had symptoms of consumptive disease in early life, and percussion was dull and respiration feeble in the left infra-clavicular region. In both patients leucorrhœa had preceded any other local symptom; in both this discharge came from the interior of the uterus, was thick, tenacious, yellowish in one case, greenish in the other; had a peculiar faint smell, but not the offensive odor of cancer. In neither was there any hemorrhage; and menstruation, which still continued in the younger patient, had in her become extremely scanty. Pain had come on gradually, had increased slowly, but amounted at last after the lapse of a year, to intolerable ceaseless anguish. There was some tenderness over the uterus, which was somewhat enlarged; but there was no hardness about the cervix—no unhealthy condition, either to the touch or eye, about the mouth of the womb. The symptoms were not those of cancer of the body of the uterus, but they resembled not a little those described by Mr. Tomlinson. I do not know how long either of these patients lived, but I know that it was more than two years.

it; or at the very worst, so much might be done to retard its progress, and to alleviate the sufferings which it occasioned, that life was in many instances but little, if at all shortened; was sometimes even scarcely embittered by its presence.

In passing now, however, to the investigation of the malignant diseases of the womb, of *cancer* and its allied disorders, we shall find but few of those mitigating circumstances which lessen the darkness of the picture in the case of many other incurable affections. Pain, often exceeding in intensity all that can be imagined as most intolerable, attended by accidents which render the sufferer most loathsome to herself and to those whom strong affection still gathers round her bed; the general health broken down by the action of the same poison as produces the local suffering, and all tending surely, swiftly, to a fatal issue, which skill cannot avert, from which it can scarcely take away its bitterest anguish: such are the features in the picture which I must now call on you to contemplate, and that not hurriedly, nor for a moment, but most carefully and deliberately, and in all its various aspects.

There are indeed many reasons which prevent our passing over the subject of uterine cancer (as we might be glad to do) with but a passing notice. The frequency of the disease forbids it, for scarcely any age is free from its attack, while it is doubtful whether any other form of organic affection of the womb is met with so often, and it is certain that there is no other so fatal. The dread most naturally felt, lest this symptom or that symptom should portend the outset or imply the existence of cancer, forbids it; for we are called on over and over again to remove the apprehensions of women whose fears have been excited by some uterine ailment, perhaps of no great moment, but out of which they have shaped to their affrighted fancies all the hideous features of an incurable, an almost unbearable disease. Need I say, then, how much it imports that we should be able to remove such apprehensions when causeless, not by holding out vague hopes or uncertain expectations, but by positive assurances founded on large and accurate experience, and, as far as may be, on certain knowledge?

To those practitioners and writers, both English and foreign, who have taken the most active part in the study of the inflammatory affections of the neck of the womb, and whose investigations have led them (as some believe, and I confess myself to be of that number) to an exaggerated estimate both of their frequency and of their importance, we yet owe a debt of gratitude for the light which they have thrown on this disease, which outweighs many overstatements and cancels many errors. Cancer of the uterus used before their time to be described as a disease slow in progress, continuing in its first quiescent stage of scirrhus not only for months, but for years, and then, excited by one knows not what cause to activity, passing into the state of ulcerated carcinoma, and thus at its close quickly destroying the patient. It sufficed, then, for the neck of the womb to be hard and painful, and some-

what enlarged, for the suspicion of malignant disease to be entertained, and for years of causeless anxiety to be entailed upon the patient. Such and such-like were the results which followed from confounding the consequences of inflammation and of kindred processes, with the changes which the deposit of the elements of cancer brings about in the affected part.

It is scarcely necessary to *define cancer*, but if some definition must be adopted, I know of none better than Müller's :[1] "Those growths may be termed cancerous which destroy the natural structure of all tissues, which are constitutional from their very commencement, or become so in the natural process of their development, and which when once they have infected the constitution, if extirpated, invariably return, and conduct the person who is affected by them to inevitable destruction." Taking this definition, however, as, on the whole, the best that can be given, we must still bear in mind that morbid anatomy and chemical research have both, within the five and twenty years that have passed since it was framed, tended to show great diversities between the different forms of carcinoma, and to show also that many of those which affect the womb are local in their origin and continue so through much of their progress; and that probably if we could always discover the existence of the disease early, we often need not despair of its cure.

No form of carcinoma seems to be peculiar to the uterus, though they do not all occur with anything like the same frequency. Fungoid or medullary carcinoma is by far the most common; next in frequency may be classed the epithelial varieties of the disease, if, indeed, it be not more correct, as some men of high authority believe, to refer them to a separate category distinct from genuine cancer. Next to them, but divided by an interval which widens in exact proportion as fresh evidence is brought to bear on the subject, may be classed scirrhus, or hard cancer; while almost as rare, or, perhaps even more uncommon, stands the colloid, or alveolar variety of the disease.

The only attempt with which I am acquainted at a numerical estimate of the comparative frequency of *scirrhus, or hard cancer*, and other varieties of malignant disease of the womb, is the statement by the late Professor Kiwisch,[2] that about three of every ten cases of cancer of the womb are scirrhous. This estimate, however, in all probability much overrates the frequency of scirrhus; and I cannot but think that many instances of firm medullary cancer have been regarded as scirrhus, and this not only by less competent observers, but even by Kiwisch himself. He goes on to say "that with the commencement of the softening of fibrous carcinoma, the peculiar characters of the growth progressively disappear; it grows like medullary cancer, becomes more vascular, and is easily broken down; contains a pultaceous, brain-like substance,

[1] *On Cancer*, &c., English translation, 8vo., London, 1840, p. 28.
[2] *Op. cit.*, vol. i, p. 518.

and the ulcer which forms upon it presents precisely the same external appearance, and the same characters as those which result from the breaking down of medullary cancer."

The great authority of Rokitansky[1] may further be adduced in support of the opinion that "fibrous cancer is of extreme rarity;" while, on the other hand, "medullary carcinoma occurs with the greatest frequency." To say after this that I have not met on a post-mortem examination with any example of genuine scirrhus of the uterus, considering how few comparatively are my opportunities for observation after death, may seem almost an idle impertinence. It is more to the purpose, however, to add that my friend Mr. Paget informs me that he has not met with any instance of it, while any one who carefully examines the preparations in our anatomical museums will find that this disease, once said to be so common, is in reality but seldom met with. It is perhaps not irrelevant to mention, that of one hundred and seventy cases of uterine cancer of which I have a record, the disease appeared from an examination during the patient's life to be of the medullary kind in a hundred and thirty-seven, epithelial in twenty-eight, epithelial and fungoid combined in two, and colloid in two, while in only one instance did I recognize the character of scirrhus, though I have seen some cases of alleged scirrhus in which the history of the patient and the result of long-continued observation, plainly showed the name to have been misapplied, and the enlargement and induration to be due to causes of a perfectly innocent kind.[2]

In spite of differences on other points, all observers are agreed that the neck of the womb, or rather that part of it which projects into the vagina, the portio vaginalis, is the point at which cancer generally commences, and to which, for a season, it is confined. Its mode of commencement differs, according as the disease belongs to the *epithelial* or to the *medullary* form. In the first case, the papillæ of the os uteri seem to be the point of departure of the evil, and a large, granular, sprouting outgrowth not infrequently projects into the vagina, while still the subjacent tissue is but little involved. In the second case, the morbid deposit takes place in the substance of the part, enlarging, but thickening far more than lengthening it, increasing the size of the lips of the uterus, rendering them hard and tense, though still not without a certain elasticity, and at the same time irregular and nodulated; while as they enlarge they usually gape, and leave the mouth of the womb and the lower part of its cervical canal more widely open than in a state of health.

On making an incision into the parts which have thus lost their ordinary characters, the place of the natural structure of the uterus

[1] *Pathologische Anatomie*, vol. iii, p. 550.

[2] I am well aware that this superficial kind of examination which alone is practicable during life, is almost valueless towards the decision of a question concerning which much difference of opinion exists, even among the most morbid anatomists, such as Virchow and Rokitansky. The rarity of true scirrhus is the one point concerning which all are agreed.

is found to be more or less occupied by a white, firm, semi-transparent deposit, which in some parts seems infiltrated into the proper tissue of the womb, in others has entirely taken its place. This deposit is always more abundant near the mucous surface of the organ than towards its outer wall; and a thin layer of muscular substance may often be detected beneath the peritoneal investment of the uterus, even when the conversion of its tissues into cancerous structure has been most complete.

It is very seldom that after death one finds nothing more than this substitution of cancerous deposit for the proper tissue of the womb. In the great majority of cases softening takes place, even while the part involved is but a comparatively small portion of the womb; softening is soon followed by death of the mucous membrane of the os uteri; an ulcer forms, a ragged uneven sore, with raised, irregular, hardened edges; and a dirty putrilage covering its uneven surface, takes the place of the smooth but enlarged lips of the organ. Or, if the disease go on still further, the lips of the womb and its cervix are altogether destroyed, and a soft, dirty white flocculent substance covers the uneven, granular, and hardened substance, which alone marks their former situation.

These ulcerations, when once formed, increase with great rapidity, a fact of which I have more than once seen remarkable illustrations. A patient, aged forty-nine years, was admitted under my care into St. Bartholomew's Hospital, whose symptoms consisted of hemorrhage, at first profuse, afterwards occurring frequently and without cause, though in less abundance, and with it some pain in the back had of late been associated. The uterus was low down, quite movable in the pelvis, and not much enlarged. The posterior lip was thin, and seemed healthy, the anterior was thick, hard, and nodulated, though the mucous membrane covering the surface of both appeared healthy under the speculum. Twelve days afterwards the examination was repeated, and the advance of disease within this short time was very remarkable. The posterior lip was now no longer thin and natural, but thickened, puckered, and uneven, and the inner surface of the anterior lip was irregular, as if from ulceration, while the introduction of the speculum showed the surface to be uneven, ragged, black, and bleeding.

I have seen other similar cases, but none in which the occurrence of ulceration was so sudden, or its subsequent progress so rapid as in this instance. It is not easy to account for the occurrence of ulceration in all instances. Commonly it is preceded by softening of the morbid deposit, but this is by no means constant, for in the very instance which I have related, and in others too, in which it has been possible to fix the date of the ulceration, and to trace its subsequent progress, the cancerous substance round the ulcer has been, and has still continued firm. Mere rapidity of growth, too, does not of itself produce ulceration, for some instances of rapidly growing medullary cancer of the womb excite our suspicion, and yet obscure our diagnosis by the absence of ulceration even up to a late period. All that we can venture to

assert with reference to the subject is, that in all forms of cancer of the womb (with the exception, perhaps, of that of its body), ulceration and the formation of an open sore take place sooner or later; and further, that this ulceration may occur in one of two ways,[1] either proceeding from within outwards, in which case it is preceded by softening of the cancerous tissues, or from without inwards; the vitality of the investing membrane of the uterine lips being destroyed first, just in the same way as the vitality of the skin is sometimes destroyed over a cancerous tumor of the breast.

A few days often suffice to give to the ulceration the dimensions and even the depth which it may be found to retain for months subsequently. The patient, indeed, grows worse, the discharges continue, composed of pus from the ulcerated surface, fetid from the admixture with it of dead and decaying materials, tinged with blood from the giving way of some of the vessels distributed to the granulations, while every now and then abundant hemorrhages break forth, profuse enough, perhaps, to excite apprehensions even for the patient's present safety. If we examine, we find sprouting granulations or positive fungous outgrowth from the surface, and, then, after a time, the fungus disappears, the surface feels less uneven, the edges less unhealthy, and we can almost persuade ourselves that here and there a process of cicatrization has begun. And yet healing does not take place. "The cancer sore does not heal, because its base, the cancer substance, is not cicatrix tissue, and consequently can form no scar, and the apparent scars which now and then form are never lasting. It does not heal, because the outgrowth is constantly going on; it does not heal, because no skinning takes place upon its surface; and, lastly, it does not heal, because the new-formed tissue speedily dies again."[2] New formation and death of the newly-formed tissues go on in constant succession; a series of abortive attempts at cure, such as prevent the rapid extension of the ulcer, such as cheer the patient with delusive hopes of recovery, such as sometimes mislead the unwary, even among members of our own profession, and such as, I blush to say it, furnish the wretched charlatan with a fair pretext for the most despicable of all falsehoods; for those with which, for his own behoof, the doctor dares to impose on the credulity of his patient.

Slowly, however, though the disease may sometimes seem to advance, it yet does advance, cancerous deposits extending from the cervix into the substance of the body of the uterus; the new-

[1] See, with reference to this subject, Paget, *op. cit.*, vol. ii, p. 334.

[2] Bruch, *Ueber die Diagnose der bösartigen Geschwülste*, 8vo., Mainz, 1847, p. 454. The few isolated instances of spontaneous cure of cancer limited to the *portio vaginalis* do not invalidate the general truth of this statement. Such a cure takes place, according to Rokitansky, *Pathol. Anatomie*, 3d ed. vol. iii, p. 495, by a process of sloughing ulceration; the consequent loss of substance leaving a funnel-shaped scar, with its apex directed upwards towards the internal orifice of the uterus. See a case of Scanzoni's, *op. cit.*, p. 282; and some remarks of Wagner, *Der Gebärmutterkrebs*, 8vo., Leipzig, 1858, p. 27.

formed tissues dying, and dying on the whole to a greater extent than they are reproduced, until at length the lips of the os are quite destroyed, the portio vaginalis of the cervix is destroyed too, and a widely gaping opening, with thick, hard, and irregular edges, is all that is left to mark the point where the womb begins, and the canal leading to it ends. Often, though not invariably, a step preliminary to this occurrence is the formation of adhesions between the lips of the uterus and the contiguous surfaces of the vagina. Sometimes these adhesions are limited to one lip, often they involve both, and to them is in a great measure due that apparent shortening of the vagina which is very marked in many cases of uterine cancer, and which does not at all imply the previous occurrence of any descent of the womb. In the softer kind of medullary cancer, in which this condition is met with most frequently, and in the greatest degree, the surface of the portio vaginalis and the walls of the vagina become sometimes so completely fused together that a mere thickened ring is all that indicates the situation of the mouth of the womb. Even this, at length, becomes indistinct, owing to the extension of the cancerous disease along the vaginal walls, and the finger at last discovers no distinction between the uterus and vagina, but finds only that the uneven walls of the canal end in a cavity filled with a dirty putrilage.

Sometimes, indeed, this fusion between the two surfaces does not take place, but nevertheless the vagina becomes almost always implicated in the advance of the disease. Cancerous deposit takes place in its cellular tissue, confined at first pretty much to the roof of the vagina, where it produces that thickening, hardness, and resistance, which render the cancerous womb less movable than natural. With the lapse of time the deposit both becomes more considerable at its original seat, and also extends further and further along the canal, shortening as well as thickening it, while general hypertrophy of the tissues tends to the same result. Nor is the disease confined to the substance of the vagina, but it affects the mucous lining in almost every instance, and this, as might be expected, most remarkably in the immediate vicinity of the womb. The whole mucous membrane, indeed, is often red and inflamed, but as the neck of the uterus is approached it is also found softened and thickened. Small spots of whitish cancerous deposit, from the size of a pin's head to that of a barley-corn, not unfrequently beset the upper part of the canal, and unhealthy, superficial ulcerations, usually irregular in form, and having a transverse direction, are often present. These ulcerations are said by M. Lebert[1] seldom to have a cancerous base, and are probably due in great measure to the acrid nature of the discharge in which the upper part of the canal is almost constantly bathed. What renders this opinion the more probable is, that in cases of epithelial

[1] *Op. cit.*, p. 230.

cancer in which this discharge is often absent, the ulcerations are also commonly wanting.

It is almost needless to say that while disease advances at the lower part of the uterus, the rest of the organ is not left in a healthy state. If life is sufficiently prolonged, the deposit by degrees extends further and further upwards, till even as high as the ligaments of the ovaries, or sometimes higher still, the walls of the organ are thickened by infiltration of cancerous matter, or are completely converted into it. This, however, is not the only cause of that enlargement of the whole uterus which is met with in almost every case of carcinoma. In other organs of the body, the advance of cancerous deposit, and the wasting and disappearance of the proper tissue of the part, go on simultaneously and in equal proportions. In the case of the uterus, however, that disposition to growth and development of which we have seen so many illustrations, shows itself even during the progress of malignant disease. The walls thicken in parts which the cancer has not yet reached, for the increased afflux of blood brings with it an increased activity of growth, and even in those situations where the malignant deposit is abundant, there remains up to a late period a layer of muscular fibre bounding it externally; the product, as I imagine, of new formation, not simply the residue of the original parietes of the organ.

But though the cancerous disease, either for the reason which I have assigned, or on some other account as yet inexplicable, seldom reaches to and involves the external surface of the womb, its mucous lining has no such immunity from disease. Its condition, however, is very variable. Sometimes nothing more is apparent than a general and intense redness of the interior of the womb; but much more frequently the uterine lining membrane is covered by a dark offensive secretion, and is beset here and there by small white deposits of cancer. If disease is more advanced, the mucous membrane is absent, at any rate from the lower part of the uterine cavity, and the surface is uneven and granular from the infiltration of cancerous deposit into the uterine tissue. On one occasion, too, I found the whole interior of the womb lined by a white membraniform layer of cancerous deposit, beneath which its substance was irregular and granular, as if ulcerated.

This partial destruction of its mucous lining, and this granular state of its interior, occasion that roughness which the finger so constantly perceives when introduced within the orifice of the cancerous womb. There is, however, besides, in many instances of uterine carcinoma, a distinct polypoid cancerous outgrowth, which springs from low down in the cavity of the womb, or from the upper part of its cervix, seldom attaining any considerable size, but varying from month to month, and usually disappearing altogether as ulceration advances, and as the uterine structure is with its advance more and more extensively destroyed. Besides these, which are usually but temporary phenomena, there are distinct malignant polypi, concerning which I must say more pres-

ently, but about which it may suffice now to mention that they may be formed independently of disease of the os or cervix uteri, though those parts, too, become almost invariably involved in the progress of the cancerous growth.

If now from the substance of the womb and its interior we pass to the study of the alterations which cancerous disease brings about on its external surface, we shall find occasion to notice many important changes, though none perhaps so striking as those which we have already observed. Many circumstances concur to produce that firm fixing of the uterus in the pelvic cavity which is observable in almost every instance of carcinoma of the medullary kind, except in its very earliest stages. It is partly brought about by a chronic form of peritonitis, which is generally, though not constantly limited to the parts in the immediate vicinity of the pelvis, and which glues the womb to the rectum and bladder. This, however, is not its only cause, but infiltration of cancerous matter between the uterus and adjacent parts, and between the folds of the broad ligament, tends to fix it in the pelvis, and to form it and the parts connected with it into one immovable mass. These deposits usually take place on the visceral surface of the peritoneum, and are sometimes so extensive as to be the apparent occasion of a degree of wasting of the womb itself, which I have once or twice found, in the midst of abundant medullary deposit, small and shrunken, and its outer surface rough, as if partially eroded or destroyed by the morbid structure. While these deposits are but inconsiderable, they may still be seen in small patches beneath the peritoneum; but with their increase the peritoneum too becomes involved, and at length is undistinguishable in the midst of the large mass of cancerous disease which conceals the uterus and its appendages from view. In cases where these deposits are most abundant, it is by no means unusual to find softened cancerous matter in the pelvic cavity, or between the folds of the broad ligaments; while sometimes the intestines are matted together above the pelvic brim, so as to form the upper wall of an irregular cavity lined with cancerous matter, while now and then a real fecal abscess is produced by the extension of the disease to the intestines, and their consequent perforation.

More frequent than the actual destruction of the peritoneum by deposits of cancer beneath it, is the occurrence of numerous small masses of the same substance on its outer surface. These are sometimes flat and sessile, like small tubercles distributed over it; at other times they are connected with the serous membrane by a small and slender membranous pedicle, similar to that by which small fibrous outgrowths are not infrequently attached to the fundus and adjacent parts of the womb. On two occasions I have also found, in the midst of the cancerous substance which enveloped the uterus, serous cysts of the size of a filbert, containing a rather deep straw-colored, transparent serum, their walls thin, their outer surface free, their inner connected with the uterus itself by the interposition of a layer of cancerous substance of

uncertain thickness. In one instance, five cysts were present, and the material which surrounded them, and which also had matted together the uterine appendages, was intermingled fat and cancer substance. In the other case, there was only one cyst, but it also was surrounded by a very abundant deposit of cancer. These cysts showed no sign of endogenous growth in their interior, but appeared to be simple serous cysts, such as sometimes form on the exterior of the uterus, independent of any other disease. I am therefore uncertain in what relation they stood to the cancerous deposits, whether in that of mere accidental complication, or whether the connection between the two was more intimate.[1]

Reference has already been made to the formation of adhesions between the uterine lips and the vaginal walls, and it is obvious enough that when this takes place, the extension of disease to the substance of the vagina is almost sure to follow. It is matter of observation, however, that the anterior vaginal wall and the bladder are much more frequently involved by the advance of uterine cancer than are its posterior wall and the rectum. It has been attempted to explain this occurrence by the assumption that cancer oftener attacks the anterior than the posterior lip of the uterus; but facts do not bear out this assertion, and my own experience, indeed, would lead me rather to the conclusion that cancer is oftener limited to the posterior, and that certainly the disease of the posterior lip is often further advanced than that of the anterior. The intimate connection between the neck of the womb and the bladder, parts which are separated only by the intervention of a fold of the pelvic fascia, while posteriorly the peritoneum descends even below the level of the commencement of the portio vaginalis, accounts much more satisfactorily for the more speedy infiltration of cancerous matter into parts contiguous with the front than with the back of the organ.[2]

Though, perhaps, not strictly in place, it will yet be convenient to add a few words more about the affection of the bladder in cases of uterine cancer. It is by no means unusual, independent of any trace of cancerous deposit in the organ, to find the mucous membrane of the bladder intensely congested and of a deep red color, sometimes inflamed, even ulcerated, pus covering its rugæ, and all the coats of the organ thickened, showing, what indeed the dysuria

[1] In all the cases of serous cysts of the uterus described by Huguier in his very valuable Essay in vol. i of the *Mémoires de l'Académie de Chirurgie*, chap. ii, pp. 295–325, and plates iv and v, the cysts were sub-peritoneal. Those which I observed in the two cases above described were similar to the cysts delineated by Boivin and Dugès in plates xiv and xxxiii, fig. 1, of their *Atlas*, but of which they give no particular description.

[2] Wagner, *op. cit.*, pp. 49 and 60, gives the proportions as 38 per cent. of the former to 16 per cent. of the latter. His data, however, bring out a fact for which I was not prepared—namely, the much greater frequency of recto-vaginal than of vesico-vaginal fistula as the result of cancerous disease. It appears that while there were but twenty-eight cases of vesico-vaginal fistula in eighty-three instances of cancerous disease of the bladder, fistulous communication with the vagina existed in twenty-four out of thirty-three cases in which cancer had implicated the rectum.

during the patient's life but too constantly announces, how close the sympathy is between the bladder and the womb. The mode in which the first anatomical evidence of positive disease of the bladder appears is not constant. Sometimes the mischief seems entirely to proceed from without inwards, and then at one spot, where the bladder and vagina are closely united, the mucous membrane of the former viscus may present a slightly flocculent appearance. If touched, it will be found to be softened; if pressed on with a probe, it will give way; the cancerous deposit has gradually destroyed all the intervening tissues, and a few days more would have sufficed for the production of a fistulous opening. In other instances, disease attacks the bladder, secondarily indeed, but independently of mere extension to it by continuity of tissue. Deposits of cancer, in the form of small flat whitish tubercles, take place beneath its mucous membrane; not limited to that part where the uterus or the vagina and bladder are in immediate contact, though generally much more abundant there than elsewhere. These tubercles enlarge somewhat, though they do not coalesce nor attain any considerable size, but they destroy the mucous membrane above them, while that of the rest of the organ is generally inflamed, thickened, and sometimes even ulcerated. When the fistulous opening has once formed, the bladder undergoes all those changes that attend a vesico-vaginal fistula, however produced, only aggravated by the constant advances of the disease by which the fistula was occasioned.

But to return to that more special study of cancer of the womb itself which is our present business, I may observe, that though the description of the disease already given holds good to a great extent of all forms of uterine cancer, there are *some varieties of the disease* in which deviations occur from its most common course. It has been stated as a general rule, that cancer begins in the neck of the womb, and this statement is open to almost as few exceptions as the directly opposite one with reference to the exclusive seat of fibrous tumors in the body of the organ. In three, however, out of one hundred and seventy cases of uterine cancer, the disease occupied *the body of the organ*, and ran its course to a fatal issue without the occurrence of ulceration of the os uteri, or of any change in its condition, such as during life could lead to the suspicion of its being the seat of malignant disease, though its tissue was found after death infiltrated with cancerous deposit. In all of these cases the enlargement of the uterus was very considerable; in one it measured five inches in length, in a second six inches, and in the third was nearly as large as the adult head. This increase of size was due in two of the cases to the extreme thickening of the uterine walls by infiltration of cancerous deposit, which in one had converted the whole organ into a tolerably uniform mass of soft, indistinctly fibrous tissue, of a dirty grayish-white color, soaked in a dirty serum, very soft, but tearing most readily in a longitudinal direction, while no trace of mucous membrane was discoverable, nor any remains of uterine cavity beyond half an

inch from the orifice of the womb, which was small and circular, and outwardly presented no evidence of disease. In the other case, the walls of the uterus were similarly thickened, though in a less degree, and the uterine cavity was not obliterated, but a mass of soft medullary cancer, of the size of a walnut, projected into it, springing from a little above the situation of the internal os uteri. Externally, the lips of the os uteri were healthy, their surface perfectly smooth and of a vivid red color. This character continued to just within the cervix, but there the mucous membrane at once became roughened, of a red color, with dead-white spots of cancerous deposit showing through it everywhere.[1] A similarly healthy state of the os existed in the third instance, in which the uterus measured five inches in length. The organ in that case was surrounded by a mass of softening carcinomatous matter, but its walls were not infiltrated with malignant deposit. The increased size of the womb, indeed, was due to expansion of its cavity; not at all to thickening of its walls; but their inner surface presented a very remarkable appearance, being everywhere beset by small warty growths, or irregularities, among which were one or two rather larger than the rest, but even these did not exceed the size of a pea. These granulations were quite sessile, and the surface altogether looked more like that of a chronically ulcerated bladder than of a part the seat of morbid deposit. In the substance of these granulations no distinct cancer-cells were found, but at the fundus of the uterus, where the walls were generally very thin, there was an aperture of communication large enough to allow the finger to pass between the cavity of the womb and the mass of carcinoma which surrounded it. Here, too, the uterine wall was softened and disintegrated, and seemed infiltrated with the same kind of matter.

Besides these cases, two others out of the total one hundred and seventy presented a great preponderance of disease in the interior of the womb, though the lips were not in a healthy condition. It was clear, however, in both instances, that the mischief had proceeded from within outwards, not in its usual course; and I am disposed to think that the commencement of cancerous disease in the interior of the womb, instead of about its orifice or in the substance of its neck, is not of that extreme rarity which is generally supposed.

Lastly, in connection with those cases in which the os uteri escapes the cancerous deposit, or becomes affected only secondarily, some mention must be made of those rare instances in which *polypi of malignant structure* grow from the interior of the uterus, independent of previous disease of its orifice. Reference has already been made to the frequent formation of polypoid out-

[1] A brief but interesting description of several cases of this kind is given by Dr. Simpson in his *Obstetric Memoirs*, &c., vol. i, p. 193, and a more or less detailed account of many others collected from different sources will be found in Wagner, *op. cit.*, pp. 122–133.

growths of malignant structure during the course of general uterine cancer, but these outgrowths are, for the most part, of inconsiderable size, constitute but a small part of the general mass of disease, and disappear with the advance of the carcinoma. Now and then, however, at a time when the lips of the os are still unaffected, an outgrowth of cancerous tissue, generally of the medullary kind, springs from the interior of the womb, and descends into the vagina. The point of origin of such malignant polypi is usually low down in the cavity of the womb, or actually within the canal of the cervix, but occasionally they spring from its fundus. Of this a remarkable illustration is given by Boivin and Dugès, and an instance of it came under my own observation some years since at the Middlesex Hospital, into which institution a woman came to die, apparently of ascites. An abundant and very offensive vaginal discharge attracted attention to the state of her womb, when a polypus considerably larger than the fist was discovered in the vagina. After her death, in addition to extensive cancerous deposits in various abdominal viscera, the walls of the uterus were found thickened by medullary deposit, and its cavity distended by the polypus, which sprang by a pedicle half the size of the wrist from the fundus of the womb. The polypus was of a very soft texture, and possessed of considerable vascularity. One other case of cancerous polypus has come under my observation. The outgrowth was of much smaller size, and, as well as could be ascertained, sprang from low down in the body of the womb. It projected but a short distance into the vagina, and the lips of the os uteri looked healthy, though there was some degree of thickening and induration of the posterior lip. I believe, indeed, that though the formation of the malignant polypus may precede other disease in the womb, yet the cancer before long extends to the uterine walls, and I am not aware of malignant outgrowths having ever been found in an otherwise healthy uterus.

I believe that I have twice met with *alveolar cancer* of the womb, but in one instance only have I had the opportunity of corroborating my opinion by an examination after death. In that case the lips of the os uteri were nearly destroyed, and a layer of dense medullary carcinoma formed the base from which projected numerous semi-transparent warty granulations, occupying the whole interior of the uterus, and filled with a rather firm semi-transparent gelatinous matter, such as Lebert,[1] who appears to have met with this condition several times, speaks of as its characteristic.

The *epithelial* cancer of the uterus presents itself under two forms; either assuming the character of a granular outgrowth from the lips of the uterus, or else of an intractable ulceration of their surface. In its most characteristic form, the first variety is the *cauliflower excrescence* of Dr. John and Sir Charles Clarke;

[1] *Traité des Maladies Cancéreuses*, 8vo., Paris, 1851, p. 217.

but of far more common occurrence are cases which, though essentially the same, present points of difference approximating them to ordinary medullary cancer.

In its very early stages, epithelial cancer[1] of the womb has only twice come under my observation; for the comparatively trifling symptoms to which it at first gives rise seldom force themselves upon the attention of our patients. In one of the instances in which I had the opportunity of seeing the disease of the uterus at its commencement, it was secondary to the same affection in the vagina, but in the other the vagina was perfectly healthy. In the first case there was a patch of the size of a shilling on the surface of the posterior uterine lip, somewhat raised above the surrounding surface, of a vivid red color, bleeding readily, and with a papillary structure so fine that it closely resembled the pile of red velvet. In the second case the disease occupied the anterior part of the anterior uterine lip, the outer edge of which felt sharp-cut and everted, and the speculum discovered on it a small patch of abrasion, soft and velvety to the touch, and seen under the speculum to be beset with fine sessile granulations. In all other instances that have come under my notice, the disease has been much more advanced, the cervix of the womb has been already somewhat increased in size, the os uteri not open, but its lips flattened and expanded, so that their edge, which felt a little ragged, projected a line or two beyond the circumference of the cervix, while their surface was rough and granular to the touch. On introducing the speculum, this irregularity was seen to be produced by the aggregation of numerous small, somewhat flattened papillæ or granulations, of a reddish color, semi-transparent appearance, and often bleeding very readily. Sometimes these granulations continue for many months, scarcely at all increasing in size or altering in character; and then on one or other lip an ulcer forms, with irregular, excavated edges, and the case, if then seen for the first time, would scarcely be suspected to have been other than one of ordinary uterine cancer. Often, however, the small sessile papillæ increase in size, and form a distinct outgrowth from the whole circumference of the os uteri, of the size of an egg, an apple, or even of a greater magnitude. These growths are split up by deep fissures into lobules of various sizes, all of which, however, seem to be connected together at their base, though the fissures are so deep, and their directions so various, that it is seldom possible, when the growth is of any size, to distinguish between them and the os uteri itself. The dimensions of these growths are not in general the same throughout, but they spring from the surface

[1] I have retained the term *cancer* as applied to these varieties of malignant disease of the uterus, because I do not feel myself competent to form an independent opinion with reference to what is still a moot point between the highest authorities; and because the general tendency of epithelial and cancroid diseases of the womb is to become associated during their progress with medullary cancer; often, indeed, they lose their own distinctive features completely, merging them in those of ordinary uterine carcinoma.

of the os uteri by a short thick pedicle or stem, the elongated and hypertrophied cervix, and then expand below into that peculiar cauliflower-like shape from which their name has been derived. Even the most careful examination generally breaks down some of the tissue of the growth, and produces hemorrhage; but if, in spite of this, the finger be carried down to its base, the substance will be found to become much firmer, and at the same time to be possessed of a degree of sensibility which, though but low, is much greater than that of the more depending part of the tumor. Sometimes the outgrowth is confined, at any rate at its commencement, to one lip, and may attain a considerable size before the other is involved in the disease.[1] This is more likely to occur if the posterior than if the anterior lip is affected, and for the obvious mechanical reason which accounts for every large polypoid outgrowth being flattened on its anterior surface, spheroidal on its posterior. The hollow of the sacrum allows more room for the development of any outgrowth than is afforded by the comparatively flattened anterior half of the pelvic cavity bounded by the rami of the pubes.

Though the vagina does not by any means escape from a participation in the disease, and a granular or papillary structure may be felt sometimes extending over its roof, and for some distance along one or other wall, yet this is by no means constant; and so long as the disease retains its original characters well marked, the disposition to involve adjacent parts is far less than in ordinary uterine cancer. The tendency, however, to pass into ordinary medullary cancer, or to become associated with it, is very strong; while we find that the tumor itself undergoes the same processes of alternate partial death and partial reproduction, as we have noticed in other forms of malignant disease. Usually the outgrowth in the course of time disappears in part, and the irregular, sharp-cut edge of the os, whence it grew, is at first felt granular and uneven within, but afterwards grows thicker and nodulated, assuming by degrees all the characters of a part which has from the first been the seat of medullary cancer, while the walls of the organ and its interior likewise undergo just the same changes.

Between this disease and genuine cauliflower excrescence the differences appear to be of degree rather than of kind. In the latter, indeed, the epithelial cells which compose it are of the cylindrical form, but its more obvious peculiarities consist in the larger size of its vessels, in the greater delicacy of their walls, and in their being covered by a thin investment, not bound together into a comparatively solid mass by connecting tissue, but "hanging in fringes almost like a mass of uterine hydatids;"[2]

[1] Of which there is a very characteristic drawing in Boivin and Dugès' *Atlas*, plate xxiv, fig. 1.

[2] This not inapt comparison is made by Virchow in his description of the microscopic structure of these growths, in the *Verhandl. der Phys. Med. Gesellschaft in Würzburg*, vol. i, p. 110, whicl. harmonizes with and completes previous observa-

while the base of cancer substance, which in the more solid growths is deposited very early, in the delicate and vascular cauliflower excrescence is not formed till a much later period, or even not at all. Their intimate structure, however, and their microscopic elements are just the same, and both consist of hypertrophied papillæ, composed of epithelial cells richly supplied in their interior with large and delicate vessels, and covered with a thickened layer of epithelium. The enormous looped capillaries of the cauliflower excrescence explain the abundant hemorrhages and the profuse serous discharges that attend it, while the absence of that solid structure which is found in other forms of epithelial cancer accounts for the peculiarly favorable results that have followed its extirpation, and also for the fact that after its removal a few shreds are all that remain of what had seemed to be a large and firm tumor.

Difference of opinion exists as to the exact nature of those *intractable ulcerations* of the os and cervix uteri, which, in accordance, as I believe, with the preponderance of authority on the subject, I have referred to epithelial carcinoma, but which are alleged by some very competent observers to be tuberculous. When speaking of uterine tubercle, I made mention of numerous small deposits of a yellowish color sometimes met with on the surface of the os uteri, and which, if punctured, or if their contents escape spontaneously, sometimes leave behind small slightly excavated ulcers. Their tuberculous character did not, however, appear to me to be clearly substantiated, since I had never observed any general fusion of the deposits, and consequent breaking down of the tissue of the cervix. M. Lisfranc, however,[1] has described a condition which has never come under my own notice, but which has been seen and described by M. Robert,[2] M. Pichard,[3] and others, who relate cases illustrative of its character, and who refer it to the breaking down of tubercular deposits in the substance of the cervix.

"These tubercular ulcerations of the cervix uteri," says M. Robert,[4] "may be recognized by their excavated base, their grayish appearance, and the presence of a caseous matter in the midst of the muco-purulent discharges which come from the interior of the cervix. They may also be known by the presence in the cervix of tumors of uncertain size, of a rounded form, at first firm and with no change of color, afterwards soft, whitish, yielding to the pressure of the fingers, and giving an indistinct sense of fluctua-

tions. Very good representations of the general aspect of these growths are given by Sir C. Clarke in vol. ii, pl. i, of his work on *Diseases of Women;* by Dr. Simpson, at pp. 165 and 166 of his *Obstetric Works;* and by Dr. Mayer, in vol. iv of the *Verhandl. der Ges. f. Geburtsh. in Berlin*, which also contains a drawing of the appearances presented under a low magnifying power.

[1] *Clinique Chirurgicale*, &c., vol. iii, pp. 548–553.

[2] *Des Affections, &c., du Col de l' Uterus*, 8vo., Paris, 1848.

[3] *Des Abus de la Cautérisation, &c., dans les Maladies de la Matrice*, 8vo., Paris, 1846, pp. 124–132.

[4] *Op. cit.*, p. 48.

tion. These tumors are formed by the tubercular matter still in a crude state, or in course of softening.

"It is, moreover, to be observed that these scrofulous ulcerations are almost always accompanied by considerable engorgment of the cervix uteri, a condition which is due either to the presence of masses of tubercle still unsoftened, or to some tubercular infiltration still remaining, or lastly, to that inflammatory process which accompanies the softening and elimination of this kind of morbid product. This last circumstance may obscure the diagnosis of the case, and lead to the belief that the engorgements or the ulcerations are of a malignant character, an error which Lisfranc confesses that he fell into several times."

These appearances, however, receive a different interpretation when the microscope is called in to aid our researches. The softened matter is found not to consist of the elements of tubercle, but of epithelial cells similar to those of the uterine mucous membrane, while the indurated callous structure which forms the base of the ulcer is formed of a mixture of fibro-plastic and epidermoid materials. In short, as M. Robin[1] says, this kind of ulcer is to the uterus what lupus or cancroid ulcers are to the face, the chief differences between them depending on the constant exposure of the latter to the air, and the constant contact of the former with the mucous and other secretions of the vagina.

One affection still remains to notice, which, though less strictly deserving to be ranked with cancer than were those varieties of malignant disease which we have just now been studying, yet will find here perhaps its fittest place. The late Dr. John Clarke was the first writer who described, under the name of *corroding ulcer*, a peculiar form of destructive ulceration of the os and cervix uteri, beginning at the mucous membrane which covers it, involving the whole circumference of the os, and utterly destroying both it and the subjacent parts, but differing from carcinoma in the absence of any thickening, hardness, or deposit of new matter in its vicinity. Not to dwell on certain differences between its symptoms, and those of ulcerated carcinoma, the fact that the corroding ulcer may continue for several years without causing any very formidable symptoms, while death takes place speedily as well as inevitably in ulcerated cancer, points to some essential difference between the two diseases.

Its real nature has given rise to much difference of opinion, and the rarity of the affection has been a great obstacle to the thorough understanding of its nature. There can be no doubt, however, but that it ought to be classed with rodent ulcers, as indeed it has been by all recent microscopic observers, for, like them, its aspect, rate,

[1] The conjoint testimony of Robin, *Archives de Médecine*, August, 1848, pp. 407–411; of Lebert, *Maladies Cancereuses*, p. 218; and of Hanover, *Das Epithelioma*, 8vo., Leipsig, 1852, p. 126, may be taken as decisive on this point. It is, I think, extremely doubtful whether Dr. Gibbs's case of alleged extensive tuberculous ulceration of the uterus and bladder, described at p. 269 of vol. vi of *Transactions of the Pathological Society*, ought not rather to be referred to this category.

and mode of progress are unlike those of cancer, while neither cancer-cells nor epithelium formations are present in the adjacent tissues.[1]

One point only connected with the morbid anatomy of uterine cancer still remains for notice, and that concerns the *frequency with which other organs become affected* in the course of the disease. I apprehend the number of cases to be very few indeed in which cancer has not extended before the death of the patient by continuity of tissue from the uterus itself to some of the parts immediately adjacent. Thus, for instance, it is certainly very unusual for a patient to die of uterine cancer, in whom there does not exist some degree of cancerous infiltration into the upper part of the vagina; and, as we shall see hereafter, the frequency of this occurrence, even at a comparatively early period of medullary cancer, is one of the circumstances which most of all interferes with the success of operative proceedings for its cure, and which oftenest contraindicates any attempt at their performance. There does, however, seem to be reason for believing that carcinoma of the uterus is oftener at its commencement confined to one part, and that it continues so for a longer period than does cancer when situated in any other organ of the body, though in neither of these respects does it present the striking differences from cancers of other parts which was formerly supposed, and in which one would gladly still believe. M. Lebert[2] states that the evidence of general infection of the system, as manifested by secondary deposits in other organs, existed in only a third out of forty five cases of uterine cancer, but in twenty-four out of thirty-four, or in five-sevenths of the number of cases of cancer of the breast. These results, however, are more favorable than those which the late Professor Kiwisch deduced from seventy-three post-mortem examinations of uterine cancer made in the hospital at Prague. He found cancer of the bladder in 42 per cent. of his cases; Lebert[3] only in 13 per cent.; of the ovaries in 19; and of the lungs in 7.5 per cent.; while Lebert met with each of them only in the proportion of 4.4 per cent. These discrepancies, which I am not able from personal observation to explain, are yet probably due to the different forms of cancer having occurred in different proportions at Paris and at Prague; possibly to the greater frequency of epithelial cancer in the former city, and of medullary cancer in the latter. In any future statistical table showing the frequency of cancerous infection of the system, it will obviously be necessary to refer the cases to different categories according to the character of the primitive disease. In the meantime the knowledge of the fact that such infection of the system occurs perhaps less invariably, probably less early in cancer of the womb than in other forms of the disease, may serve to throw a feeble

[1] Hanover, *op. cit.*, p. 128.
[2] *Op. cit.*, pp. 239, 310, 394.
[3] *Op. cit.*, vol. i, p. 511.

ray of hopefulness over the gloomy prospect which we have now to contemplate from other points of view.[1]

LECTURE XX.

MALIGNANT OR CANCEROUS DISEASES OF THE UTERUS.

Their frequency; causes influencing the occurrence of cancer,—as age, state of the menstrual function, its mode of establishment, childbearing; influence of childbearing accounted for; hereditary tendency.
Symptoms of cancer; mode of onset, and first symptom. Pain, its character, and causes. Hemorrhage, its import; frequent as a first symptom, and why. Discharges; cause of their offensive character, and of variations in this respect.
Cancerous cachexia; its characters.
Two exceptional forms of cancer, the latent and the acute.
Influence of cancer upon labor.
Diagnosis of uterine cancer.
Duration of the disease.

One of the reasons which at the commencement of the last Lecture I assigned for occupying much of your time with the study of carcinoma of the uterus, was the *frequency* of its occurrence. Our tables of mortality, indeed, do not at present enable us to learn with complete accuracy how often it is met with, but they furnish data from which it is not difficult to make a tolerable approximation to the truth. It appears from the Seventeenth Report of the Registrar-General,[2] that the mortality from cancer throughout England in the year 1851 amounted to 1754 males, 4072 females. The whole of this excess of female mortality from cancer may be confidently attributed either to cancer of the breast or of the womb. According to Tanchou's tables,[3] however, deduced from the mortuary registers of Paris, cancer of the womb was more frequent than cancer of the female breast, in the proportion of 2996 to 1147, or as 2.6 to 1. Neither this statement, however, nor the assertion which he also makes, that uterine cancer was the cause of 1.6 per cent. of all female deaths during the decennial period to which his calculations refer, can be received as absolutely correct, though it is my impression that neither the one nor the other deviates much from the truth. The absolute frequency of uterine cancer, though not the exact proportion which it bears to other fatal diseases of the female sex, receives another illustra-

[1] From a comparison of uterine cancer with cancer of the stomach, Wagner, *op. cit.*, p. 100, comes to the conclusion, and I very much fear the correct conclusion, that in respect of the extension of the disease from its original seat, and of the occurrence of secondary deposits, uterine cancer does not occupy that exceptional position which was once supposed, but that it presents a remarkable similarity to cancer of other hollow organs, chiefly composed of organic muscular fibre, as the œsophagus, stomach, and intestines.

[2] See p. 124.

[3] *Recherches sur le Traitement Médicale des Tumeurs Cancéreuses du Sein*, 8vo., 1844, p. 258.

tion from the fact that out of 5122 post-mortem examinations of both sexes in the hospitals of Prague, Vienna, and Leipzig, there were 441 of cancer, of which 113 were of cancer of the womb.[1]

I have already referred more than once to the circumstances which render the statistics of a large hospital inconclusive as evidence of the comparative frequency of different diseases. The sufferings that generally attend cancer in some of its stages, and the costly nature of the remedies by which these sufferings are best assuaged, induce a very large number of patients afflicted with that disease to seek relief at a wealthy institution like St. Bartholomew's Hospital, and I have no doubt but that my own experience there would, without allowing for these causes, lead me to suppose cancer of the womb to be even more common than is actually the case.[2] But though this be so, the disease still remains, of all organic affections of the womb, alike the most frequent and the most terrible.

We light at once upon surer ground if, from the attempt to determine its exact frequency, we pass to the inquiry into the circumstances that favor its development; the influence of age, of marriage, childbearing, &c., upon its production.

Dr. Walshe,[3] whose erudite work on Cancer will always continue to be, with reference to many points, the best authority on the subject of which it treats, was the first to show that there is a progressive increase in the frequency of cancer with the advance of age. I hardly need observe that the frequency of any disease at different ages can be rightly estimated only by a comparison of the number of cases in which it occurs, with the total population at the same age; though, from neglecting this obvious condition, erroneous conclusions have sometimes been drawn with reference to this and other similar questions.

Taking the population of England, however, at decennial periods, it seems, and Mr. Paget's researches lead to the same result, that with every ten years of additional age after the age of twenty, the liability to cancer steadily increases. A fact this of great interest, showing how a disease of constitutional degeneracy grows more and more common with the enfeebling of the powers of nutrition, and attains its greatest frequency when nature's alchemy has well-nigh reached its end, and the power to transmute the rough material into the highly organized and wonderfully complex tissues of the body is almost gone. But it is scarcely less interesting to find that when a part has outlived its uses it often begins to die, and that the greatest frequency of cancer of the

[1] Wagner, *op. cit.*, p. 2.

[2] Dr. Lever, on *Diseases of the Uterus*, 8vo., London, 1843, p. 165, states that among the out-patients of Guy's Hospital, the proportion of cases of uterine cancer to other uterine diseases was nearly as 1 in 7, or 13.5 per cent. At Bartholomew's I found the proportion to be 1 in 18.2 or 5.4 per cent.; numbers which I mention merely as showing how unsafe it would be to draw any inferences as to the comparative frequency of that, or, indeed, of any other disease, from such data as are afforded by the out-patient books of an hospital.

[3] *Op. cit.*, p. 140.

breast and of the womb is not governed by the same law as prevails with reference to the disease in other parts, but occurs long before the ordinary period of human life has been attained.

"The age of most frequent occurrence of scirrhous cancer of the breast," says Mr. Paget,[1] "is between forty-five and fifty years. Nearly all records, I think, agree in this. The disease has been seen before puberty, but it is extremely rare at any age under twenty-five; after this age it increases till between forty-five and fifty, and then decreases in frequency; but at no later age becomes so infrequent as it is before twenty."

This statement, too, he illustrates, not simply by the absolute numbers of cases which he has collected, but likewise by comparison with the population at different ages.

Much the same fact holds good with reference to uterine cancer, as is shown by the subjoined table of the ages of the patients in 595 cases,[2] collected from various sources.

	Actual Number.
Between 25 and 30 years,	39
" 30 " 40 "	166
" 40 " 50 "	242
" 50 " 60 "	95
" 60 " 70 "	48
Above 70 "	5
	595

Though the period of a woman's life exerts so great an influence in predisposing to cancer of the womb, it yet does not appear that the actual cessation of the menses has any important share in calling that predisposition into activity. In six out of eighteen of Lebert's cases,[3] in which menstruation had already ceased, the commencement of the disease was stated to coincide with the cessation of the menses. The same coincidence, however, was observed only in three out of thirty-nine of my patients in whom menstruation had already ceased. In two even of these the symptoms were said to have existed for eight and ten years respectively, so that all which can be reasonably alleged concerning them is that indications of uterine disease had persisted ever since the menstrual crisis, and that at length cancerous disease had become developed. In one case the first symptom of cancer appeared within five months, in another within eight months, in three in a year, in two in three years, and in the remaining thirty at periods varying from three and a half to twenty-nine years from the cessation of the menses.

The antecedent condition of the patient's uterine functions, as

[1] *Op. cit.*, vol. ii, p. 324.

[2] Of these cases 170 are from my own notes; the remainder are collected from Lebert, Kiwisch, and his editor Scanzoni, from Chiari, and from Dr. Sibley's "Report on the Statistics of Cancer in the Middlesex Hospital," in vol. xlii of *Medico-Chirurgical Transactions*. I purposely do not include the often-quoted table given by Madame Boivin (*op. cit.*, vol. ii, p. 9), because it was drawn up at a time other diseases were not infrequently confounded with cancer, and that her facts are vitiated by this error is abundantly evident.

[3] *Op. cit.*, p. 275.

far as the presence or absence of menstrual disorder, or of previous disease of the womb, is concerned, is not without interest from the negative result which it yields, and from the evidence thus afforded, if farther proof of the fact were wanting, that no relation whatever subsists between inflammatory affections of the womb and the subsequent occurrence of cancer of the organ.

In 157 out of the 170 cases, the manner in which the menstrual function was usually performed was made the subject of special inquiry. In 131 cases it was performed in all respects naturally, from the time of its complete establishment until the commencement of the disease. In 26 cases it was either habitually or frequently unnatural in some respect or other, viz.:

In 1 scanty,
" 10 painful,
" 2 profuse,
" 4 profuse and painful,
In 4 postponing,
" 4 irregular,
" 1 anticipating.

If the inquiry be made with reference to the first establishment of menstruation, we shall as little find anything indicative of a special connection between the difficult establishment of the menstrual function and the subsequent development of cancer. In 117 out of 146 cases, menstruation was established without any untoward symptom, while in 29 instances its first occurrence was attended by more or less local or constitutional suffering. These numbers yield the proportion of almost exactly 20 per cent. of unfavorable cases, while the average which I obtained from all patients who came to me at St. Bartholomew's Hospital on account of uterine ailments was 22.7 per cent. of unfavorable cases; and Mr. Whitehead, of Manchester, arrives at 22.30 per cent. as the proportion of unfavorable cases among 4000 women not suffering from any special disorder of their sexual system.

But though it should appear that in these cases neither the first establishment of menstruation nor the manner of its ordinary performance has presented any striking deviation from health, it may yet be supposed that we shall find indications of previous uterine disorder (as some suppose of uterine inflammation), out of which the cancerous disease has been subsequently developed. Evidence, however, seems to be directly opposed to this supposition, for in the history of only 5 out of the whole 170 cases is there any mention of serious uterine ailment previous to the commencement of the cancer. One patient had had a polypus removed ten years before, two stated that they had suffered ever since their last confinement, ten years before in the one instance, and three in the other, from symptoms of uterine affection; in one the symptoms gradually developed themselves out of those of uterine inflammation, and in the fifth out of those of pelvic abscess in the course of two years.

Though ample proof to the contrary has been long since adduced, we still find it asserted sometimes that single women and those who have had no children are most liable to be attacked by

cancer. The truth appears to be the direct reverse of this statement; for out of 168 cases of uterine cancer, there were but 3 in which the patients were single women, and only 13 in which they were sterile. In other words, there was but 1 sterile marriage in every 13 of the cancer patients, while the general average among my patients at St. Bartholomew's Hospital was 1 sterile marriage in every 8.5. Nor is this all; but the further we carry this inquiry the more strikingly does it appear, not that sterility, but rather that over-fecundity, predisposes to uterine cancer.

As already stated, only 13 out of 165 married women affected with cancer were sterile, 2 are said to have had children, but their number is not stated, while the remaining 150 had been pregnant 1046 times, 189 of the pregnancies terminating prematurely, 857 at the full period. Or, to state the same fact somewhat differently, there was an average of 6.8 pregnancies to each fruitful marriage, or 5.6 children at the full period, and 1.2 abortions, while the number of children per marriage in this country generally is estimated at 4.2.[1]

Some of these points will perhaps be still better illustrated by the subjoined table:

Number of women.	Pregnancies to each.	Number of women.	Children to each.	Number of women.	Abortions to each.
13	1	15	1	32	1
15	2	16	2	22	2
11	3	18	3	11	3
7	4	11	4	6	4
11	5	17	5	6	5
17	6	14	6	1	7
14	7	16	7	1	8
10	8	11	8	1	11
10	9	9	9	...	...
9	10	8	10	...	...
11	11	3	11	...	...
6	12	3	12	...	...
7	13	2	13	...	...
2	14	2	14	...	...
2	16	1	17	...	...
1	17	1	18	...	...
1	18	...	...	...	...
1	19	...	...	...	...
1	20	...	...	...	...
1	24	...	...	...	...
150		148		80	

The table explains itself sufficiently to render comment superfluous. One only fact seems worth remarking on—namely, that

[1] It is almost superfluous to adduce further evidence of this fact. Thus Dr. Sibley's *Report on the Statistics of Cancer* gives an average of 11 per cent. sterile marriages, and 5.2 children to each fruitful marriage. Scanzoni's figures, *op. cit.*, p. 284, yield the singular result of 7 children to each fruitful marriage, but at the same time 36 sterile marriages out of 108.

there were but 2 out of the whole 150 women whose pregnancy had issued merely in abortion.

In 18 of the 150 cases, the particulars of which are given in the annexed table, the termination of the patient's pregnancy occurred within a sufficiently short period from the commencement of the symptoms of cancer to warrant the suspicion that, in some of them at least, the changes of the puerperal state had a share in calling the disease into activity.

Number of Pregnancy.	Number of Children.	Number of Abortions.	Issue of last Pregnancy.	Date of Symptoms of Cancer.
3	3	...	Live Child.	10 months.
7	6	1	"	6 "
12	12	...	"	6 "
10	5	5	"	4 "
4	3	1	"	Immediately.
10	7	3	"	"
9	9	...	"	"
2	1	1	"	"
6	2	4	"	"
7	5	2	"	"
3	2	1	Abortion at 4 months.	1 month.
11	10	1	Ditto at 5th month.	Immediately.
7	6	1	Ditto at 2½ months.	"
7	4	3	Ditto at 3 months.	"
6	4	2	Ditto at 4 months.	"
13	9	4	Ditto at 4 months.	"
10	7	3	Ditto, period not stated.	"
17	13	4	Ditto, ditto.	"

All of these patients were seen by me within fifteen months, most of them within six months from the occurrence of abortion or labor. When the symptoms are stated, as in thirteen instances they are, to have come on immediately, it is meant that there was no interval of health between the patient's delivery or miscarriage and the occurrence of hemorrhage, or of some well marked symptom of cancer, such as had continued in each case to characterize it subsequently, and which in most instances was present at the time of the patient coming under my care.

A few moments' consideration will, I think, do away with any feeling of surprise at the result which these tables show. With old age comes imperfect and perverted nutrition, and with it cancer in the body generally increases in frequency. Such old age, such imperfect nutrition, befall the womb earlier than they do other organs, and cancer becomes developed there proportionately early. With each successive pregnancy the development of the womb is less and less perfectly accomplished, and the feeble

uterine action of the multipara, the greater comparative frequency of hemorrhage after delivery, and even of rupture of the uterus in women who have given birth to several children, than in those who are in labor for the first time, are but so many different illustrations of the same fact. It is not therefore the woman who has never conceived, but she whose uterus has oftenest undergone all the changes which the puerperal state brings with it,—the fatty degeneration of its fibres, the wasting of its tissue, the most profound disturbance of its nutrition,—in whom this disease of perverted, imperfect nutrition is most frequent. Nor is the fact without its significance as illustrative of the same law, that in 18 out of 110 women living in fruitful marriage, in whom cancer of the womb came on before the fiftieth year, or, in other words, before the period of sexual vigor was passed, the very moment at which the important changes of the puerperal state were going on, the very time when the nutrition of the womb was most disordered, should have been that at which, one might almost say out of which, this disease, so insidious and so fatal, was developed.

One point still remains for notice with reference to the production of cancer—namely, the influence of hereditary predisposition in favoring its development. In the case of cancer generally, the influence of constitutional taint has been ascertained to be very real; nor does it appear to be less so in the case of cancer of the womb, though the number of observations bearing on the subject is perhaps too small to warrant a positive opinion. Of 160 cases of cancer of all parts, collected by Paget,[1] 26, or 1 in 6.1, presented the history of hereditary cancerous taint; and the same fact was ascertained with reference to 14 in 102, or 1 in 7.2 of the cases referred to by Lebert.[2] Lebert found evidence of hereditary tendency to cancer in 2 out of 13 cases of cancer of the womb;[3] and it existed in 8 out of 49 cases, or in 1 out of 6.1, in which I made this point the subject of inquiry. In 1 of the 8 cases the patient's father had died of cancer of the throat; in 2 the mother; and in 4 the sister had died of cancer of the womb, and in 1 the sister had died of cancer of the breast.

There are three *symptoms* of cancer of the womb so almost invariable in their occurrence that the merest tyro would not fail to mention them, and the man of greatest experience would still enumerate them as its grand characteristics. Pain, and hemorrhage, and vaginal discharge often coexist in the advanced stages of the disease, and one or other of them is present from its commencement, or furnishes us at least with the first evidence of its existence. The once common error, however, which confounded under the name of scirrhus a variety of uterine ailments that had no real relation whatever to malignant disease, led to equally serious misapprehension of the import of these symptoms. Hemorrhage was supposed to be the invariable evidence of ulceration having occurred, while pain and constitutional disorder, and

[1] *Op. cit.*, vol. ii, p. 538. [2] *Op. cit.*, p. 134. [3] Ibid., p. 273.

sundry forms of functional disturbance, both of the womb and of adjacent viscera, were imagined to characterize the first or so-called scirrhous stage of the disease.

In 166 cases the first symptom of cancer was stated by the patient to have been

In 30	instances,	or 18.0	per cent.,	pain of various kinds, and of various degrees of intensity.
" 77	"	46.3	"	hemorrhage, generally profuse, without pain.
" 23	"	13.8	"	hemorrhage, accompanied by pain.
" 15	"	9.0	"	pain and leucorrhœa, or watery discharge, sometimes offensive.
" 21	"	12.6	"	leucorrhœa, or other discharge without pain.

Each of these symptoms deserves a more careful examination; and, first, with reference to the pain. Both at the commencement, and through the whole course of the disease, this varies greatly in situation, in character, and in intensity; and there is no one kind of pain which can be regarded as peculiar to uterine cancer in any stage of its progress. Under the term pain, too, must be included various uneasy sensations experienced during the act of defecation or micturition, the result sometimes doubtless of the disease having at an early period affected the bladder or the bowel, but oftener the consequence of the congested state of the pelvic vessels, or of that sympathy between the womb and other pelvic organs, of which, in the course of all uterine ailments, one meets with so many illustrations. As a general rule, the pain of the early stage of cancer is not severe; it is by no means constantly referred to the uterus, but is more often spoken of as backache, or pain in the loins, wearying by its constancy rather than by its severity. With this is associated in some instances pain in the hypogastrium, usually of the same dull character; but hypogastric pain alone, and unaccompanied by backache, is decidedly unusual. Lancinating pain, decidedly referred to the uterus, is not common at an early stage of cancer, neither is the organ in general tender to the touch, and in not a few instances even sexual intercourse does not appear to be attended by any special suffering. As in other forms of uterine disease, pain is occasionally referred to one or other iliac region, and, like ovarian pain in general, is marked by a tendency to exacerbation in paroxysms. In those cases in which the disease sets in with menorrhagia, the excessive loss of blood is often accompanied with much pain; but, as appears from the table, the majority of cases of hemorrhage at the outset of cancer are characterized by the absence of pain; while the cessation of the previously profuse bleeding is often associated with the setting in of pain, from which the patient was previously free.

With the advance of the cancerous disease, pain in general increases much in severity, though there is no invariable rule which determines either the amount or the seat of the chief suffering; while, in by far the greater number of cases, the severest pain is experienced long before the patient's death, and the last months of existence, when all the evidences of the cancerous

cachexia are most marked, and the strength is daily declining, are happily not in general agonized by intensity of suffering such as had been previously endured. The causes, however, which contribute up to a certain point to increase the patient's sufferings as her disease advances are many, while all the old sources of distress continue. Pain referred to the uterus is now often superadded to the former pain in the back and the abdomen; and this pain, though constant, has its exacerbations, in which it becomes utterly intolerable, is sometimes described as a burning pain, sometimes as a stabbing pain; while, when most intense, it is a horrible agony, which can be likened to no other suffering, of which words seem unable to convey any idea. Every night generally brings with it increase of suffering; but the fits of the sharpest pain are uncertain in their occurrence, and appear to come on without any exciting cause. Sometimes the severer pain precedes an outburst of hemorrhage, and then the bleeding gives relief for a time; but in many instances this is not the case. Besides the old hypogastric pain, from which the patient often suffers in the earlier stages of this disease, there are now frequent attacks of circumscribed abdominal pain and tenderness, indicative of the peritoneum covering the pelvic organs having been attacked by inflammation, and such inflammation comes and goes several times in the course of the disease. The advance of the disease from the uterus itself, along the walls of the vagina, adds much to the patient's sufferings, and does so especially when the anterior vaginal wall is thus affected. In this case the infiltration of cancer into the tissues at the upper part of the vagina interferes with the return of blood from parts quite uninvolved in the disease. Hence the great swelling of the urethra, which may often be felt of the size of two thumbs all the way from the symphysis pubis to the bladder, and hence in a measure the frequent desire to pass water, the difficulty in voiding it, and the occasional inability to retain it, which so greatly harass patients with cancer in the womb. But other causes besides tend to aggravate this symptom. It is, as we saw when studying the morbid anatomy of cancer of the womb, by no means unusual for the bladder, independent of the extension to it of malignant disease, to be the seat of intense congestion, or of inflammation going on to the deposit of lymph on its rugæ, or to actual ulceration of its mucous membrane. Moreover, the extension of cancer from the uterus or vagina into the bladder is usually accompanied by much severer suffering than is experienced in primary malignant disease of that organ, while, when once utero- or vagino-vesical fistula has been formed, sufferings from a new source are entailed upon the patient. In some instances, too, when there is much deposit of cancerous matter about the bladder, one or other ureter is obstructed, though not in general absolutely closed, and it becomes much dilated, running a tortuous instead of a straight course, while its walls are greatly thickened; and the kidney itself, owing to the difficulty in the performance of its functions, and in the escape of its contents,

wastes, its glandular structure almost completely disappearing, its calices being dilated into a number of sacculi, distended by a urinous fluid.[1] In a minor degree, this occurrence is by no means unusual, and to it must, I think, be attributed a measure of the backache and of the dysuria from which patients with uterine cancer suffer.

And now, before passing to the examination of another symptom, something ought to be said with reference to those few exceptional cases in which cancer of the womb runs its course entirely, or almost entirely, without pain. It cannot be too constantly borne in mind, that in many instances the three grand symptoms of cancer,—pain, and hemorrhage, and offensive discharge,—are not present at the same time. The disease often sets in with hemorrhage, and often while the bleeding lasts no pain is experienced, nor is any fetid discharge perceptible. At a later stage the bleeding ceases, the pain then becomes severe, and the discharge offensive, and continues so to the end, though the pain frequently subsides, sometimes altogether ceases long before the patient dies. Most of the errors in the diagnosis of uterine cancer which have come to my knowledge have arisen from forgetfulness of this fact; and the absence of pain or of fetor of the discharge has been assumed to negative the possibility of cancer in spite of the clearest evidence afforded by vaginal examination of its existence. It is, however, a very rare occurrence indeed for pain to be absent through the whole course of cancer, though by no means unusual for the disease to have made great progress before any suffering is experienced. Though not invariably, yet in the majority of cases, it is the epithelial variety of cancer which is distinguished by this absence of pain. Still, in some of the soft varieties of medullary cancer, I have observed the same thing. One patient, a young woman, aged thirty, was not aware of the existence of any serious disease until a profuse discharge of blood took place on one occasion during sexual intercourse; and I knew another who imagined herself to be suffering merely from menorrhagia, to have had intercourse with her husband, and not to have supposed her ailment to be serious till abortion at the sixth week of her pregnancy destroyed her by the hemorrhage which accompanied it. In both of these cases the disease was of the medullary kind. The most remarkable case, however, which I have met with, and indeed the only instance in which no pain at all was experienced, was that of a woman aged thirty, who had menstruated irregularly for three years, though without any symptom of local ailment, and had recovered but imperfectly from her sixth labor fourteen months before she came under my notice. Eleven months before I saw her, she had sudden and very profuse hemorrhage, which continued for eight weeks, and was then succeeded

[1] See, for remarks on this condition of the kidney, Cruveilhier, *Anatomie Pathologique*, vol. ii, p. 370, and *Atlas*, livraison xxvii, pl. ii, fig. 2; and also Wagner, *op. cit.*, p. 111.

by abundant transparent non-offensive discharge. From that time until her reception into the hospital, the hemorrhage or the watery discharge had been constantly present, and the patient was admitted, in a state of extreme exhaustion, on the 15th of July. Rest and astringents checked both the bleeding and the discharge, and food and wine restored her strength so far, that on the 30th she went home to arrange some domestic matters, but on my representation of the serious nature of her disease, she returned on the 5th of August. Hemorrhage recurred the next day, and continued for ten days, but on the 21st she was so far recovered, and had regained so much strength, that all my persuasions to induce her to remain were ineffectual. She went home; on the 1st of September hemorrhage returned, and of this she died on the 5th, having throughout had no other sense of discomfort than some difficulty in micturition, from which she had suffered for two years, and which was not at all increased in severity by the supervention of the cancerous disease.

Next on the list of symptoms stands hemorrhage; and contrary to what is still laid down in some books, bleeding, so far from being a proof that the disease has reached the stage of ulceration, is often the earliest sign of its existence, since it is mentioned in forty-six per cent. of the cases as preceding any other ailment. A similar error, as you scarcely need to be reminded, was once generally current with reference to hemorrhage from the lungs in phthisis. The hæmoptysis, which we know to be in many instances due to congestion of the lung, and to be the herald of coming mischief, was supposed to be the proof of irremediable injury already inflicted, of the giving way of a vessel in consequence of its being involved in the spread of the ulceration. The same explanation as accounts for the bleeding in the one case may be admitted as interpreting it in the other; and the practical inference to be drawn from this fact, concerns the extreme importance to be attached to causeless hemorrhage from the womb, the urgent need for making a vaginal examination by which we may detect some forms at least of malignant disease, at or near their outset, at a time when remedies can retard their progress, when surgery may perhaps altogether remove them.

Hospital practice gives so little opportunity for tracing cases of chronic disease from their commencement to their close, that I can give no definite statement as to the general relations borne by hemorrhage to the other symptoms of cancer throughout its whole course. The form in which the bleeding first shows itself is very various. Sometimes it is a draining of blood, not profuse but continuous, resembling the discharge at an ordinary menstrual period, except that it may not have come on at the right epoch, and that it generally continues for a longer time, until it excites anxiety by its persistence, or in other instances by the frequency of its return. It sometimes assumes these characters in the aged, in whom all the sexual functions have long ceased, but who at first regard the reappearance of a sanguineous discharge with a sort of

half complacency, as though it were an evidence of their rejuvenescence; but it is not in the aged alone that this form of hemorrhage takes place. It is, however, more common for hemorrhage to take place either at a menstrual period, or a day or two after its cessation; but though an ill-marked periodicity is generally observable in all hemorrhages from the womb, whatever be their cause, and whatever the age of the patient in whom they occur, it is certainly unusual for menstruation in cases of cancer to continue regular in its return. Sometimes menstruation anticipates, at other times there is a fortnightly hemorrhage, the discharge at each period presenting an equal claim to be regarded as menstrual; but it is not often that the proper period continues to be recognizable after two or three returns of bleeding. A few cases occur of a single profuse outburst of blood, not followed by any return of hemorrhage, or merely by the occasional admixture of sanguineous fluid with the discharge which takes place at other times. Profuse lochial discharges have once or twice passed, according to the patient's statement, into a hemorrhage which has been the first evidence of cancerous disease; but, of course, the cases in which this is observed are rare and exceptional.

In the early stages of cancer, the bleeding is, as the table shows,[1] most frequently unaccompanied by pain, though to this there are some exceptions. With the advance of the disease, pain is generally associated with the hemorrhage; for with the exception of cases of epithelial cancer, in which the delicate vessels give way under the slightest cause, congestion of the womb generally precedes each outburst of bleeding, and is relieved by its occurrence. The source of the hemorrhage continues to be the same after ulceration has taken place as it was before, and the blood is furnished much less by the diseased surface than by the whole mucous membrane of the womb. The expulsive uterine pains which in many instances accompany the hemorrhage, are due to the same cause as in ordinary menorrhagia—namely, the formation of coagula within the cavity of the womb, and the efforts of the womb to expel them; efforts which are all the more painful, owing to the resistance which they encounter from the unyielding tissues infiltrated with cancerous matter. There is no stronger evidence that the ulcerated surface furnishes but a small part of the bleeding than is afforded by its invariable diminution, often by its complete cessation in the advanced stages of cancer, while in not a few instances in which the process of ulceration has been most rapid, and the destruction of tissues most extensive, there has been but little bleeding, or the hemorrhage has been entirely confined to the outset of the disease. A woman, aged thirty-eight, came into St. Bartholomew's Hospital to die of cancer of the womb, and sank on the second day after her admission. The posterior lip of her uterus was completely destroyed, and the finger passed up at once into its cavity, whence there projected an irregular, sprouting

[1] See p. 301.

growth. The anterior lip of the uterus was firmly adherent to the anterior vaginal wall, along which the cancerous disease had extended to within an inch of the vulva, while the lip itself was irregular, thickened, and in great measure destroyed by ulceration. A single attack of hemorrhage lasting for five hours, was the index of the commencement of her illness eight months before. Abundant and often fetid leucorrhœa had been present for many months, but no blood appeared at any time in the discharge, except on the single occasion which I have mentioned.

Lastly, with reference to the discharges in cancer cases. They differ much in different forms as well as in different stages of the disease. An increased mucous, or muco-purulent discharge, is by no means uncommon in the early stages of medullary cancer, dependent on the general congestion of the womb, which, as we have seen, accompanies the disease at its outset. This discharge is not in general offensive, but sometimes patients will complain of an offensive discharge as having been the first symptom of the disorder, and this in cases where it cannot be doubted but that no breach of surface at the time existed. In this, however, there is nothing remarkable; offensive leucorrhœa accompanies uterine congestion and uterine inflammation in many instances, or results in cases of menorrhagia, or of polypus, or of fibrous tumor, from the decomposition of blood which has been poured out; and our patients, at any rate, are not to be expected to discriminate between bad odors from one cause or from another. With the advance of the mischief the discharge becomes almost always unmistakably offensive, though the variations in this respect are even in the same case not a little remarkable. It has been seen that portions of the diseased structure not infrequently slough off, and are detached from time to time, leaving behind, when they are separated, a comparatively clean surface, on which for a time a sort of attempt at healthy granulation may be perceptible. While the tissues are dying and being renewed, the discharge from the cancer will generally be a dirty, highly offensive sanies; after they have been completely thrown off the secretion may be but scanty, puriform, and comparatively inoffensive; while in almost every case, supposing proper precaution to be taken by syringing the vagina, and by due attention to cleanliness to remove the secretion completely and frequently, the offensiveness of the discharge will depend in very great measure on the activity with which the processes of sloughing and separation of portions of the cancerous substance are going on. When the disease is in a comparatively indolent state, as it sometimes continues for months before the death of the patient, who sinks in that case under the cancerous cachexia rather than under the advance of the local mischief, the discharge is often neither very profuse nor very offensive. In the indolent state of the disease, too, the secretion has seldom anything of the purulent character which is observable when ulceration and its allied processes are going on actively, but is usually watery, sometimes blood-stained, at other

times comparatively transparent. In epithelial cancer, also, the discharge is generally serous, and often almost inodorous, it being rather a secretion from the surface than the result of any decomposition and destruction of tissue. This same absence of any marked offensive odor continues likewise very frequently even after ulceration and destruction of substance have commenced in an epithelial cancer, though, as its characters become merged, as they often do, in those of medullary cancer, the discharge almost always acquires a much worse smell than before. In cases approaching to cauliflower excrescence, where the patient dies of hemorrhage, and also in cases of the so-called corroding ulcer of the os, the discharge continues inoffensive even to the last. These, however, are exceptional cases, and in no way interfere with the correctness of the general rule, that offensive discharge is one of the symptoms of malignant disease scarcely ever absent in some part of its course.

One or two practical inferences may be drawn from what has been stated, which it will be worth while always to bear in mind. First of all, the presence or absence of offensive discharge must in no measure be allowed to influence us in deciding on the malignancy or non-malignancy of any disease of the womb. Mere irritation of the organ from inflammation or congestion may be associated with it, decomposition of blood within the sexual organs may occasion it, or the decay and disintegration of a fibrous tumor or polypus. On the other hand, the discharge from an epithelial cancer is often for a long time inoffensive, and sometimes continues so throughout, while in other cases the presence or absence of an offensive character in the secretion, may depend upon whether the disease is in an indolent or in an active state. Even in the latter case, if an examination be made just after the dead tissues have been thrown off, it may be found that no bad smell is given out by discharges which but a few weeks before were intolerably offensive.

It would, I apprehend, answer no really useful end were I to endeavor to group together those symptoms which we have hitherto examined, and out of them to form a general portraiture of uterine cancer. The degree in which each symptom is manifested, the order in which the symptoms succeed each other, the time during which they are associated, the increase of one and the diminished urgency of another, all vary so much in different instances that no general description could be applicable in all its details, and I therefore forbear from an attempt which might mislead, and could scarcely instruct you.

Hitherto, however, no mention has been made of the signs of general constitutional disorder which sooner or later manifest themselves in almost every case of cancer, whether of the womb or of other organs, and which add much to the patient's distress. The cancerous cachexia, which is absent only in some few instances of epithelial carcinoma where death takes place from pure loss of blood, is something more than the mere anæmia produced

by hemorrhage, or by the exhaustion that follows long-protracted suffering. "The fount of all the blood is touched corruptedly;" food does not nourish, the strength fails, the body wastes, the stomach refuses to perform its proper functions; nausea distresses the patient, or sickness wears her, and the red, raw, glazed, or aphthous tongue indicates but too clearly the state of the digestive mucous membrane, and explains the urgency of that thirst which drink cannot quench, which it is so often scarcely able even for a few moments to allay. The state of the bowels is frequently an additional source of trouble, constipation alternating with diarrhœa. The former condition is frequently induced in measure by the mechanical obstacle which the enlarged and hardened womb offers by its pressure on the rectum to the passage of the fæces, and is still further maintained by the lack of muscular power in the intestines themselves, which are no longer able by vigorous peristaltic movements to propel their contents. When once diarrhœa comes on, the same want of power allows it to continue till the intestinal canal is completely emptied, while to the same cause may be in a large measure attributed the flatulence which often distresses the patient, producing much abdominal pain, and not infrequently issuing in an attack of diarrhœa. The sleep is always disturbed and unrefreshing; opiates indeed may relieve the pain, but they often aggravate the other ailments; the patient feels too ill to sleep, or if she dozes, the parched mouth and burning throat awake her, or else the sense of utter prostration and exhaustion, and the sufferer returns to consciousness with the feeling that but a little more, and the sleep would have ended, as indeed it does not very rarely, in death. In this state I have on five occasions known convulsions to come on, which ended in coma, and in three of the cases the coma ended in death, which took place twice in twenty-four hours, and once at the end of eight days. These head symptoms, however, are not by any means indicative of actual disease of the brain, for two of the patients being examined after death, no trace of mischief was discoverable there; and two others having rallied from the convulsions, lived for many months, while the hemiplegia which in one instance had followed the fits disappeared by degrees, but completely. In a sixth case great impairment of sensibility of the left side occurred causelessly, and disappeared in the course of a few days, a month before the death of the patient, during whose illness no other sign of cerebral disturbance was observed. The cause of these cerebral symptoms is obscure. The only explanation of them with which I am acquainted is that suggested by M. Aran,[1] who regards them as dependent on hydronephrosis, and the consequent abolition of the function of the kidney. I do not know how far the recovery for a season of patients in whom these symptoms have occurred, and their subsequent death from the ordinary progress of carcinoma, may be fairly regarded as militating against this theory. In two instances of extreme

[1] *Op. cit.*, p. 968.

hydronephrosis, produced by the pressure of the cancerous womb on the uterus, no sign of head-disturbance preceded death; and in the two who died there is no account of remarkable hydronephrosis having been discovered at the post-mortem examination.

But these are exceptional cases, and death is not in general preceded by any marked cerebral symptoms. The powers of life by degrees wear out, the local mischief often remaining for weeks or months quite stationary, and when at last the patient dies, it may be difficult to say why death came just when it did, why, with disease so far advanced, it did not come sooner, or why, life having lasted so long, it should not have continued still for a few days or a few weeks longer?

In one case, indeed, the general poisoning of the blood gave rise to the symptoms of pyæmia which ushered in the patient's death, though, singularly enough, previous to her fatal illness the signs of the cancerous cachexia had been by no means extreme. She was fifty-six years old, the symptoms of uterine disease had existed for only four months, and the mischief was so almost exclusively limited to the uterine cavity, that a moment's hesitation had been felt as to whether the disease was really of a malignant character. At the time of her admission slight feverish symptoms were present, which at the end of a week became more intense, and were associated with pain in the upper extremities precisely like that of rheumatism. This pain continued, though it did not increase in severity, but the fever rapidly assumed a typhoid character, the pulse rose to 140 in the minute, the tongue became dry, and on the sixth day she died.

This case, indeed, stands alone in my experience, though there is a great difference in the intensity of the symptoms of cancerous cachexia and in the rapidity of their course, while no constant relation appears to exist between the amount of the local disease and the amount of constitutional disorder. When most rapid, however, the constitutional symptoms still nearly always continue of a passive kind; and even the peritoneal inflammation which has been referred to as a not infrequent cause of hypogastric pain, and as producing adhesions between the pelvic viscera, does not seem to have any tendency to assume an active character, and does not materially contribute to shorten the patient's life. The diarrhœa often has this tendency, sometimes assuming a dysenteric character, and being found after death associated with great congestion of the rectum and lower part of the large intestine, and great enlargement of the solitary glands. It is very unusual for great local pain to attend the last few days of the patient's life, and in the very few instances in which I have observed it, it was associated with the development of cancerous disease in the abdomen, and did not appear to be attributable to the affection of the womb.

Two deviations from the ordinary course of cancer must be noticed before we leave the subject of its symptoms. Reference has already been made to the occasional absence of one or other of those symptoms which are usually regarded as characteristic of

the disease. But there are also occasional instances in which not merely one customary symptom is absent, but in which all the symptoms are so little marked as to throw the nature of the disease completely into the shade. It is not very unusual for patients to apply for the cure of supposed menorrhagia, in whom examination ascertains the existence of far-advanced cancer of the womb; but the most remarkable case of the *latency of all its symptoms* which has come under my own notice is the following: A woman, aged forty-five, who was following the occupation of a cook, came to me at the Middlesex Hospital, complaining of constipation, and of some uneasiness in defecation, which she attributed to piles. She had no hemorrhage, and no uterine pain, and it was only on closely questioning her that she admitted the existence of slight leucorrhœa. There were no hemorrhoids, nor was there any disease about the rectum, but the uterus was large, less movable than natural in the pelvis, its anterior lip hard and nodulated, its posterior destroyed by ulceration. For more than three months she continued to come backwards and forwards to me, and during the whole of this time she retained her place, expressing great relief from simple aperient medicines which I had prescribed for her.[1]

I do not know her subsequent history, but the practical inference from cases such as these is, that we must take nothing for granted, that a very little warrants suspicion, and I may add, that we must not place implicit reliance on our patients' statements when they deny the existence of some symptom which is either known, or popularly believed to be of evil import. They earnestly desire its absence; they will not allow themselves to believe in the existence of what they so intensely dread.

The other variety of cancer is an *acute form of the disease*, which I believe to be very rare, but which runs its course with much febrile disturbance, and with symptoms of an active character such as may be taken by the superficial observer for those of inflammatory mischief. It is a form which I have seen only in young persons, and soon after delivery or miscarriage. In one instance, a woman who had miscarried at four months, and had had a single profuse attack of hemorrhage two months before she came under my notice, was received into the hospital in a state of profuse salivation, in consequence of mercury given her for the cure of alleged uterine inflammation. The disease, of which she soon died, was cancer in a state of far-advanced ulceration; but there had been so much febrile disturbance and so much abdominal pain as to throw an intelligent practitioner off his guard, and to lead him to neglect what might seem the very obvious duty of making a vaginal examination. Another case somewhat of the same kind I have also seen, in which the disease ran its course in three months and seventeen days; its commencement being reckoned from the date of the patient's delivery, previous to which she was not aware of any symptom of uterine disease. In this case the patient died in

[1] A case of the kind is related by Dr. Simpson, *op. cit.*, p. 190.

a state of coma which had succeeded to convulsions, and her state, even at the time of her admission, was one of very great urgency. She, however, had a hot skin, and a furred tongue, and a rapid pulse, with considerable abdominal pain, and I can readily conceive that at its outset these symptoms might, as in the other case, have led into error.

We have already seen that on the one hand the presence of a disposition to cancer does not interfere at all with a woman's fertility, and on the other, that the changes that succeed to childbirth seem to favor the advance of the disease. It now remains for us to look at the influence which cancerous disease of the womb exerts on the process of labor itself, when a woman so afflicted has the misfortune to become pregnant. The evidence of statistics bears out fully what one would anticipate to find, and shows that the rugged and thickened os uteri dilates slowly, painfully, and imperfectly; that it is often rent during the parturient efforts, and that formidable hemorrhage takes place, or dangerous inflammation succeeds; and that sometimes so insurmountable are the obstacles, that the child cannot pass at all, and the mother and her unborn babe either perish together during the parturient efforts, or that gestation is prolonged far beyond its ordinary term, and that death at length takes place without any decided effort having been made by the uterus to expel its contents.[1]

Table showing the Result of Seventy-five Cases of Cancer of the Neck of the Womb complicating Labor.

Authority.	Total Cases.	Died in or very soon after Labor.	Recovered from the effects of Labor.
[2] Puchelt, . . .	31	18	13
[3] Oldham, . . .	5	2	3
[4] Cormack, . . .	1	...	1
[5] Simpson, . . .	2	2	4
[6] Arnott, ...	6	...	2
[7] Scanzoni, . . .	4	4	...
[8] Dorrington, . .	1	1	...
[9] Kiwisch, . . .	4	4	...
[10] Menzies, . . .	20	10	10
[11] Spiegelberg, . .	1	...	1
	75	41	34

[1] As in Dr. Menzies' very remarkable case recorded in *Glasgow Medical Journal*, vol. i, p 129, July, 1853.

[2] *De Tumoribus in Pelvi*, &c., 8vo., 1840, cap. iii and iv.

[3] *London Journal of Medicine*, 1851, p. 204, and *Guy's Hospital Reports*, 2d series, vol. vii, p. 427.

[4] *London Journal of Medicine*, 1851, p. 212.

[5] *Op. cit.*, p. 648.

[6] *Med. Chir. Trans.*, vol. xxxi, p. 37.

[7] *Lehrbuch der Geburtshülfe*, vol. ii, 258.

[8] *Prov. Med. Journal*, Oct. 7, 14, 21, 1843.

[9] *Op. cit.*, vol. i, p. 540.

[10] Menzies, *loc. cit.* In Menzies' table of 27 cases are included those of Denman, contained in Puchelt's table, and some cases of Oldham and Simpson, which are separately referred to by me. These being omitted, 20 cases remain.

[11] *Monatschrift f. Geburtsk.*, Feb. 1858, vol. xi, p. 110.

In Seventy-two Cases the Fate of the Children is mentioned.

Authority.	Total Cases.	Dead.	Born alive.
Puchelt, ...	30	19	11
Oldham, ...	5	4	1
Cormack, ...	1	...	1
Simpson, ...	6	2	4
Arnott, ...	2	2 twins	1
Scanzoni, ...	4	4	...
Dorrington, . . .	1	1	...
Kiwisch, ...	4	4	...
Menzies, ...	18	11	7
Spiegelberg, . . .	1	...	1
	72	47	26

Hereafter we must return to the subject, in order to inquire into the means which will give us the greatest chance of carrying the mother and her child safely through these dangers. For the present, it is enough to have adverted to them, and to have shown their nature and extent.

In the foregoing lectures I have occasionally noticed the main distinctions between innocent and malignant diseases of the womb, and it may at first sight appear needless to enter into details concerning the *diagnosis* of uterine cancer, since its characteristics are so well-marked as seldom to leave room for doubt, or to allow the possibility of error, except to the grossly ignorant, or the wilfully careless.

But though this is usually the case, yet it does sometimes happen that error is fallen into by persons who can neither be charged with want of knowledge, nor with want of care, and such error most frequently takes the form of regarding an innocent disease as one of malignant character, and thus entails much needless anxiety on the patient and her friends. At a time when induration of the cervix uteri was commonly supposed to be due to scirrhous deposit, this mistake was much more frequently committed than it is at the present day; but even now the practical error survives, as is its wont, the pathological blunder in which it originated.

Hence it becomes by no means superfluous to lay it down as a rule, so far as I know without any exception, that long-standing induration and hypertrophy of the cervix uteri, with or without superficial abrasion, but unaccompanied by thickening of the roof of the vagina and by diminished mobility of the uterus, are due to chronic inflammation, not to cancerous deposit.

So great is the importance of distinguishing between these two conditions, that it may be worth while, even at the risk of being tedious, to contrast them with each other:

In Inflammatory Induration.	In Uterine Cancer.
The history of the patient's ailments generally goes back for a period of several years, and her symptoms have come on gradually.	The average duration of cancer does not exceed eighteen months, and the first symptoms are generally sudden in their occurrence.
A tedious labor, or an imperfect convalescence from labor or miscarriage, is very frequently referred to as the commencement of the patient's ailments.	Though cancer occasionally develops itself out of labor or miscarriage, yet such cases are so rapid in their course as to render mistake impossible.
Pain is a more constant and an earlier symptom than hemorrhage. Menstruation is often scanty; hemorrhage, if it occurs, observes a monthly or sometimes a fortnightly type, is very seldom persistent, and is almost always attended by much suffering.	Hemorrhage is an earlier, and in the first stages usually a more urgent symptom than pain. It is causeless, sudden, often persistent, not governed by the menstrual type, and the season of flooding is generally one of mitigated suffering.
The cervix uteri is always tender, often exquisitely so; the mobility of the uterus is but little modified; the enlarged lobules of its lips radiate from the orifice.	The cancerous cervix is often but little sensitive; the mobility of the uterus is early interfered with; the enlarged lobules of its lips are irregular in their position, and not divided by fissures radiating from the orifice.
Ulceration of the os uteri is either a simple abrasion of the epithelium, or a red surface of a finely granular, velvety texture, sometimes raised a little above the level of the adjacent part, never depressed beneath it. The margins of the ulcerations are always smooth and regular, and the discharge is sometimes purulent, oftener glairy, occasionally a little blood-streaked, hardly ever offensive, and furnished more from the interior of the uterus than from the ulcerated surface.	Cancerous ulceration is never a simple abrasion, but either a sprouting, coarsely granular outgrowth with everted edges, or an excavated ulcer with a dark surface, and jagged margins; often partially covered by a dark-grayish slough. The discharge, which is furnished from the diseased surface rather than from within the uterus, is either thick, yellow, purulent, highly offensive, or thin, serous, often blood-stained, never transparent and albuminous.

Attention to these distinctions will, I believe, suffice almost invariably to prevent the confounding of mere chronic induration and hypertrophy of the uterus with malignant disease. I have however, met with two instances in which the diagnosis between the two conditions was extremely difficult, and in which time alone removed suspicions that had appeared but too well founded. Both of these cases presented considerable resemblance to each other; and the symptoms, which came on in both some months after delivery, were probably due in reality to a condition of imperfect involution of the uterus. In both instances profuse hemorrhage burst forth suddenly, endangering the patient's life, and being in one case restrained only by the use of the plug. The uterus was in both cases greatly enlarged, its lips were swollen and everted and its orifice was open, so that its condition closely resembled that of the womb affected by fungoid cancer; while the serous discharge which flowed in the intervals between the attacks of hemorrhage gave out that offensive odor commonly regarded as almost pathognomonic of malignant disease. The nature of the case, too, was, with one of the patients, rendered the more doubtful by the circumstance that she, being turned forty years of age, having given birth to her last child eighteen months before, and having weaned it seven months, had yet had no return of

menstruation, while her health was failing, and she had suffered much from dull lumbar pains. In this case, which I had frequent opportunities of watching, the hemorrhage recurred at irregular intervals for between two and three months, when it ceased, leaving the patient completely exhausted. Slowly she regained her strength; and at the end of another three months the menses returned naturally. After having twice recurred at their proper periods, the menses once more disappeared; their cessation, however, was accompanied by the signs, not of disease, but of pregnancy, which terminated in the birth of a living child at the seventh month of utero-gestation. Very serious hemorrhage attended the labor, but convalescence was uninterrupted, and no sign of cancerous or other uterine disease has reappeared, though the patient has now entered her forty-ninth year, and the menses are becoming irregular in their return, preparatory no doubt to their final cessation.

In this instance I was not alone in the unfavorable opinion which I entertained of the patient's prospects; but looking back upon the case, now that time has corrected my judgment, I can recall to mind that there was a uniformity in the enlargement of the uterine lips, and in the degree of their hardness, which is not usual in fungoid cancer, and that there was an absence of that nodulated character which is generally obvious in the uterus affected by malignant disease.

Between fibrous tumors of the uterus and malignant disease of the organ, a vaginal examination usually enables us readily to discriminate. Still it must not be forgotten that in those comparatively rare cases in which the body of the uterus is affected by cancer while its orifice is free from disease, we may find a tumor perceptible in the abdomen, coupled with marked increase in the dimensions of the uterine cavity, and sometimes with irregular thickening in the substance of one or other uterine wall, closely resembling that produced by the presence of a fibrous tumor, while sometimes a distinct outgrowth is perceptible through the os. Our diagnosis, however, will usually be directed aright, by the health being more impaired, and the local suffering more persistent than is usual in a case of fibrous tumor; by the loss of mobility of the uterus being more considerable than even its increased size would account for; and by the extreme vagueness in the outline of any tumor proceeding from the uterine walls.

Reference has already been made[1] to the possibility of mistaking a fibrous tumor just passing through the os uteri for cancerous disease of the organ; and I have known the disintegrated sloughing surface of a pedunculated fibrous tumor or polypus hanging down into the vagina to be taken for advanced ulcerated carcinoma of the neck of the womb. Such an error, however, ought not to be committed, for on a careful examination, the absence of the os

[1] See p. 237.

uteri from the lower end of the tumor, its oval or pyriform shape, its smooth and uniform surface at those parts which are not in a state of ulceration, and the possibility in almost every instance of reaching one or other lip of the os, if the finger is carried high up along the tumor, will reveal the real nature of the case.

One point only still remains to be noticed in order to complete our history of cancer of the womb, and that refers to its *duration*, which seems, indeed, to be shorter instead of longer than that of many other forms of the same disease.

In twenty-two instances I was able to fix accurately the duration of uterine cancer, and found that it was—

Under 4 months, ...	in 1 case
" 5 "	" 3 "
" 6 "	" 1 "
" 9 "	" 1 "
" 12 "	" 3 "
Exactly 1 year, ...	" 2 "
13 months, ...	" 1 "
Between 1 and 2 years, . . .	" 5 "
" 2 — 2½ " . . .	" 2 "
" 2½ — 3 " . . .	" 1 "
Exactly 3¼ " . . .	" 1 "
Said to be 5, but doubtful, . .	" 1 "
	22

Average duration, 17.3 months.

The average of thirty-nine cases, as given by Lebert,[1] is sixteen months and a fraction, a result very near approaching to my own, and less than the average duration of all forms of cancer, which is stated by the same authority at eighteen months, the progress of the disease being slower in the mammary gland, the testis in the male, the eye, the bones, the lymphatics, and the intestinal canal; though even in the breast and the testis, in which its advance is most tardy, the average duration of the disease does not exceed three years and a half.[2]

In the next Lecture we shall pass to the investigation—I wish we could do it with brighter prospects—of the remedial means, whether medical or surgical, by which we may hope to retard the course, to alleviate the sufferings of cancer, sometimes to obtain for the patient a brief respite, now and then, perhaps, to accomplish her cure.

[1] *Op. cit.*, p. 270.

[2] Ibid., p. 122.

LECTURE XXI.

MALIGNANT OR CANCEROUS DISEASES OF THE UTERUS.

TREATMENT; various opinions entertained at different times concerning it.
PALLIATIVE TREATMENT; of the hemorrhages, of the pain, of the discharges, management of the general health, and of symptoms of cancerous cachexia. Pregnancy and labor complicated with cancer; question of induction of premature labor; management of the labor itself.
CURATIVE TREATMENT; extirpation of the whole uterus; results of the operation, and reasons for rejecting it. Excision of the neck of the womb; errors which brought it into discredit; cases suited for it; modes of performing the operation; dangers; that of hemorrhage the chief. Comparative advantages of ligature and excision considered.
Other means supposed to be remedial; employment of cold, of caustics, and of the actual cautery; observations on each.

VERY numerous have been the fluctuations of opinion with reference to the management of cancer of the womb. When knowledge concerning it was most imperfect, alleged remedies abounded, and various medicines had the reputation of eliminating the cancer poison from the system, and, acting thus through the medium of the constitution, of removing the local disease. Next came a period of adventurous surgery, of attempts to root out the whole evil, over which it became evident that internal means had but little influence. Soon, however, practitioners were affrighted at the difficulties and the dangers of such operations, and then resorted to a combination of local and general treatment, and believing that between cancer and inflammatory induration there was some close bond of affinity, they endeavored by depletion, and by other means calculated to retard the changes which inflammation produces, to keep at bay the advances of cancer. An attempt was made, too, to vindicate to surgery its share in the removal of this disease, even when medicine was of no avail, and for a time the amputation of the scirrhous neck of the womb was vaunted as a mode of almost infallibly arresting the otherwise inevitable danger. Time and increased knowledge, however, have led us to unlearn much in which our predecessors had an unfaltering faith. We have renounced all credence in the specific remedies once believed in; we have abandoned, as too hazardous to be warrantable, the extirpation of the whole uterus; we have found out that there is no relation between inflammation and cancer; that antiphlogistic means which remove the effects of the former, have yet no power to control the progress of the latter; and, moreover, that the supposed triumphs of surgery in cutting short the disease, by removing that small part of the organ whence, if let alone, it might have spread to surrounding tissues and neighboring viscera, were, for the most part, purely imaginary; and the trophies once displayed in our museums are now generally put

out of sight, as the mementoes of a pathological blunder and a needless operation.

It seems, then, that in the greater number of instances, our duty, in the *treatment of uterine cancer*, is the very humble one of mitigating sufferings which we cannot remove; of depriving death of some of its terrors, though we may feel ourselves powerless to delay its steps. Carefully to study, religiously to carry out this duty, calls for much care, for much and most untiring patience. But there are some few cases concerning which we must admit the possibility of a better issue being attainable, and we shall advance all the more steadily in our quest of means of cure, now that we have learnt with greater certainty than before to distinguish the different varieties of the disease; to know the cases in which recovery may be possible, from those in which we shall assuredly err if we aim to do more than palliate the more urgent symptoms.

I propose, therefore, first to pass in review the different means by which we can minister present relief to the patient laboring under cancer of the womb; and then to consider the exceptional cases in which we may attempt something more, and the merits of the various proceedings by which a radical cure of the disease has been attempted, has sometimes even been achieved.

In cases of cancer generally, our attention is divided between the relief of the local symptoms, and the maintenance, as far as possible, of the general health. I know of no means by which the progress of cancer can be arrested in its first stage, and the disease kept stationary; a source, indeed, of constant apprehension, but the occasion of little present discomfort, and of no immediate danger. Almost all the vegetable, almost all the mineral poisons have been tried, extolled, and rejected in turn; tonics have been administered, and again the patient has been placed under the so-called hunger cure—that is to say, her food has been reduced to the smallest quantity on which life can be maintained; and this with the result which the empirical trial of remedies almost always merits, almost always attains.

The *hemorrhage* is usually the first symptom which so excites the patient's alarm as to induce her to seek for medical aid. But unfortunately, ere then the disease has often made considerable advances, and its nature is already but too evident. The hemorrhage at the outset of the disease being, as already explained, due to congestion of the womb, our first endeavor must be by every means to abate it, and thus to prevent, if possible, the return of the bleeding. It is self-evident, that with this object in view, every direct excitement of the sexual organs must be injurious, and hence there can be no exception to the rule which interdicts marital intercourse whenever there is the least suspicion of cancerous disease. The state of the bowels is the next point to attend to; and they must be kept freely open, if possible, by mild saline aperients, which unload the hemorrhoidal vessels, as well as prevent the accumulation of fæces in the intestinal canal. A mild, unstimulating diet is equally important, and I have no doubt but that in

the early stage of cancer an opposite plan is injurious to the patient's general health, and indirectly accelerates the advance of the disease. When to these precautions are added the avoidance of all active exertion, and the most absolute rest at the return of each menstrual period, I fear there is little more within our power. The local employment of depletion, which has been recommended in the early stages of cancer, is very rarely admissible, and I am not disposed to advise that the blood should ever be drawn from the uterus itself, but rather from the hypogastrium or the groin, since I have known very serious difficulty occur in arresting the bleeding from leeches applied to the neck of the womb in these cases.

At a later period of the disease the hemorrhage may be so profuse as to call for direct restraint, and the necessity for immediately checking it is of course urgent in proportion to the degree of anæmia which already exists. The gallic acid is of all astringents that which has least often failed me; but in order to obtain decided effects from it, it should be given in doses of six or eight grains every four hours. The infusion of matico, as a local application, is also of much use in some of these cases; but the management of the injection can never be safely intrusted to the patient, who either employs it ineffectually, or else causes herself much suffering by striking the neck of the womb in her endeavors to introduce the instrument far enough into the vagina. There are obvious difficulties in the way of plugging the vagina in cases of ulcerated carcinoma; and, indeed, the mode in which the profuse bleedings usually take place, by sudden outbursts of hemorrhage, followed by a long pause, is that against which such a proceeding is least of all calculated to guard. In some cases of soft medullary cancer, or of epithelial cancer, when the continuance of hemorrhage becomes a very serious source of danger to the patient, we may break down the tissue with the finger, and then inject into the midst of it the tincture of the sesquichloride of iron. The bleeding vessels are thus destroyed, and the coagulation of the extravasated blood by the chemical agent prevents the occurrence of any further hemorrhage, while the whole mass which has been thus treated sloughs away in the course of a few days, leaving behind a healthier surface, or one at any rate less disposed to bleed. This proceeding, which was to the best of my belief first recommended by Kiwisch,[1] is not accompanied by much pain, nor has it, in my experience, ever been followed by serious constitutional disturbance, while the improvement which for a time succeeds the checking of the previous drain upon the system is often very remarkable.[2] Kiwisch

[1] *Op. cit.*, vol. i, p. 547.

[2] In the *Lancet* for December 29, 1855, is a very remarkable case related by Dr. Boulton, of Horncastle, in which the breaking down of the tissue of a large epithelial cancer of the cervix uteri, and the arrest of the subsequent bleeding by caustics, of which the muriated tincture of iron appears to have answered best, had been persevered in for five years, not only with great improvement in the patient's condition, but, as would seem, with the final result of completely destroying the disease, of which for sixteen months previous to his communication the os

also speaks of the employment of the actual cautery as a very efficacious means of restraining bleeding, in cases where the surface is of too firm a texture to be broken down. I have not tried the actual cautery specially for this purpose, though I believe that in some cases of uterine cancer I have obtained by it much temporary improvement, both in the general health of the patient and in the condition of the ulcerated surface. Of this, however, more hereafter.

The *pain* is, of all the symptoms, that from which the patient most earnestly prays for relief, while, unfortunately, we are often but little able to afford it. There is a permanent pain, or at least a permanent sense of discomfort, which most women experience, and besides, there are occasional paroxysms of severe suffering from which some are fortunately exempt. The backache, the pain in micturition, and the distress in defecation, are usually to be relieved rather by attention to the functions of the bladder, and the state of the bowels, than by direct anodynes. The Vichy water as a drink, the extract and decoction of uva ursi, with small doses of liquor potassa and tincture of henbane, often give much relief to the irritable bladder which troubles the patient in the early stages of cancer, while, at a later period, when organic mischief has commenced there, and the urine is loaded with phosphates, small doses of hydrochloric acid, with the extract and decoction of pareira, will in their turn be of service. The establishing a habit of regular action of the bowels will save the patient from many of the distressing bearing down sensations from which she had previously suffered. Mild laxatives, such as the confection of senna, or very small doses of castor oil, are generally best for this purpose; enemata are not in general expedient, for their administration is often very painful, owing to the presence of hemorrhoids, while the pressure of the distended rectum against the womb sometimes brings on very severe suffering. Plasters of belladonna, or opium, applied to the back or above the pubes, sometimes relieve the permanent pain in those situations, while any casual aggravation of it is often mitigated by the local application of chloroform, or of cotton-wool soaked in a liniment of equal parts of chloroform and oil, and covered over with oiled silk to prevent evaporation.

The longer the patient can dispense with the habitual employment of anodynes, the better is it for her general health. In time, however, they are sure to become necessary, and the need for them is usually first experienced at night, for almost always at that time the pain becomes more severe than it had been during the day. Whether employed at night, however, or given more frequently, it is always desirable to begin with the mildest form of narcotic, and to pass only by degrees, and as each in turn ceases to be effi-

uteri had presented no trace. In a subsequent report, dated October, 1857, Mr. Boulton adds, that after the lapse of three years from the last operation the patient continued perfectly well; that for twelve months all discharge had ceased, and that the state of the os and cervix uteri was perfectly normal.

cacious, to those which are more potent, and to the preparations of opium. I usually begin with camphor and henbane in the form of pill, giving five grains of each at bedtime, and find in most cases that henbane is a more certain and more efficient medicine than hemlock. If the anodyne begins to lose its power, it is not always necessary at once to increase its strength, but the same dose will often continue to act if it be combined with a draught containing ether, or some other diffusible stimulant. Twenty minims of the compound spirits of ether, and fifteen of the chloric ether, will often, when added to the anodyne, lull the pain which had previously been importunate, or procure the rest which the patient had before been unable to obtain. The same fact holds good through the whole course of the disease, even at a time when opiates in large and frequently repeated doses have become absolutely necessary. After henbane, I generally make trial of the Indian hemp, for though it is an uncertain medicine, and one the effect of which seems to be much modified by the idiosyncrasies of the patient, it does not in general either constipate or produce headache, or disorder the digestion to so great an extent as opium. Chlorodyne has also many of these advantages, and though perhaps more apt to constipate than the Indian hemp alone, its action is more certain, and its influence less speedily worn out. Belladonna does not constipate, but it occasions headache, and if given in doses sufficiently large to control the pain of cancer, it is sometimes followed by an alarming degree of depression. We come then to opium and its different preparations, and of all of these the tincture is generally borne for the longest time, and with the greatest relief. There are peculiarities in different cases, however, which lead us sometimes to prefer one form and sometimes another of this remedy. The black drop, I think, causes on the whole less sickness than the other preparations of opium, morphia not excepted, while, in spite of the many recommendations of the latter medicine, we are sometimes compelled to abstain from giving it, in consequence of the extent to which it aggravates the irritability of the skin, and the disposition to urticaria, which are not very unusual attendants upon uterine cancer. I have not found any such advantages from the employment of opiate suppositories or of opiate enemata as to induce me to prefer that mode of giving opium to its administration by the mouth; and I may further add, that the local employment of the vapor of chloroform by means of Dr. Hardy's very ingenious contrivance, has hardly ever proved sufficiently powerful to give much relief to the patient. Another local anæsthetic, which, however, has disappointed those who, like myself, have recently made trial of its efficacy, is furnished by directing a stream of carbonic acid gas against the ulcerated surface. This agent has been used at various times within the past thirty years for the purpose of allaying uterine pain, but the isolated instances of its employment attracted little notice till attention was recently directed to the subject by Professor Simp-

son, of Edinburgh.[1] He speaks of its results as uncertain; since in some cases it completely failed, while in others the success that followed its use was striking and immediate; but his paper contains few definite details with reference to its employment. Some trials have since been made of it in Paris,[2] the action of the remedy still appearing to be uncertain, and its effect now and then to be that of aggravating instead of mitigating suffering, while in a few instances headache, drowsiness, and depression followed its employment, though not to a serious degree, and subsiding spontaneously in a few hours after the discontinuance of its use. According to M. Bernard, who has written most fully on the subject, the unpleasant symptoms were less frequently produced, and in a slighter degree, in cases of uterine carcinoma, than in those in which the vapor was applied for the mitigation of pain consequent on congestion or inflammation of the womb. In some instances the continued employment of the gas for some ten minutes twice a day during several weeks was followed not only by a great mitigation of suffering, but also by a great improvement in the state of the womb itself and by a partial cicatrization of the ulcer. In other cases, however, the local condition remained unchanged, though for a time the health improved in proportion as the previously severe pains were lessened.

Nothing can be simpler than the mode of applying the gas. In a glass vessel capable of containing a pint, and such as is used for the disengagement of gases, either carbonate of soda and tartaric acid, or chalk and sulphuric or muriatic acid, or carbonate of soda and bisulphate of potass may be placed, and water being added in quantity sufficient to cover them, the gas may be conducted through an elastic tube into the vagina, while a cloth applied to the external parts will prevent its too rapid escape. M. Bernard, who uses 25 grammes of bicarbonate of soda, and 20 grammes of bisulphate of potass, or about ʒvi of the former to ʒv of the latter, estimates the quantity of gas disengaged from these materials at about four pints, which is given out in a period of from ten to fifteen minutes.[3]

My own experience of the use of the carbonic acid gas in cases of cancer is confined to ten cases, in three of which temporary relief followed its employment, while in two the patient's sufferings seemed rather increased by it, and it was therefore discontinued. In the other five instances the relief was not striking—certainly was not greater than a comparatively small dose of an anodyne would procure; nor was the condition of the patient otherwise more improved than might be expected from the quiet

[1] *Obstetric Works*, vol. ii, p. 769.

[2] See the papers of M. Follin, in *Arch. Gén. de Médecine*, Nov., 1856, p. 608, and M. Bernard, ibid., Nov., 1857, p. 529.

[3] One case of death from the injection of carbonic acid gas into the cavity of the uterus is recorded by Scanzoni at p. 131 of vol. iii of his *Beiträge zur Geburtskunde und Gynäkologie*, 8vo, Würzburg, 1858. The case, however, was not one of cancer, and the whole circumstances attendant upon it, are of so exceptional a kind that no inference can be drawn from them beyond the proof which they afford of the possible death of a person from the use of this agent.

and the comfort of an hospital, though on the other hand, no inconveniences due to the poisonous influence of the gas were produced by its employment.

The idea of employing the inhalation of chloroform to relieve the violent paroxysms of uterine pain, naturally suggests itself to our minds. It is not, however, of as much service practically as might have been anticipated. Sometimes the pain is of such intensity that chloroform scarcely mitigates it; not infrequently sickness and vomiting come on before the patient is fully under its influence; while in a large number of cases so much depression follows its use, and such long-continued irritability of the stomach, that the patient herself is unwilling to purchase at so dear a rate a very short, and sometimes very imperfect, immunity from suffering. Still it is one of the means which we may try, and in some few cases it is well borne, and gives much temporary relief.

The *discharges* which occur in the course of uterine cancer call for medical interference, either to restrain their excess, or to correct the offensive odor that attends them. In the absence of these indications, no interference is desirable beyond such as mere attention to cleanliness dictates, and for which tepid water is preferable to any kind of medicated injection. Direct astringents, such as the matico or tannin, or the decoction of oak bark, are useful in restraining the profuse serous discharges which occur in some cases of epithelial cancer, and are, I think, generally preferable for this purpose to lotions of lead, or zinc, or alum, which more frequently produce pain, while they are of less efficacy in checking the superabundant secretion. Sometimes the discharge, though of a mucous or muco-purulent character, is extremely profuse, and this is often diminished, and the condition of the ulcerated surface secreting it is improved by a very weak acid lotion, such as ʒj of dilute nitric acid to Oj of water; while more decided astringents will either fail altogether of the intended effect, or will produce an increase of pain. Sometimes, however, an abundant secretion from an irritable ulcerated surface is checked, and the sensibility of the part diminished, by the use of an injection of ʒj of sulphate of iron and ʒiij of extract of conium to a pint of water. Now and then the extreme sensitiveness of the ulcerated surface is diminished by a lotion of ʒss of opium to a pint of lead-wash, but as a general rule, the local application of anodynes to the diseased surface is by no means efficacious; and much more relief is afforded by agents of greater power, and which tend directly to alter the state of the part. In this way great relief is sometimes given by strong solutions of caustic, which, at the same time, are a most powerful means of destroying the horribly offensive odor that attends upon the sloughing and detachment of portions of cancerous outgrowth. A solution of ℈j to ʒss of nitrate of silver in ʒj of water injected immediately into the diseased tissue, has the effect both of destroying the bad odor, and also of hastening the separation of the slough. The employment of this daily for one or two days generally suffices,

but at the same time a weak solution of chloride of lime, such as would be formed by ℥ij of the solution to Oj of water, or the same quantity of Condy's fluid, may be used several times a day with the effect both of diminishing the fœtor, and of improving the condition of the ulcerated surface. In far-advanced carcinoma these remedies may cease either to be useful or to be admissible, but then the creasote lotion, made with ℥j of creasote to Oj of some mucilaginous fluid, will have a remarkable influence in removing the offensive smell which adds so much to the distress of the patient and of those about her. When the bladder or rectum has been injured by the advance of the disease, we are unfortunately reduced to mere ablution, and the use of lotions of tepid water. When this accident does not happen, it fortunately occurs, as has already been mentioned, that the disease of the womb often remains stationary for months together, and that the patient is spared at the close of life many of the painful local symptoms which distressed her during the earlier period of her disease.

And this brings me, last of all, to consider the management of the *cancerous cachexia;* of those symptoms of general constitutional disorder, which, springing from an irremediable cause, are sure at length to baffle our skill. Most, and the most distressing, of the patient's symptoms, are referrible to the state of her digestive functions. She not only loses strength with the loss of blood, but digestion itself becomes generally impaired. In some cases, indeed, as in those of epithelial cancer, in which the most prominent symptoms are those of mere anæmia, iron is often well borne, and is then of much service. I usually employ the ammonio-citrate of iron in five-grain doses, three times a day, giving it in some effervescing medicine, such as the citrate of ammonia. The stronger chalybeate preparations, or large doses of the milder, often disagree, producing headache and feverishness. The failing appetite is sometimes for a time restored by the preparations of bark; but rather by the infusion or by small doses of the liquor cinchonæ in combination with acids, than by quinine, which in many instances is not borne. A combination that often suits is the nitro-muriatic acid in the infusion of cloves or of orange-peel; while throughout the whole treatment of the disease, our remedies must be not only gentle in kind, but must be given in small doses.

In most cases the stomach after a time grows irritable, and the tongue becomes raw and red, and aphthous. The irritability of the stomach is relieved by all food and drink being taken cold, by sucking small morsels of ice, by very small quantities of effervescing drinks, or of effervescing wines, such as Champagne or the sparkling Moselle. Sometimes, too, a mustard poultice or a slight vesication over the epigastrium will give relief, or even the application of a piece of lint soaked in the acetum opii. The hydrocyanic acid may be tried, and sometimes it gives relief, but its benefits are usually more marked when combined with ether than when given alone. The sense of sickness and faintness, unaccompanied by actual vomiting, which often becomes very distressing

as the disease advances, is in many instances relieved by sal volatile, in doses of forty to sixty drops, or by the compound tincture of ammonia.[1]

The soreness of the mouth, however, sometimes precludes the administration of stimulants, and even renders the taking food a source of extreme suffering. This state is often much relieved by the chlorate of potash, of which a quarter to half an ounce may be taken in the course of the day, in a pint of barley-water flavored with a little orange or lemon peel; but the unpleasant soapy taste which it leaves behind often disgusts the patient, and compels us to discontinue its use. In some of these cases the soreness of the mouth and the dry burning sensation in the throat are relieved by a spermaceti draught,[2] which also furnishes a convenient vehicle for opiate preparations in cases where diarrhœa is present. The diarrhœa is usually a temporary symptom only, and yields for the most part to aromatics and opiates tolerably readily, though when it occurs at a very advanced stage of the disease, and when the vital powers are much weakened, it sometimes carries off the patient. The disposition to constipation is a much more frequent source of distress; and it is of great moment not to allow the bowels to remain many days without being acted on. From neglect of this precaution, I once knew constipation to continue for eighteen days, when the patient died with an enormously distended abdomen, and ill-marked symptoms of peritonitis. There was no mechanical obstacle to the passage of the fæces, but they had been allowed to accumulate till the feeble muscular power of the intestines was insufficient to propel their contents; medicine irritated the stomach, and caused vomiting, without producing any action of the bowels, and peritoneal inflammation at length came on, just as it does in a case of strangulation of the intestines.

I know no other ordinary incident in the course of uterine cancer which calls for special notice now; but I would have you bear in mind that when there has long been no hope of cure, it is yet often within our power to minister very largely indeed to the comfort of the patient, to soothe distress, and mitigate suffering which otherwise would be utterly intolerable.

Reference was made in the last Lecture to the dangers which attend on pregnancy and *labor* when associated *with cancerous disease of the neck of the womb.* In not a few instances of this complication, abortion or premature labor occurs, owing to the disease not allowing of those changes which with advancing pregnancy ought to take place in the lower segment of the uterus. In such circumstances, greater suffering, and more considerable hemorrhage than ordinary, usually attend the miscarriage. I have

[1] See Formula No. 9, p. 75.

[2] (No. 11.)

℞. Cetacei,
Pulveris Tragacanthæ, āā . . . ℈j
Syrupi Papaveris albi, ... ʒj
Aquæ destillatæ, ... ʒxi.—M. f. Haustus.

indeed known the loss of blood to be so considerable as to occasion the patient's death in a few days; while though she should survive this danger, and the subsequent risk of peritoneal inflammation, the cancerous disease generally advances more rapidly than before. Still the dangers which attend upon the miscarriage are not to be put in comparison with those that accompany labor at or near the full period of pregnancy. In some instances labor pains have come on, but the os uteri not yielding, the contractions of the organ have again subsided, and the patient has at length died painfully, after gestation protracted for months beyond the full period. More commonly, either the womb gives way during the labor, or the violence inflicted on it during the passage of the fœtus or its instrumental extraction, proves immediately or speedily fatal; and on this account it is laid down as a general rule, that abortion or premature labor should be induced in cases of this description. The rule is doubtless a sound one, though something of its applicability must depend on the extent of the disease, and the stage of pregnancy at the time of the patient coming under our observation. If the mischief should appear to be already so far advanced as to preclude any reasonable expectation of life being prolonged by medical or surgical treatment, while at the same time there does not seem to be any insuperable obstacle to the passage of the child, it would be the better plan to allow pregnancy to go on without interruption; inasmuch as while the life of the child might be thereby preserved, the mother herself would be more likely to retain comparatively good health during the remainder of gestation, and the disease to make less rapid progress than during an equal space of time after the womb had been emptied of its contents. In some instances, too, the disease is found to be so extensive as to offer an apparently insurmountable obstacle to the rupture of the membranes, or to any other mode of bringing on miscarriage, and here the great immediate peril of interference must be allowed to counterbalance the remoter risks of delay.

When labor actually comes on, it is often the case that free incisions into the os uteri and the cervical canal are the only means by which such a dilatation of the passages can be obtained as will allow of the birth of the child. Still it is important not to be premature even in these cases in resorting to operative interference. I remember, years ago, when a student in Paris, a patient was received into the Clinique des Accouchemens in an advanced stage of pregnancy, and suffering at the same time from extensive cancerous disease of the womb. Professor Dubois mentioned her case to the class, and spoke with considerable certainty of the necessity for incising the neck of the womb when labor should come on. Contrary to all expectation, however, the os uteri dilated readily to admit of the passage of the child, and the labor was but of a few hours' duration. That which happened in this case, I myself observed in another instance, where the comparatively small part of the lower segment of the womb which was not implicated in

the disease stretched beyond what might have been supposed possible, and in spite of the unyielding condition of the bulk of the cervix, thus made room for the passage of the child. But so soon as labor has advanced far enough for us to be really satisfied of the necessity for interference, and to determine the direction in which incisions should be made, and the extent to which they should be carried, any further delay would add to the patient's danger, without any corresponding advantage.

The question has been raised, whether in cases where the disease is very extensive, and the impediments to the passage of the child, or to the employment of instruments for its extraction, very great, it might not be less hazardous to remove the child by the Cæsarean operation? Dr. Oldham,[1] however, is, to the best of my knowledge, the only person who has carried out the idea in practice; and the favorable result of his case, as far as the issue of the labor was concerned, proves the wisdom of the choice which he made. Desperate, however, must be the state of a patient, when of two alternatives the Cæsarean section is the less hazardous.

And now, having considered the indications which, in the great majority of cases of uterine cancer, we may have to fulfil, and the best mode of accomplishing them, we come, in conclusion, to the examination of different proceedings that have been recommended either for the extirpation of the diseased organ, or for the removal of the diseased portion of it, or for retarding by various local measures the rapid progress of the evil.

First among these proceedings we must consider the *removal of the whole uterus*, though in spite of one or two temporary successes which have followed its performance, the unanimous voice of the profession has pronounced it to be overbold, and has rejected it from among the legitimate operations of surgery.

The only instance with which I am acquainted of permanent recovery after the complete extirpation of the cancerous uterus, is that in which the elder Langenbeck removed the long-procident organ from a woman, who lived free from disease for twenty-six years afterwards.[2] In the first place, however, it is by no means certain that the induration and ulceration were due to anything else than the irritation of the organ from long exposure to external injury; and even though it were, you will yet remember that the sensibilities of the womb become so lessened by long residence out of the pelvis, that no inference can be drawn as to the danger of operations on the organ when *in situ* from the results obtained when it has been long procident. So favorable a conjuncture as that met with in Langenbeck's case, and which no doubt much facilitated the difficult task of shelling out the organ from its peri-

[1] *Guy's Hospital Reports*, 1851, second series, vol. xi, p. 426.

[2] The particulars of which are detailed, and drawings showing the appearances after death are given, together with much important information concerning the operation, by the present Professor Langenbeck, in his inaugural dissertation *De totius uteri extirpatione*, 4to., Gottingæ, 1842.

toneal investment, must be of extreme rarity, and few, indeed, are the instances in which it has existed.[1]

Attempts have been made artificially to produce a state of prolapse of the womb, and thus to approximate the conditions of the operation to those which existed in Langenbeck's case, but with little success; while some have removed the organ through the vagina without any attempt at altering its position; and once the abdominal cavity was laid open, and the womb removed through the incision. I need not enter into a long critique of these different proceedings, when I have told you that of 25 cases, 22 terminated fatally in consequence of the operation, and that two months, four months, and a year, were the respective periods during which the patient survived in what are termed the successful cases.[2]

Of the 22 fatal cases, 4 terminated within six hours, and 4 more in twenty-four hours, 7 in two days, 2 in three days, 2 in four days, 1 in a few days, 1 in ten days, and in 1 the duration of life is not stated, though the patient is said to have died from the effects of the operation.

In 21 cases the cause of death is stated, and appears to have been the pain or shock of the operation in 8 instances, hemorrhage in 3, hemorrhage and shock in 2, peritonitis in 6, peritonitis and shock in 1, and a so-called nervous fever in another instance.

But while facts such as these amply justify the general verdict of the profession, as to the impropriety of attempting the complete

[1] A case is on record of the successful extirpation of the uterus, said to be cancerous, by means of the ligature and knife, performed in the year 1783, by M. Marschall, of Strasburg, and reported in *Salzb. Med. Zeitung*, 1794, vol. i, p. 136, and another recently, by Bellini, in *Omodei Annali Universali*, for 1828, vol. xlvii, p. 355. In the latter case, however, the removal of the uterus was only partial. Paletta's case, in which the patient died on the third day, reported in *Omodei Annali*, 1822, vol. xxiv, p. 43, cannot with propriety be included among these cases, inasmuch as the removal of the uterus was unintentional, and the disease seems to have been rather a large fibrous tumor dragging the uterus beyond the external parts, than any form of cancerous affection. Récamier removed the procident cancerous uterus by ligature (*Archives de Méd.*, vol. xxx). The patient recovered, but died of dysentery in three months.

[2] The subjoined table gives, I believe, a tolerably accurate account of all recorded cases of total extirpation of the uterus on account of cancerous disease:

Successful Cases.

Operator.	References.	Period during which Patients survived.
Récamier, .	*Recherches sur le Traitement du Cancer*, 1829, vol. i, p. 519, ...	2 months
Sauter, . .	*Die gänzliche Extirpation d. Carc. Gebärmutter*, 1822, ...	4 months
Blundell, .	*Lancet*, Oct. 1828. *Med. Gazette*, vol. ii, p. 294, and vol. iii, p. 797, and MS. note at commencement of his *Researches*, &c., in Royal College of Surgeons, ...	1 year all but a few days

extirpation of the cancerous womb, no such general verdict of condemnation can be passed on that less hazardous operation which aims at the cure of the disease in an earlier stage by the removal of the affected part. Not to lose ourselves in fruitless antiquarian investigations, we may date the introduction of the *amputation of the cancerous neck of the womb*, among the operations of surgery from the year 1802, when it was successfully performed by the late Professor Osiander, of Göttingen. Between that time and the year 1816, Osiander amputated the neck of the womb in twenty-three instances,[1] and so striking an innovation as this proceeding not unnaturally excited much attention in Germany. The operation did not, however, meet with much encouragement among Osiander's countrymen, for the sometimes formidable, and in some instances fatal hemorrhage which often succeeded it, not unnaturally deterred many from attempting it, while it was further alleged

UNSUCCESSFUL CASES.

Operator.	Reference.	Date of Death after Operation.	Alleged Cause of Death.
Blundell, . .	*Lancet*, Nov. 22, 1828, vol. xv, p. 255, ...	2½ hours	Shock
" . .	Ibid., ...	9 "	"
" . .	Ibid., ...	39 "	"
Langenbeck, .	Langenbeck, Jr., *Dissertation*, p. 52, ...	24 "	Peritonitis
" .	Ibid., p. 55, ...	2 days	"
" .	Ibid., p. 58, ...	10 "	Nervous Fever
Holscher, . .	*Graefe u. Walther's Journal*, vol. vi, p. 638, ...	24 hours	Shock
Wolff, . . .	Ibid., vol. vii, p. 478, ...	2 days	Peritonitis
Siebold, . .	*Journal f. Geburtshülfe*, vol. iv, p. 507, ...	65 hours	"
" . .	Ibid., vol. vii, p. 600, ...	2 days	"
Banner, . .	*Lancet*, Oct. 11, 1828, vol. xv, p. 57, ...	4 "	"
Lizars, . . .	Ibid., Nov. 29, 1828, vol. xv, p. 269, ...	32 hours	Hemorrhage and Shock
Roux, . . .	*Archives Gén. de Médecine*, Oct. 1829, p. 238, . . .	33 "	Shock
" . . .	Ibid., p. 241, ...	24 "	Hemorrhage, Pain, Shock
Récamier, .	*Journal Hebdom.*, vol. vi, p. 120,	2 days	Hemorrhage
Dubled, . .	Ibid., vol. viii, p. 123, . . .	22 hours	"
Dieffenbach, .	*Operative Chirurgie*, vol. ii, p. 800, ...	4 days	Shock, Peritonitis
Delpech, . .	Boivin et Dugés *Maladies de l'Uterus*, vol. ii, p. 35, .	3 "	Pain, Shock
v. Walther, .	Kilian's *Operationslehre*, &c., vol. iii, 2d ed., p. 261, note,	Immediate	"
Warren, . .	*Am. Journal of Med. Sciences*, 1829, vol. iv, p. 536, . .	3d day	Hemorrhage
Bodenstab, .	*Neue Zeitschrift f. Geburtskunde*, vol. xviii, p. 232,	Immediate	Shock
Fabri, . . .	Froriep's *Notizen*, vol. xii, No. 20, p. 319, ...	Not stated	

[1] So stated in Langenbeck, *op. cit.*, p. 26, note 5, from sources there indicated.

that even in its originator's hands the operation failed more frequently than it proved successful. There were also personal defects of character which always stimulated into activity numerous hostile critics of Osiander's doings and sayings; and hence, until quite recently, the cases were very few indeed in which the amputation of the neck of the womb was had recourse to in Germany. In France, however, where no such causes were in action, the operation met with numerous advocates, and it received the sanction of Dupuytren, who performed it on several occasions. The remarkable results obtained by M. Lisfranc, who alleged that he had performed the operation ninety-nine times, and in eighty-four instances with lasting success, obtained for a time great notoriety, both for the proceeding itself, and for the surgeon who had constituted himself its most clamorous champion. Before long, however, doubts but too well founded were thrown on the accuracy of Lisfranc's statements, and his former pupil, M. Pauly, published a book in which he asserted, and his assertions have never been disproved,[1] that M. Lisfranc overstated the number of the operations he had performed, and falsified their results; and further, that in many of the cases in which he had removed the cervix, the disease was not cancer at all, but mere induration of the neck of the womb.

Though not altogether abandoned, yet both in France and in this country, where it had been occasionally performed, this operation fell into comparative disuse, till it was recently revived with better knowledge of the subject, and a juster appreciation both of the cases which are suited for it, and of those for which it is not fitted.

There can be no doubt but that formerly in many instances in which the neck of the womb was amputated, no cancerous disease existed, and I have myself seen the cervix uteri excised, and the patient exposed to the present risk of hemorrhage and to the subsequent dangers of uterine inflammation, for the removal of mere induration of the organ. On the other hand, the excision of the neck of the womb was not infrequently had recourse to in cases of fungoid carcinoma of the organ; a form of disease which, beginning in the substance of the part, has already made extensive progress when it reaches to the surface, and does not in general give rise to any obvious symptoms of its presence, till it has advanced so far that any attempt at its extirpation must be worse than useless.

Such were the two opposite errors by which this operation was brought into discredit; by the one it was performed when needless, by the other when useless. I have, however, described a variety of malignant disease to which it is applicable, and in which

[1] Those who wish to pursue the particulars of this quarrel, not creditable to either party, but least so to Lisfranc, will find the materials in Pauly, *Maladies de l'Uterus*, 8vo., Paris, 1836, pp. 427–481; and Lisfranc, *Clinique Chirurgicale*, 8vo., Paris, 1843, vol. iii, pp. 633–657. Lisfranc's feeble defence amounts almost to a plea of guilty on his part.

its performance has been found to be most salutary. Cases have long been on record in which the removal of cauliflower excrescence of the uterus has been followed by the patient's complete recovery; and there are other forms of disease of more solid texture, and endowed with smaller vascularity, which present the same character of beginning on the surface of the os uteri, and only by degrees extending to deeper tissues. Now precisely these epithelial cancers of the uterus are they which have been cured by the removal of the affected part, and to such cases I believe the operation ought to be almost exclusively limited. It is to be feared, however, that the conditions which even in this form of the disease warrant the performance of the operation, are comparatively seldom to be met with, for though I have been constantly looking out for cases suitable for it, two instances only have come under my observation in which there could be no hesitation as to the propriety of the proceeding. One of the patients was operated on by Mr. Arnott, in the Middlesex Hospital. There existed in her case perfect mobility of the uterus, so that but little difficulty was experienced in drawing the organ down beyond the external parts; while the neck of the womb was of sufficient length, and seemed sufficiently unaltered at its upper part, to warrant the expectation that the excision might be carried through healthy tissues, and that the disease might be completely eradicated. The hemorrhage in this case was very formidable, a large arterial trunk pouring out blood in great abundance, and this was restrained only by the employment of the actual cautery, while on the separation of the slough a second outburst of hemorrhage rendered it necessary to plug the vagina. These dangers surmounted, the patient's subsequent recovery was very rapid; she regained flesh and strength, and for nearly six months continued in the enjoyment of perfect health. Symptoms of her disease then reappeared, and she died in the course of two months, eight months after the performance of the operation. Even six months of life, of hope, of freedom from pain, of health and happiness, cannot be thought dearly purchased by an operation which, even without the aid of chloroform, is by no means very painful, and whose one great danger, that of hemorrhage, can generally be controlled, if not averted, by the use of the plug. The other case was still more satisfactory, for life was prolonged for more than a year, and death then took place from an accidental attack of bronchitis without any symptom of the recurrence of her disease having manifested itself, while the use of the ecraseur entirely prevented the hemorrhage which in the other instance had been so formidable.

The operation has been performed in various ways; either by drawing the uterus down with hooks so as to bring the diseased part beyond the vulva, just as in the excision of polypi; or, without displacing the organ, by simply cutting through the cervix, either with or without the previous introduction of the speculum, with a curved bistoury, a pair of scissors, or an instrument specially

contrived for the purpose, of which the most ingenious is Colombat's hysterotome.[1] It is very doubtful, indeed, whether any speculum could embrace the really cancerous cervix, and yet leave room for the dexterous manipulation of a bistoury or a pair of scissors. All complex instruments, such as Colombat's, are found in practice to be open to objections which their inventor never anticipated, and in spite of the obvious advantages of meddling no more than is absolutely necessary, I should prefer, whenever it is not attended by much difficulty, and can be accomplished without violence, to draw down the uterus before dividing the cervix.[2] This is to be done by means of hooked forceps inserted into the neck of the womb, just as they are inserted into a polypus which we are about to extirpate, and the parts may be divided by strong probe-pointed scissors, curved in the direction of their shank, not in that of their cutting edge, as is the case with Osiander's scissors, which have been much used for this purpose. The position in which the patient is placed is that usually adopted for lithotomy; but Dr. Simpson[3] recommends that she be placed on her face, with the legs hanging over the edge of the couch, as in operations for hemorrhoids. The reason which he assigns for it is a weighty one, and is probably the same as induced Lisfranc to cut from behind forwards[4]—namely, that as the peritoneum descends much further behind the neck of the womb than in front of it, there is much more risk of wounding it in an incision carried from before backwards, than if it were made in the opposite direction. I should imagine, however, that if this danger is borne in mind, it will not be difficult to avoid it without placing the patient in this very constrained attitude, which, among other inconveniences, has that of preventing the safe administration of chloroform.

Though the hemorrhage after the operation is sometimes very formidable, and has been known indeed in several instances to prove fatal, I am yet disposed to think that the actual risk to life from loss of blood has been overestimated, and that the danger of the supervention of phlebitis or inflammation of the peritoneum is in reality the more serious. Something of the risk of bleeding, too, may be referred to the inefficient way in which the simple operation of plugging the vagina is not infrequently performed.

[1] For a description and drawing of this instrument, see Meigs's translation of Colombat's work on *Diseases of Women*, 8vo., Philadelphia, 1845, p. 351.

[2] In dragging down the uterus, however, much caution must be observed; since, as Scanzoni mentions, *op. cit.*, p. 264, it is by no means unusual for adhesions, the result of peritonitis, to form between the uterus and adjacent parts, even in the early stages of cancerous disease of the womb. If these adhesions were torn or violently stretched, fresh inflammation of an acute kind would not fail to be set up; and Scanzoni even relates an instance in which a rent in the peritoneum behind the uterus, two inches in length, was produced during the efforts to draw down the womb in order to remove its cancerous cervix.

[3] *Obstetric Memoirs*, p. 180.

[4] Pauly, *op. cit.*, p. 473, asserts that hemorrhage proved fatal within twenty-four hours to three out of nine cases in which he assisted M. Lisfranc. Such a result, however, is quite out of proportion to the general experience in this matter.

Except during labor, it cannot be thoroughly done without the use of the speculum. The comparatively narrow vulva and entrance of the vagina render the introduction of the tow or cotton-wool a very tedious process; and the lower part of the canal is already filled, while its wider and extensile upper portion is so little distended that ample room is left for the accumulation of a large quantity of blood between the uterus and the plug, until at length under some effort at vomiting, or some sudden movement, an enormous coagulum and the plug are expelled together, and the bleeding breaks out afresh.

The question is not, however, whether the excision of the neck of the womb in these cases is unattended by immediate risk, but whether such risk is greater than would attend any other operation performed for the same purpose? That dread of hemorrhage which has led some practitioners to prefer the ligature to the knife for the removal of polypi, has also had much influence in preventing the excision of the cervix, and has consequently led to the restriction of attempts at cure to those softer varieties of epithelial cancer, in the removal of which, as of true cauliflower excrescence, the ligature is available. I employed the ligature with advantage, and without the occurrence of any alarming symptom, not indeed for the cure of the disease, but for the removal of an enormous mass of epithelial cancer, which, sprouting from the cervix uteri, occupied and distended the whole vaginal canal. In another instance, however, of less extensive disease, in which I saw the ligature employed in the hope of effecting a cure, the patient died of phlebitis; and Dr. E. Watson,[1] who has collected such scanty statistics as can be brought to bear on the subject, gives the following result of his inquiries. Of seven patients operated on by ligature, one died four months after of inflammation of the womb, which threatened to prove immediately fatal, and probably would have done so but for the removal of the ligature on the sixth day after its application. In every one of the others the disease speedily reappeared, but the life of one of the number was saved by the excision of the remainder of the cervix, an operation which was performed by Dr. Montgomery of Dublin. Of nine patients in whom the cervix uteri was excised, none died from the immediate effects of the operation; the disease returned in three; in five the cure was permanent; and the condition of one patient was doubtful, since her history was not brought down later than the eleventh day. Excision of the part seems to me the preferable proceeding, because it is applicable to cases where the ligature cannot be employed, because the present risk which attends it is, to say the least, not more considerable, while the prospect of a permanent cure is far greater. This opinion seems, too, to be that of the profession generally; for while, as far as I am aware, no fresh instance has been recorded of the employment of the ligature since the publication of Dr.

[1] *Monthly Journal*, Nov. 1849, p. 1183.

Watson's paper, there are many additional cases of the removal of the diseased cervix by excision.

Since the date of Dr. Watson's paper, many attempts have been made to combine the permanent advantages of the operation by excision with the greater present safety of the ligature by the use of the ecraseur. It seemed, however, as if this change in the mode of operating did but substitute a new danger for the old one, and one so grave as to more than counterbalance the safeguard which the ecraseur affords against hemorrhage. The instrument appears so apt to draw within its chain parts not involved at the time of its first application, that the peritoneum has on several occasions been wounded in the attempt to amputate the neck of the womb. This objection was recently urged against it at a meeting of the Berlin Obstetrical Society, by Dr. Mayer, who referred to an instance in which this accident had occurred to a patient of Professor Langenbeck; and Dr. Biefel on the same occasion mentioned a case of fatal injury to the bladder and peritoneum by the instrument.[1] A case of injury to the vagina, and protrusion of the intestine through the opening, is likewise related by Dr. Breslau,[2] but his patient happily survived, as also did another whose case came to my knowledge, and in whom a portion of the peritoneum behind the uterus was removed with the diseased cervix. It has been proposed by M. Simon, of Darmstadt,[3] in order to avoid this danger, that in all cases where the uterus admits of being drawn down beyond the external parts, a needle, or two needles, should be thrust through the neck of the womb, and the ecraseur should be applied below them. He rejects the ecraseur, however, absolutely in all cases where the uterus cannot be drawn down externally, though it is doubtful whether, even here, Dr. Braxton Hicks's wire ecraseur or Middledorff's application of the red-hot galvanic wire may not stand us in good stead, and avoid the risk of hemorrhage without substituting for it a new peril.

The cases in which any of these proceedings are applicable, must obviously be comparatively few and exceptional; since the disease admits of being extirpated only when comparatively limited in extent, and at a comparatively early stage of its progress. Is there then no resource in these circumstances but to watch the daily advance of the evil; or can anything be done to retard, if not to cure, to alleviate the patient's suffering and to postpone for some weeks or months the inevitable result? Dr. James Arnott,[4] to whose ingenuity we owe many very important suggestions in medicine and surgery, believes and adduces evidence to show that by the systematic *application of a very low temperature* to parts affected with cancer, the pain of which they are the seat may be greatly diminished, the advance of the disease may be consider-

[1] *Monatschr. f. Geburtsk.*, March, 1858, p. 169.
[2] Scanzoni's *Beiträge*, vol. iii, Würzburg, 1858, p. 80.
[3] *Monatschrift f. Geburtskunde*, vol. xiii, pp. 418–434.
[4] *On the Treatment of Cancer by the regulated application of an Anæsthetic Temperature*, 8vo., London, 1851.

ably retarded, and ulcerations of their surface may even be made to assume a comparatively healthy character. Practical difficulties in the way of applying the freezing mixtures so often as might be desirable, have interfered with the trial of his plans upon a large scale in our hospitals, while some degree of disappointment has been experienced in consequence of the proved inadequacy of cold to annul the pain of surgical operations in other than a very few instances, and those of the very simplest kind. Notwithstanding a very kind letter of explanation which Dr. Arnott was so good as to send me, I have yet found very great difficulties in the attempt at employing freezing mixtures in cases of uterine carcinoma. The necessary removal from bed to a couch, the discomfort of the position, the almost impossibility of preventing the patient's person from becoming wet, and the tenderness of the vagina and external parts produced by the frequent introduction of a large speculum, which, even when of great size, seldom embraces the hypertrophied cervix completely, have precluded my making such a number of trials of the agent as would alone warrant me in speaking with any measure of confidence as to its powers.

Other agents, more potent and more easily applied, have been used in cases of uterine cancer, but with results so indecisive that opinion is still much divided with reference to the propriety of their employment. In coming to a conclusion with reference to the use of any of these remedies, the object with which in each instance it has been had recourse to must not be lost sight of. I have already mentioned, that a strong solution of nitrate of silver applied to a cancer of the womb, in some stages of the disease, both diminishes the excessive fœtor of the discharge, and also expedites the separation of sloughs from its surface, aiding in this manner the attempts at a cure, which, though abortive as far as permanent recovery is concerned, are yet most welcome pauses in the course of the disease. For this purpose, I believe a strong solution is of greater service than the solid nitrate of silver, probably because in this form the remedy penetrates more thoroughly into the affected tissue. I have also sometimes employed the acid nitrate of mercury to check those granulations which in cases of uterine cancer not infrequently sprout from the interior of the cervix, and I think that in both of these ways the *use of caustics* has been advantageous as a palliative, not as a curative proceeding.

There are some forms of external carcinoma, in which the employment of the more powerful escharotics, as the chloride of zinc, has been of great service; but I need scarcely remind you that the benefit derived from such agents has depended almost entirely on the possibility of completely destroying the affected tissue, and that, as a general rule, its partial destruction has been followed by a more rapid development of the disease than before. Now, in the case of the uterus, it is obvious that the thorough application of any deliquescent substance is impossible; that the risk of injuring adjacent parts must lead to the inefficient employment of the caustic, and consequently to the aggravation instead of the

amendment of the disease. This circumstance leaves us no alternative but to resort to the *actual cautery* in any case in which it is intended to do more than modify the state of the surface of the affected parts. The idea of the operation is much more formidable than its reality, for it is not very painful in itself, while it can always be performed under chloroform; and the only real danger attending it, that of injuring adjacent tissues by the radiation of the heat, can always be effectually guarded against by the use of a boxwood speculum.

I have not myself used it, or seen it used sufficiently often to have formed a very decided opinion with reference to the amount of benefit which may be anticipated from it; but I feel satisfied that there is no danger to be apprehended in its employment, and that it does not tend to make matters worse. Generally there is a very decided, though often very temporary mitigation of the patient's previous sufferings, an improvement which has seldom outlasted the separation of the eschar. A diminution in the quantity and fœtor of the discharge has generally continued for a longer time, but I cannot say that as yet I have been able to attribute to it any delay in the progress of the evil, partly, perhaps, from not having repeated it sufficiently often, and in still greater measure probably from the disease being already far advanced when the patients first came under my care. I believe, however, that like other proceedings intended to effect the real cure of cancer, the actual cautery is seldom indicated except in cases of the epithelial form of carcinoma, for in that alone is the mischief at all likely to be confined within limits which we can hope to reach by any local treatment.

These remarks are, I know, anything but detailed enough to furnish a safe and sufficient guide as to when and how, and how often, this kind of interference is likely to be useful, or may even, by good fortune, prove actually curative. They are merely suggestive of the direction which your observations should take, and in which your efforts should be made. Your duty and mine is, not to sit down in apathetic indifference, doing nothing, trying nothing for a patient's cure, because her disease is one which hitherto has proved almost invariably mortal; but rather, patiently, carefully, with much distrust of our own powers, much watchful scrutiny of our own motives, to apply ourselves to the trial of every means by which suffering may be mitigated or life prolonged. To this our common humanity prompts, our obligations as medical men compel us. It is to misinterpret both very grievously, if we not merely content ourselves with doing nothing, but take shelter under noisy censure of the conduct, and uncharitable construction of the motives, of those who read their duty differently.

LECTURE XXII.

DISEASES OF PARTS CONNECTED WITH THE UTERUS. INFLAMMATION AND ITS RESULTS.

INFLAMMATION OF UTERINE APPENDAGES: OF THE CELLULAR TISSUE.

Causes of affection; generally consequent upon delivery or abortion; its various seats, and modes of termination; affection of the peritoneum in its course, general tendency to end in suppuration. Morbid appearances.

Relation of this affection to inflammation of the ovaries; its analogy to other inflammations of the cellular tissue.

Symptoms; mode of attack twofold. Formation of abdominal tumor; occurrence of suppuration, but chronic character of the abscess; various outlets by which it discharges itself. Diagnosis of the affection. Characters of intra-pelvic tumor; its similarity to uterine hæmatocele. General sketch of its symptoms and course.

THERE are many phrases which, though still daily used in medical writings, express not merely the opinions but also the errors of a bygone time. It is thus with the term *uterine appendages*, long applied to parts connected with the womb, some of which, indeed, are secondary to it in importance, and subsidiary to its functions, but others are physiologically of higher moment than the uterus itself, and originate those acts to whose due performance the womb does but minister.

I have no fear, however, lest by retaining the phrase *appendages of the uterus*, or by speaking to you about their diseases, I should be suspected of ignoring the office of the ovaries, or of implying that they are of less importance than the womb in the sexual system of the woman. I shall be understood to use the term merely as a convenient epithet, expressing without waste of words the broad ligaments of the uterus and all the various parts and structures contained within or intimately connected with them; parts whose physiological import just now concerns us less than do the ailments to which they are liable.

When speaking of the diseases of the uterus itself, we considered first those which are the result of inflammation; and it will, I think, be convenient still to retain the same arrangement, and before passing to other subjects to study the *inflammatory affections of the appendages of the womb*. These admit of being classed under two heads, according as the inflammation attacks the ovaries themselves, or as it is chiefly limited to the cellular tissue in the immediate neighborhod of the womb. In the latter case the symptoms are of course modified according to the precise seat of the mischief, which, though most frequently involving the cellular tissue between the folds of the broad ligaments, sometimes attacks that which intervenes between the womb and the adjacent viscera, or extends to that lining the pelvic walls, or even to that which lies between the outer surface of the peritoneum and the abdominal muscles.

Inflammation of the cellular tissue in the neighborhood of the womb takes place as a consequence of abortion or of delivery much more frequently than from any other cause. The great tendency that it has, too, to terminate in suppuration, familiarized practitioners of midwifery from a very early period with it; or at least with the abscesses to which it gives rise, though misconception long prevailed with reference to their nature. They were generally imagined to be secondary deposits, the result of a supposed metastasis of the milk, or of an outpouring of its elements when present in too great abundance in the blood. It was imagined, too, that this occurrence sometimes took place in one situation, sometimes in another, and the most various sequelæ of delivery were attributed to this as their remote occasion; a theoretical error, which as Puzos' essay, "Sur les Depôts Laiteux,"[1] abundantly proves, did not at all interfere with the most accurate description of some of the most important ailments of the puerperal state.

With advancing knowledge the erroneus theory was discarded, but the inflammatory affections of the uterine appendages ceased to attract attention, or were passed over as occasional complications of puerperal fever, until attention was once more drawn to them quite recently by the essays of Doherty, Churchill, and Lever, in this country,[2] and by those of Grisolle, Marchal de Calvi,[3] and others, in France. Even at the present time, however, and in spite of the recognition of these ailments as attendants on the puerperal state, their occurrence independent of pregnancy and its consequences has scarcely been appreciated as generally as it deserves, and it is this circumstance which is my chief reason for bringing the subject now under your notice.

An attempt has been made by some writers to discriminate between inflammation of the uterine appendages occurring after delivery, and the same affection when coming on in other circumstances. I do not think, however, that this distinction is called for either by the symptoms of the disease, or by the treatment which it requires in the puerperal state, though the peculiar condition of the uterus at that time often imparts to disease in its vicinity a more acute character than would be presented by the same ailment at another season.

The subjoined table shows very clearly the influence of labor and its consequences in giving rise to inflammation of the appendages of the womb, and of the cellular tissue in their immediate vicinity. It shows, too, that almost invariably, even when labor did not precede the attack, some accident induced it, which acted immediately on the womb, such, for instance, as miscarriage, or disorder of the catamenia; while the cases were only 7 in 59, in

[1] In his *Traité des Accouchemens*, 4to., Paris, 1759. See especially pp. 356–366.

[2] *Dublin Journal*, vol. xxii, 1843, p. 199; Ibid., vol. xxiv, 1844, p. 1; and *Guy's Hospital Reports*, Second Series, vol. ii, 1844, p. 1.

[3] *Archives Gén. de Médecine*, Third Series, 1839, vol. iv, pp. 34, 137, 293; and *Des Abcès Phlegmoneux Intra-Pelviens*, 8vo., Paris, 1844.

which the attack was not brought on by some local ailment of the sexual system.

Occurred after	Delivery in	32	cases.
"	" Abortion, ...	11	"
"	" Disorder of Catamenia, . . .	7	"
"	" Seduction, and some probable violence to Uterus, . . .	1	"
"	" Ulceration and Inflammation of Uterus, ...	1	"
"	" No ailment of Uterus, . . .	7	"
		59	

In 10 of the 32 cases in which the affection succeeded to delivery the patients were primiparæ; or if to my own cases those of Lever, of Marchal de Calvi, and of McClintock[1] be added, 56 out of 112 cases were those of women who had been delivered for the first time. The supposition, however, which this fact might seem to suggest, that protracted or difficult labor specially predisposes to this ailment, is scarcely borne out by further inquiry; since in 21 of my 32 cases, and in 7 out of 8 of those recorded by Dr. Lever, labor was in all respects natural. In 4 of my cases it was protracted, though in none was instrumental interference necessary; in Lever's case turning was performed on account of arm-presentation; in 1 case of mine extensive laceration of the perineum seemed to have been the point of departure of the whole of the subsequent inflammatory mischief, and in the remaining 4 labor was attended by profuse hemorrhage, an accident which also complicated one of the cases of tedious labor. From these data all that we can venture to affirm is the preponderance of frequency with which the accident occurs in primiparæ, and an increase of liability to its occurrence when labor is more than usually protracted, or when it is accompanied by hemorrhage. M. Grisolle expresses his belief that the omission on the part of the mother to suckle her infant is one of the most powerful predisposing causes of the disease, and this opinion is in the highest degree probable; but in this country it is so universally the practice for women, especially among the poor, to suckle their children, that none of my observations bear at all on that point.

The nature of the influence of abortion, of disorder of the catamenial function, or of other accidents which directly interfere with the sexual organs, is too obvious to call for explanation. Why under the influence of such causes a woman should be seized in one case by violent general peritonitis, in another by an ailment chronic in its course, and seldom dangerous to life, it is perhaps impossible to explain. In so far, however, as this disease is a consequence of labor, it must be borne in mind that it is essentially different from any of the complications or sequelæ of puerperal fever. Puerperal fever is a disease of the whole constitution, associated with important changes in the circulating system, probably

[1] *Op. cit.*, p. 3.

with other alterations too, which we have not at present the skill to discover; but the local mischief which may be found after death was no more its occasion, than are the ulcerations of Peyer's glands the occasion or the essence of typhoid fever. In puerperal fever, there may be evidence of injury to the uterus, or to its appendages, or to its vessels, or to the peritoneum, but there is this and something more; and this something more, the *divinum aliquid*, *το θειον* of Hippocrates, has puzzled our philosophy, eluded our research, and outwearied the speculations of the most ingenious theorists who have labored vainly to unriddle its nature.

Hence it is, however, that these inflammations of the uterine appendages, or of the adjacent cellular tissue, do not usually come before us in cases where puerperal fever has threatened life, for that disease either destroys the patient speedily, or with the abatement of the general disturbance of the system, the local evil, unless the mischief done was irreparable, abates too, and soon disappears completely. This ailment, on the other hand, begins as a local affection, its early symptoms are often so slight that it is overlooked for days or weeks together, the constitution sympathizing just in proportion to its extent and intensity, and general health returning as the consequence of the mitigation or of the cure of the local disease.

There does not seem to be any rule that determines absolutely either the part which shall be the seat of inflammation, or the course which that inflammation shall run, and whether it shall issue in suppuration, or may by good fortune terminate in resolution. The cellular tissue anywhere in the neighborhood of the womb may be the seat of the mischief, though that contained within the folds of the broad ligament is attacked, as the subjoined table shows, far more often than the same structure in any other situation, or 38 out of 59 times.[1]

The tendency of recent investigations, too, is to show that here, or rather in the ovary and Fallopian tube of one or other side, is the almost invariable starting-point of the mischief, be the parts eventually involved in it what they may. The inflammation further seems to extend from the appendages of the womb to the peritoneum lining the pelvis; it often ties down the appendages behind the uterus, or forms adhesions between them and the intestines, or mats together the intestines themselves, while matter is sometimes formed in the irregular cavities left between adjacent surfaces of the peritoneum, or of the false membranes which connect different parts together. The importance of this *pelviperitonitis*, as he terms it, has been much insisted on by M. Bernutz,[2] who seeks in it for the adequate explanation of all the

[1] I must be allowed to correct an inadvertence on the part of M. Aran, who, *op. cit.*, p. 680, note, states that I allege the tissue between the uterus and rectum to be the most frequent seat of this affection. The statement in the text is word for word the same as in the previous edition.

[2] In the *Archives de Médecine*, March and April, 1857, and afterwards at very great length in vol. ii of his and M. Goupil's work, *Sur les Maladies des Femmes*, already referred to.

Table of Cases of Inflammation of Cellular Tissue in the Neighborhood of the Womb.

Parts Affected.	After Delivery.	After Abortion.	After Disordered Catamenia.	After Seduction.	After Inflammation and Ulceration of Uterus.	Independent of causes acting specially on the Uterus.	Total.
Right side, without abdominal tumor,	2	2	...	...	...	2	6
" with "	...	1	...	...	...	...	1
" " " and suppurating,	1	...	...	...	...	...	1
" " " suppurated, and with external peritonitis,	...	...	1	...	...	...	1
Left side, without abdominal tumor,	6	1	1	...	...	1	9
" " " but suppurating,	1	...	1	...	...	...	2
" with "	2	...	...	...	...	...	2
" " " and with external peritonitis,	1	...	...	...	...	...	1
" " " and suppurating,	2	...	3	...	...	...	5
" " " suppurated, and with external peritonitis,	5	1	...	...	...	...	6
Both sides, without abdominal tumor,	1	1	...	...	...	1	3
" " " suppurated, and with abscess in glutæus,	1	...	...	...	...	...	1
Tissue between uterus and rectum,	2	...	...	...	...	1	3
" " " and suppurating,	3	3	1	1	1	2	11
Tissue between uterus and bladder,	...	1	...	...	...	...	1
" " " and suppurating,	2	...	...	...	...	...	2
" " " suppurated, and with external peritonitis,	1	...	...	...	...	...	1
External peritonitis alone, suppurated,	3	...	...	...	...	...	3
	33	10	7	1	1	7	59

phenomena, both local and general, which have usually been supposed to depend on inflammation of the cellular tissue about the uterus. He would propose this solution not of those cases only in which the parts at the side of the womb are the seat of this affection, but for those also (14 out of every 59 cases) in which the inflammation appears to be seated between the uterus and rectum, for here, too, the matting together of the intestines may form a tumor in the recto-vaginal pouch, which may present the characters supposed to belong to pelvic abscess. When, however, he denies the possibility of inflammation of the cellular tissue about the uterus, with the exception of that contained between the folds of the broad ligament, he goes further than I am at present prepared to follow him. In 4 out of my 59 cases the tissue intervening between the uterus and bladder was the seat of inflammation, which in 3 of the cases went on to suppuration, and the matter so formed twice escaped spontaneously, and once was evacuated by means of a trocar introduced through the anterior vaginal wall. To these cases it is obvious that the explanation of M. Bernutz cannot apply, nor do I think it holds good with reference to many instances of retro-uterine tumors; while, with reference to the broad ligament itself, M. Bernutz admits the possibility of inflammation and suppuration involving the tissue between its folds.

The inflammation is in many instances not limited to its original seat, but extends, and that not always by direct continuity of tissue, to the cellular tissue lining the pelvis, or attacks that which is interposed between the abdominal muscles and the peritoneum, constituting the external peritonitis of some writers. In these cases, too, the mischief may recede from the parts which it originally attacked, and the gravity of the secondary ailment may entirely obscure the perhaps transitory affection in which it originated, a supposition that will probably apply to not a few of the instances in which affection of the pelvic cellular tissue and that external to the peritoneum has seemed to be idiopathic.

Like other inflammations, so these sometimes pass away, and leave no trace. Oftener they issue in the production of permanent swelling and induration, due either to the results of the local peritonitis, or to actual thickening of the cellular tissue which has been the seat of the attack; or, lastly, they may end in the formation of pus, and probably in its discharge through the rectum, vagina, or bladder, or now and then in its escape into the cavity of the abdomen. This termination by suppuration appears to be very frequent in the case of those inflammations which succeed to delivery or abortion. I find it noted as having happened in 23 out of 43 instances in which the inflammation succeeded to delivery or abortion; and the large experience of Dr. McClintock[1] leads to the same conclusion, since he met with it in 37 cases out of 70. My own impression, too, formed chiefly on bygone hospital

[1] *Op. cit.*, p. 9.

experience, is that the same rule holds good even in those cases where the disease occurs independently of puerperal causes. My table shows 9 instances out of 16 as having terminated by suppuration, and in this respect agrees with the statement of M. Grisolle, who found it take place in 38 cases out of 51. General experience, however, it must be confessed, does not bear out these statements. M. Aran demurs to their correctness,[1] and M. Gallard,[2] in a very carefully written essay, regards the occurrence out of the puerperal state as so rare as to have been met with only in 4 out of 53 cases. I have no longer the opportunities of large hospital observation by which to control and correct my own impressions; but it seems to me probable that the cases which came under my notice in a small ward for admission into which there were many applicants at St. Bartholomew's Hospital, were of a severer kind than those which formed the basis of M. Gallard's thesis; and further, that many of the slighter forms of what M. Bernutz terms *pelvi-peritonitis* may have been taken into account by observers recently, though they would not have entered into their calculations some few years ago.

While I indicate, then, as I have already done with reference to other questions bearing on this subject, the differences of opinion which prevail, I am not at present in a position to modify my original statement, that the occurrence of suppuration, or, at least, of œdema, with infiltration of sero-purulent fluid, is in all these cases the rule rather than the exception, and this even though no discharge of matter should at any time take place externally. The extreme rapidity with which a tumor forms so as to be detected through the abdominal walls, or to be felt in other cases in the vagina, is explicable only by the sudden pouring out of fluid into the loose cellular tissue; while its varying extent, its ill-defined edges, its occasional disappearance from one side and reappearance on the opposite, all serve to show that, whatever may have been its starting-point, the mischief does not in general seriously involve the substance of any solid organ such as the ovary, and consequently to explain the completeness of the patient's recovery, and the subsequent integrity of all her sexual functions, even when the attack has been most severe and the symptoms have appeared most formidable.

The original seat of the mischief in the cellular tissue immediately adjacent to the uterus is illustrated by the subjoined case, where I had the opportunity of observing after death the process by which nature had effected the cure of an inflammation of the cellular tissue contained within the folds of the left broad ligament. The person on whom this observation was made was a young woman who died of abscess of the liver fourteen months after her recovery from inflammation of the uterine appendages of the left side. The results of examination when she was originally admitted into the hospital, six weeks after her delivery, were as

[1] *Op. cit.*, p. 707. [2] *Du Phlegmon Péri-utérin*, 4to., Paris, 1855.

follows: the abdomen generally was soft and painless, but immediately over the symphysis, extending about two inches above its level, and about the same distance transversely, was a firm, globular enlargement, very slightly movable, tender on firm pressure. The vagina was hot, its anterior wall from about half an inch from the orifice of the urethra was swollen into a distinct elastic tumor, which gave the sensation of containing fluid, and projected so as to contract to half its ordinary dimensions the calibre of the canal. In this tumor, which was not modified by the introduction of the catheter, the anterior lip of the uterus was lost, while the posterior lip was small and natural. The right side of the uterus was free from any unnatural condition, the swelling existing to the left and anteriorly. The uterus and tumor, when pressed on, moved together, but their mobility was very small. In a few days the tumor felt per vaginam was greatly lessened after a profuse discharge of pus, and when the patient, after six weeks' sojourn, left the hospital, there was said to be no other morbid condition than a thickening at the left side of the uterus, by which it was almost completely fixed in the pelvis.

The appearances found after death explained this thickening, and accounted for the non-mobility of the womb, for the folds of the broad ligament, from the upper part of the vagina to the lower surface of the ligamentum ovarii, inclosed a mass of dense cellular tissue of almost cartilaginous hardness, crying under the knife; dense white bands intersecting each other in all directions, and having a firm, yellow fat between them. This mass was closely adherent along the whole left side of the uterus, though the uterine tissue was in no respect implicated in it. The left Fallopian tube was tied at two or three points by long adhesions to the ovary and its ligament, and the ala vespertilionis on that side was thickened and uneven, as if from old deposits of lymph. The Fallopian tubes were pervious, and the ovaries were quite healthy, and contained several Graafian vesicles.

Between the affection we are now studying and inflammation of the substance of the ovaries themselves the differences are obvious and manifold. The extreme rapidity with which matter is formed, and the large quantity of it which is secreted in so short a time, are not compatible with the seat of the disease in the substance of an organ furnished as is the ovary with a dense fibrous capsule, which, though elastic and admitting of vast expansion in the course of time, is yet not capable of yielding so as to allow of the accumulation of a large quantity of matter in a few days. The termination of ovaritis by suppuration is, I believe, quite exceptional. In the puerperal state it is the peritoneal investment of the ovaries which is usually affected; while when inflammation even of the acutest kind attacks the substance of those organs, and ending in the formation of matter proves speedily fatal, it does not lead to any great increase of their size, but to softening and complete disintegration of their tissue. When, in other circumstances, large collections of matter form within the ovary, their origin is usually

traceable to some cyst in whose wall inflammation has been accidentally set up; and such ovarian abscesses generally remain for a long time as distinct, well-circumscribed tumors, whose contents are very slow in making their way outwards. Generally, indeed, ovaritis is not only a far more chronic evil than inflammation of cellular tissue about the womb, and is attended by pain of a very different character, but the enlargement of the organ is almost always inconsiderable, and its situation is often inferred from pain produced by pressure at one spot rather than clearly pointed out by any considerable increase of its dimensions, while the thickening and hardening of the vaginal walls, scarcely ever absent from that side of the canal on which the affection of the cellular tissue is situated, is never met with in cases of simple ovarian inflammation.

The analogies of this affection are, I believe, rather to be found among those inflammations of the cellular tissue which, succeeding to operations, advance with great rapidity, and terminating soon in the formation of enormous quantities of matter, constitute one of the most untoward of those accidents by which the skill of the surgeon is disappointed of best merited success. The rapid formation, and occasional rapid disappearance of the swelling, show, if further proof were wanting, that it is not due to changes in the solid tissues of any organ, but rather to œdema or the infiltration of a loose tissue with fluid. This fluid, too, like that which is formed in other inflammations of cellular tissue, is not at first genuine pus, but a thin sero-purulent matter, and often still retains this character long after it has been formed in quantity sufficient to impart to the finger a most marked sense of fluctuation.

These characters then correspond to those of diffuse cellular inflammation, or "acute purulent œdema," as it has been well termed by the distinguished Russian surgeon, Pirogoff.[1] If we take this view, which he indeed suggests, even the most anomalous features of the affection will become comparatively easy to understand. We shall not be surprised that the disease should occur in the weakly rather than in the strong, that previous hemorrhage or other debilitating influences should favor its development, that while often attended by comparatively little local suffering, it should yet run rapidly through its earlier stages; but still now and then come suddenly to a standstill, and that all trace of it should then quickly disappear. Since we know, too, that the seat of the mischief is not in the sexual organs themselves, but only in their connective tissue, we shall find nothing difficult of explanation in the re-establishment of menstruation, or in the recurrence of pregnancy, or in the regular performance of all the generative functions, even after symptoms which had seemed most formidable, and had appeared as though they must imply that injury had been done passing the power of nature to repair.

In those cases in which the affection succeeds to delivery or

[1] *Klinische Chirurgie*, Drittes Heft, 8vo., Leipzig, 1854, pp. 36–54.

abortion, its *mode of attack seems to be twofold.* Either it sets in with well-marked symptoms of constitutional disorder, such as general feverishness and heat of skin, sometimes, though not often, preceded by shivering, and accompanied by abdominal pain, which is seldom very intense; or else it comes on gradually, the local evil being developed almost imperceptibly out of a state of incomplete convalescence; while it is quite an exceptional occurrence for severe puerperal peritonitis to precede the inflammation of the uterine cellular tissue. In the majority of instances the tenderness and pain, though referred chiefly to the lower part of the abdomen, are not at first distinctly limited to one or other side, and not infrequently the discovery of swelling, induration, or even of a definite tumor in one or other iliac region by the medical attendant, is the first circumstance which directs the patient's notice to one spot as the special seat and source of her sufferings. The symptoms of general constitutional disorder, even when most marked at the outset, very rarely go on increasing in severity with the progress of the local mischief, but, having set in on the second or third day after delivery, subside at the end of a fortnight or three weeks. This subsidence of the symptoms often takes place quite independently of the employment of any medical treatment; but the apparent convalescence thus established is not only imperfect from the first, but becomes every day more and more interrupted, as the local ailment advances, and now, if not earlier, distinctly manifests itself by abdominal pain, by painful micturition or defecation, or by some other symptom which clearly points to its situation.

It depends upon the situation of the affected parts, whether or no any tumor is perceptible externally; for while always more or less manifest in cases where the parts contained within the broad ligament are the seat of inflammation, it is generally absent when the mischief is limited to the cellular tissue between the uterus and bladder, and always when it is confined to the parts in or about the recto-vaginal septum. The somewhat vague character of the symptoms in many of these cases, and the too common neglect of vaginal examinations, lead in cases of this description to very frequent mistakes as to the nature of the patient's ailment, and mistakes all the less excusable since there are few ailments whose diagnosis is more simple if the investigation is properly conducted. It is not easy to say at how early a period after the commencement of the attack a swelling forms, so as to be detectable on examination; but my impression is, that though often not discovered till after the lapse of many days, it usually occurs very speedily. Careful examination even two or three days after the symptoms began, will generally ascertain the existence of fulness in one or other iliac region, will find that on pressure there the complaint of pain is greater than elsewhere, and that percussion in that situation yields a dull sound, and conveys a sense of solidity not perceptible on the other side. In such circumstances, local depletion will not only afford immediate relief to the patient's

sensations, but that relief will be accompanied by a disappearance of the swelling so complete and so speedy as to raise a momentary doubt in our minds as to whether the impression of its existence was not a mistake. The doubt, however, would be unfounded: the swelling was very real, due possibly to œdema of the cellular tissue, in which, but for our treatment, suppuration would soon have taken place, as indeed it does in the great majority of cases, and then condemns the patient to a tedious illness, and a tardy convalescence. The same rapid formation, and rapid disappearance of the swelling, receive another illustration in cases where a sort of metastasis of the inflammation takes place, or where, to speak more correctly, the mischief, originally situated on one side, attacks without apparent cause the other also; and the new complaints of pain in a different situation are accompanied by tumefaction there, which may be very temporary; or may, if the inflammation there advance, become as solid, and prove as permanent as that on the other side. It is not possible to fix the precise limits of time within which resolution of the swellings may take place. My impression, however, is that the period is very short, and that after the lapse of a few days at furthest, the changes are far too considerable for any rapid cure; and that pus is early formed, though the processes by which it makes its way to the surface are generally very tardy, and those are slower still by which, without any escape of matter externally, its complete absorption is now and then effected. The formation of matter is by no means invariably followed by any marked increase in the sufferings of the patient; and it is surprising how the constitution bears its presence even in considerable quantities, the mechanical inconveniences produced by the pressure of the abscess being not infrequently those from which the patient suffers most, and which drive her at length to seek for medical assistance. Thus, a young woman, aged twenty-five, was admitted in the year 1849 into St. Bartholomew's Hospital, having been ill since her delivery seven months before. On the ninth day after her confinement she was attacked by abdominal inflammation, the more acute symptoms of which subsided under depletion, and she attained a state of imperfect convalescence. She went about some of her household duties, though with difficulty, and even cohabited with her husband in spite of the pain by which sexual intercourse was attended. When she sought for admission into the hospital it was on account of increased difficulty in micturition, and frequent desire to pass water. On examination of her abdomen an oval tumor was discovered in the mesial line reaching midway between the symphysis pubis and the umbilicus, and produced by a collection of pus in the cellular tissue between the uterus and bladder, ten ounces of which escaped on a puncture being made into it through the vaginal wall. The patient alleged that the tumor had existed only for three weeks; a statement which can scarcely be received as correct, since she had never thoroughly recovered from the illness which followed her delivery; but which may be accepted as evi-

dence that the abscess had produced no special effects, till by its increased size it began mechanically to occasion discomfort, and to interfere painfully with the functions of her bladder.

Another illustration of the same fact may be adduced in the person of a young woman in whom constipation from the fourth to the eighteenth day after her first confinement was followed by inflammation of the cellular tissue behind the rectum. The action of her bowels was from this time attended by great pain, and costiveness alternated with diarrhœa, the evacuations being not infrequently intermixed with pus. In spite of these symptoms, however, she gradually regained her general health, and menstruation returned, though not regularly. Seventeen months after her confinement she had been visiting the Crystal Palace, in Hyde Park, and while returning home in an omnibus, the jolting of the vehicle occasioned the sudden bursting of an abscess, and the discharge of about three pints of matter streaked with blood per anum. For the next three months from that time, more or less copious purulent discharges took place from the bowel, behind which the abscess whence it proceeded was situated, forming there a tumor of about the size of a small apple. Occasional local leeching and the most sedulous attention to the state of the bowels were succeeded by the cessation of the discharge, and the ultimate complete disappearance of the tumor, of which six years afterwards no trace existed.

The presence of any collection of pus so considerable as that which existed in these two cases is decidedly unusual; but though the size of the abscess is not in general very great, it not infrequently passes into a chronic state, and emptying itself, for the most part, through some narrow passage of communication, into the bowel, the patient continues for months or years liable to occasional discharges of pus per anum, the commencement of which dates back to some attack of inflammation of the cellular tissue years before. In the case of a poor woman who died after long suffering from ulceration of a quasi-malignant character about her urethra and rectum, a collection of matter was found in the midst of the thickened and condensed cellular tissue by the side of the rectum, and between it and the uterus. This abscess, too, was lined by a membrane so distinct, so smooth and polished, as for a moment to raise the question whether it was not a distinct cyst in which suppuration had been accidentally excited. A patient was some years ago under my care in whom inflammation of the cellular tissue between the uterus and rectum having gone on to suppuration, it was considered expedient to puncture the tumor which was found in the vagina. Not more than two ounces of sero-purulent fluid were evacuated by this proceeding, but from the puncture flowed for the ensuing seven weeks many ounces of pus daily, its quantity, however, diminishing, and the discharge at length completely ceasing as the patient advanced towards recovery, and as the swelling behind her womb diminished. In another instance, occasional discharges of matter took place from the bowel, and

pus was often intermixed with the fæces, five years after the first symptoms of inflammation of the cellular tissue about the uterus, the chronic results of which were still evident in a tumor which was closely connected both with the rectum and the womb. These chronic abscesses generally contract, and the fistulous passages which lead to them become by degrees obliterated, but exceptions to this now and then occur, two of which have come under my own notice, and Dr. Simpson[1] has reported some very interesting cases where permanent fistulous communications have formed between the abscess succeeding to inflammation of the pelvic cellular tissue, and the bladder, uterus, or intestinal canal.

Often, though perhaps not always, the formation of abscesses having so chronic a character as those to which reference has just been made, might be prevented if the nature of the ailment were recognized at the commencement. The *diagnosis*, too, is not attended by much difficulty if only it is borne in mind that whenever after delivery or miscarriage ill-defined febrile symptoms occur, accompanied by abdominal pain, inflammation in the vicinity of the uterus is probably present, and this even though the constitutional disturbance should not be considerable, nor the pain experienced by any means severe. If now the inflammation is seated in the broad ligament, there will at first be found in one or other iliac region a vague sense of fulness; percussion in that situation yielding a dull sound, and pressure being painful; and afterwards a more definite swelling. At no time, however, is this swelling so circumscribed that its border can be distinctly traced, nor is it movable like a fibrous tumor of the womb, or an enlarged ovary, but it is felt like a hard mass, extending laterally to the inner surface of the pelvic wall, and firmly adherent to it, reaching down into the pelvic cavity so that its lower border cannot be felt, while its upper and inner margin are both but vaguely marked; the thickening in those situations seeming rather to pass away by degrees than suddenly to cease. The dimensions of this swelling are always much more considerable from side to side than from below upwards; differing in this respect from tumors of the uterus or ovaries; its surface is even, but extremely hard; it seems very superficial; the abdominal walls are not readily movable over it, but often seem as though they were adherent to it. This, too, they doubtless are in some cases, but the same sensation is very often communicated to the hand in instances where there is no reason whatever for supposing that adhesion has taken place between the opposite surfaces of the peritoneum, while further, the rapidity with which in some cases the apparent union is dissolved, shows that it must have depended on some cause of a much more temporary nature. My impression is, that it is in a measure due to œdema of the cellular tissue between the abdominal muscles and the peritoneum; a condition which not infrequently terminates in suppuration, and thus constitutes what has

[1] *Obstetric Memoirs*, vol. i, p. 232.

been termed *external peritonitis*, but which in many cases is but an attendant on inflammation of the more deeply-seated tissues, increasing as that advances, remaining stationary when that comes to a standstill, and rapidly disappearing as that begins to subside. An obvious lessening of the general fulness of the abdomen, and a sense of mobility of the abdominal walls over the tumor, is one of the first signs of the patient's amendment, and one which often long precedes any alteration in the size or contour of the swelling; while next, as its size lessens, the previous adhesions between it and the pelvic wall become less firm, and its chief connection is felt to be not with the side of the pelvis, but with some body at its centre; in other words, with the uterus itself. Up to the last, the indistinctness of outline which has been already noticed as characteristic of these swellings continues to distinguish them, and a vague sense of fulness in the iliac region remains long after all other evidence of their presence has ceased.

When suppuration takes place, the matter makes its way outwardly through the vagina, or through the intestinal canal, in almost all cases in which the inflammation is limited to the parts contained within the broad ligaments. In those cases, however, in which the pelvic cellular tissue is implicated, the matter not infrequently makes its way round between the muscles and the external surface of the peritoneum, and the abscess points and discharges itself through the abdominal walls somewhere in the course of Poupart's ligament, or a little below that situation. It sometimes happens, however, that even after fluctuation has become distinctly perceptible through the abdominal walls, the abscess eventually bursts either through the vagina or the rectum, and in one instance a communication formed apparently about the situation of the sigmoid flexure of the colon; and after the escape of matter by the bowel, air was for many days distinctly perceptible in the sac of the abscess.

In cases of uncomplicated external peritonitis, and also in those where inflammation in this situation occurs simultaneously with that of more deep-seated parts, the tendency naturally is to the escape of matter externally. The swelling in cases of external peritonitis is harder and tenser than when the mischief is more deeply seated, the integuments become red, shining, and brawny, and this condition extends lower down than when the inflammation is seated in the parts within the folds of the broad ligament, and reaches quite into the inguinal region. The quantity of matter formed in these cases usually amounts to several ounces; the abscess pointing at one spot, and the whole of its contents escaping at a single aperture. Sometimes, however, in cases where inflammation of the uterine or pelvic cellular tissue is present, the tissue external to the peritoneum becomes affected secondarily; not by direct extension of the mischief to it, but rather by a sort of sympathy, and in this case two or three small circumscribed collections of matter are not infrequently formed, each of which may require to be separately evacuated.

An examination per vaginam throws additional light upon the case, except of course in those instances in which the external surface of the peritoneum is alone affected. The vagina is hot, and puffy, and tender; and, according to the seat of the inflammation, either its anterior or its posterior wall is felt to be thickened, and hard like brawn; and the uterus itself is fixed by this thickening of the vagina more or less completely in the pelvis, and at the same time is carried by means of it higher up than natural, so as not to come as readily as usual within reach of the exploring finger. As the cellular tissue within the folds of the broad ligament is oftener affected than that in any other situation, so it is at the roof of the vagina, towards one or other side, and commonly extending somewhat round behind the uterus, that these characters are most marked. Soon, too, a distinct tumor is perceptible in addition to the general thickening, swelling, and hardness of the vaginal wall, and the swelling, if considerable, pushes over the uterus towards the opposite part of the pelvis. If seated at the side it does not in general dip down deeply into the pelvic cavity, and though it may be seized between the hand externally, and the fingers in the vagina, the state of the abdominal integuments, and the thickening of the roof of the vagina interfere with the accurate determination of its size and contour. If the mischief extends, as often happens, either in front or behind, a definite swelling is very likely to be formed, and this swelling is usually larger and more distinctly circumscribed when situated behind the uterus than when occupying the cellular tissue in front of the organ. If the cellular tissue between the uterus and bladder, and along the anterior vaginal wall, is the seat of the inflammation, we may then find the hardened, thickened, tumefied state of the vagina reaching down to its very outlet, and the os uteri pushed quite out of reach by a swelling in front of it, not distinctly circumscribed, but passing over into the substance of the thickened anterior vaginal wall. If any large quantity of pus is formed in this situation, it does not commonly seem to increase very much the size of the pelvic tumor, but forms a distinct, well-defined swelling between the uterus and bladder, which rises up out of the pelvic cavity, and may be felt through the abdominal walls, occupying the situation, and having much the contour of the half-distended bladder. It is when seated behind the uterus, on the other hand, that the occurrence of suppuration is apt to give rise to the most definite pelvic tumor; for there is in this situation a greater obstacle than elsewhere to the extension of the swelling upwards out of the pelvis, while the cellular tissue in the recto-vaginal septum is looser and more abundant than anywhere else in the immediate vicinity of the uterus. Here then matter very speedily forms, and gives rise to a swelling which occupies the whole posterior part of the pelvis, bulging out into it, just as an ovarian tumor is apt to do when seated in the recto-vaginal pouch, but more elongated in form, less globular, and while generally tense, yielding usually at one spot, perceptible through the vagina or through the rectum, a peculiar boggy sen-

sation, suggestive of a thinning of its covering having taken place there, and of matter being likely to escape in that situation. The os uteri, too, will be found to be carried out of reach more completely than it would be by an ordinary ovarian cyst of equal dimensions, and the tumor itself to reach lower down, nearer to the orifice of the vulva, since, it is not a mere swelling seated in the recto-vaginal pouch, but is formed in the substance of the septum itself, where the matter naturally gravitates lower and lower.

I do not know of any error which with moderate care can be committed as to the nature of these swellings, except in the rare cases of extravasation of blood into the cellular tissue behind the uterus, *uterine hæmatocele*, as it has been called; and in them the tumor very closely resembles that produced by suppuration in the same situation. The suddenness of the attack of uterine hæmatocele, its independence of delivery or abortion, and the general absence of thickening and hardening of the vaginal wall around the swelling, will, I should imagine, usually enable us to discriminate between them; while happily there is no serious practical error to which a mistaken diagnosis would give occasion.

It is scarcely necessary to trace the further *progress of these swellings*, except perhaps, to add two cautions: first, that the sense of fluid being contained within them is not infrequently deceptive, so far at least that it would seem to imply in many instances the existence of a state of general œdema of the cellular tissue, and not such a definite collection of matter as could be evacuated by the trocar; and, second, that even after the actual evacuation of pus, there is seldom that immediate and great diminution of the swelling which we might beforehand anticipate; but the thickening of the cellular tissue which remains behind is not only considerable, but is many months before it is entirely removed.

The symptoms of the disease, even after it is fully established, and after the formation of a distinct tumor has taken place, are not in general of a very definite character. The patient's condition is one of weakness, illness, feverishness, with evening exacerbations, restless nights, and morning remissions, rather than one either of very great local suffering or very urgent constitutional disturbance, though when the affection has lasted very long, and is telling severely on the patient's powers, diarrhœa not infrequently comes on, and the fever assumes a marked hectic character. The local suffering varies much, according to the part which is chiefly affected; the sense of bearing down being most distressing when the recto-vaginal tissue is involved, and the frequent need of micturition most troublesome when the tissue between the uterus and bladder is the seat of inflammation. In all instances, however, the bladder sympathizes more or less with the inflammation in its vicinity, and some degree of dysuria and over-frequent micturition are symptoms scarcely ever absent. While in all cases, be the exact seat of the mischief what it may, there is more or less pain referred to the pelvis, more or less tenderness on pressure upon the abdomen, the amount of severe suffering varies

very considerably, and varies, too, without any very obvious cause. A dull pain, a sense of weight, and a burning sensation seem to be constant, while very severe suffering is often produced by the attempt to stand, or even to sit up. Sometimes, too, independent of any exciting cause, paroxysms of pain occur, of extreme violence, which last for an hour or two, and then subside, returning the next day, or sooner, being equally violent, and passing off again of their own accord. The severest suffering generally takes place before the presence of matter in the swelling has become distinct, while afterwards, during the long period which often elapses previous to the contents of the abscess finding an outlet, though the constitutional disorder may become more serious, the local pain generally abates. With the escape of the matter the relief obtained is usually far more decided, though this seldom occurs in a sudden gush, so as to give instant ease, but the aperture of communication with the abscess being very small, the matter for the most part escapes only in small quantities; or being poured out into the rectum, collects there till a few ounces have accumulated, and are expelled during some effort at defecation; while for days or weeks afterwards pus is intermingled with the fæces, or a small discharge of it precedes their passage. In cases where the cellular tissue between the folds of the broad ligament is the seat of the inflammation, as well as in those where the tissue behind the uterus is affected, the escape of the matter generally takes place through the rectum; very rarely indeed through the vagina. The aperture of communication with the bowels is usually low down, though above the internal sphincter, and though commonly too minute to be detected, its situation may be guessed with tolerable accuracy, as the finger discovers some spot in the swelling where its parietes are soft and yielding. Once an iliac abscess on the left side, in which fluctuation was distinctly perceptible, while the redness of the abdominal integuments, and their firm connection with the swelling, led one to expect that it would discharge itself externally, burst into the intestine, and the communication was free enough to allow of the entrance of air into the sac of the abscess, in which situation crepitation continued for days to be distinctly felt. In the meantime suppuration went on in the tissue beneath the abdominal muscles, and a distinct abscess formed there, which was afterwards evacuated by the knife. Twice also I saw an abscess discharge itself through the bladder, though this occurrence was not final in either case; for in the one an abscess formed externally, and in the other it burst likewise into the intestinal canal, and the patient suffered for several weeks from diarrhœa, with discharge of pus per anum. In these cases, however, and also in others in which after an abscess has pointed or has actually burst in one situation, matter afterwards makes its escape in another, it is, I think, very doubtful whether both discharges took place from the same source, or whether there have not been two distinct abscesses perfectly independent of each other, and one anterior to the other in the date of its formation. The disposition of this

affection not simply to extend by direct continuity of tissue, but also to attack similar structures even when not immediately connected, is a feature of the complaint to which reference has already been made, and one which adds much to its gravity, and imposes on us the necessity of watching our patients most sedulously for a long time after they have seemed to be fairly in the way to convalescence.

The gradual progress of the patient towards recovery during the continuance of discharge from the abscess, and the slow processes by which the thickening and induration of the affected parts are by degrees removed, are unattended by symptoms calling for special description. Their history is one of a convalescence as irksomely slow in some instances, as in other cases where the mischief having been seen and understood, and appropriate treatment having been early adopted, it is surprisingly rapid. The disposition to relapse, too, to the reproduction of fresh mischief in its old seat, or to the kindling of inflammation in some part previously unaffected, is never to be lost sight of, both as governing our prognosis and as regulating our treatment.

LECTURE XXIII.

DISEASES OF PARTS CONNECTED WITH THE UTERUS—INFLAMMATION AND ITS RESULTS, AND KINDRED PROCESSES.

Inflammation of Uterine Appendages: of the Cellular Tissue.
Exceptional cases, consequent on peritonitis without special uterine disorder; important, but apt to be overlooked.
Treatment in recent stage, care during convalescence. In chronic stage; question of puncture, delay generally advisable; treatment of sequelæ.
Hemorrhage about Uterus, or Uterine Hæmatocele. Seat and causes of extravasation of blood. Symptoms and course, changes in the effused blood; cases in illustration. Diagnosis; from extra-uterine pregnancy, from retroversion of the uterus, from pelvic abscess, from ovarian tumor, and from fibrous tumor of the uterus. Prognosis and causes of death.
Treatment; comparative merits of interference and expectancy.

In all the cases of inflammation of the cellular tissue in the vicinity of the uterus which engaged our attention in the last lecture, the disease was spoken of as succeeding to delivery or miscarriage. In such cases the disorder of the puerperal processes by which it is accompanied usually gives to the attentive observer early notice of its occurrence. The *affection* may, however, come on quite *independently of puerperal causes*, and may sometimes, though I believe rarely, be wholly unconnected with any previous disorder of the uterus, or with any previous disturbance of its functions.

In cases of this last description, the local ailment seems usually to develop itself out of the symptoms of a general peritonitis of no very great severity, which, though relieved by treatment, have

not altogether disappeared, but have become limited in extent, and have been referred to the uterus and the pelvic region, where a careful examination discovers just the same changes to have taken place as succeed to inflammation in the puerperal state.

A woman aged thirty-nine, married twenty-one years, thrice pregnant, her youngest child being eleven years old, was attacked, while following her occupation at a mangle, by sickness, retching, and pain in the abdomen, severest at its lowest part. She kept her bed for a week, then attended at the out-patient room of the hospital for ten days, during which time leeches were applied to the abdomen; and being afterwards admitted as an in-patient, she was further depleted, and subjected to a mercurial treatment, by which her mouth was made slightly sore. Her severer symptoms were relieved by these means, but as she was not cured she was transferred to my care at the end of ten days more, or just a month from the commencement of her illness. At this time she complained of very severe pain at the lower part of her abdomen, extending to her back, and increased in paroxysms that came on causelessly; as well as of constant sickness after taking any food or drink, and of troublesome diarrhœa. Her abdomen was distended and generally tympanitic, but percussion yielded a dull sound in the right iliac region, though there was no distinct tumor to be there discovered. The uterus was found on a vaginal examination carried forward, and to the right side, by a tumor of stony hardness, smooth surface, and globular form, extending from near the left sacro-iliac synchondrosis, pushing the rectum before it and to one side, and occupying a great part of the pelvic brim. Tenesmus and pain accompanying the frequent efforts at defecation were for a time very distressing, but the appearance of pus in the evacuations, and its occasional discharge by the bowel unmixed with fæces, were followed at the end of a week by much relief. At the end of six weeks the patient left the hospital, the tumor being much diminished, and the uterus having returned more nearly to its natural position, though being still firmly fixed in the pelvis, as indeed it continued thirteen months afterwards.

In this case the opportunity was afforded of watching the evil while still in progress, but accident sometimes brings cases before us where, though the mischief already done is extensive, we can gather but little information as to the circumstances in which it originated. Inquiry may perhaps elicit a vague history of fever, or of an illness accompanied by disorder of the bowels, or by abdominal pain, but unattended as far as the patient knows by uterine ailment; and yet the womb may be firmly fixed in the pelvis, and thickening of the adjacent parts may plainly show that at some distant period the cellular tissue in its vicinity had been the seat of serious inflammation. In such cases there is no reason for doubting our patient's veracity; the symptoms of the slighter ailment were masked by those of the more grave disease, or perhaps were really by no means urgent in their character, and were regarded as only the ordinary discomforts of a tedious convales-

cence. They are of great practical importance, as illustrations of the necessity for watching very carefully the convalescence of patients who have been the subject of any illness in the course of which abdominal inflammation may by possibility occur. The mischief may perhaps not entirely pass away, but with a few signs to betray its existence, may become limited to parts within the pelvis. It may then be confined to the peritoneal surface of the viscera, matting the different organs together by firm adhesions, which interfere with the elevation of the uterus out of the pelvic cavity, and thus in the event of pregnancy occurring give occasion to its premature termination, though absolute sterility is by no means an infrequent consequence of the attack. Or, instead of being limited to the peritoneum, the inflammation may chiefly affect the cellular tissue in the vicinity of the uterus, and may issue in suppuration, or in deposit and permanent thickening, which may remain long after the acute disease is over, sometimes even after the memory of it has almost passed away. It behooves us then to bear these risks in mind, not to take the decline of the symptoms in such cases as a certain pledge of their complete disappearance; but so long as there is any pain or discomfort referred to the lower part of the abdomen or the neighborhood of the uterus, to have our suspicions alive to the possible occurrence either of circumscribed peritonitis, or of inflammation of the cellular tissue connected with the womb or its appendages.

In considering the *treatment* of this affection, we must bear in mind the difference between the results likely to be obtained before suppuration has taken place and after it has occurred. In the former case, a few days will suffice for the complete removal of all traces of disease; in the latter, weeks or months will often issue in but a very incomplete recovery. Whether treated in its acute or in its chronic stage, indeed, our prognosis may almost always be favorable as far as the life of the patient is concerned. When the disease, however, is of long standing, it is idle to attempt any reply to inquiries as to the probable duration of the patient's illness, or as to the time that must elapse before the pelvic organs return to their previous state, and to the regular performance of their wonted functions.

It is not a heroic plan of treatment, however, which is necessary when we see the disease at its onset, in order to cut short its further progress. A dozen leeches applied to whichever iliac region is the seat of pain; a warm poultice frequently renewed, and continued for thirty-six or forty-eight hours, a gentle aperient, some mild febrifuge medicine, and opiates to subdue pain, and to insure for the patient quiet rest at night, with a generally mild and unstimulating diet, are the simple, and as I believe, the fully sufficient means by which the symptoms may be combated. Should the pain and tenderness not be removed by the first depletion, half a dozen leeches ought to be reapplied within the next twenty-four hours; but the frequent abstraction of blood is undesirable. The tenderness and pain which sometimes remain even after blood has

been drawn to as great an extent as seems expedient, and which are often accompanied by considerable fulness of the affected side, are generally much relieved, often altogether removed, by the application of an ointment composed of two drachms of extract of belladonna and six drachms of mercurial ointment, which may be thickly spread on lint, covered with oiled silk, and renewed every twenty-four hours. The relief, too, is obtained quite independently of the production of any specific mercurial influence on the system. If, in addition to the pain at one or the other side of the abdomen there should be difficulty in micturition, or tenesmus, or bearing down, or much pelvic pain or discomfort, it is probable that a vaginal examination will discover the mischief not to be limited to the uterine appendages, but to involve the cellular tissue between the uterus and rectum, or between that organ and the bladder. In this case the application of four or six leeches to the uterus itself, by means of the speculum, will often afford an amount of relief that would be vainly sought for by the employment of four times their number if put on externally.

After all general febrile disturbance has subsided, and when nothing remains but a little local pain and tenderness, and perhaps some stiffness in the limb of the affected side, the application of a small blister, so as scarcely to vesicate, will often yield great relief, and this may be repeated two or three times, at intervals of as many days; its situation being varied just sufficiently to obviate the production of a troublesome sore. In many instances, however, if the case is seen quite at the outset, the symptoms disappear at once after a single application of leeches, and our chief difficulty then consists in persuading our patient to submit to those restrictions, and to observe those precautions which may seem to her to be dictated by our over-carefulness rather than by the actual necessities of her case. The avoidance of fluctuations of temperature, and of premature exertion of any kind, is indeed a matter of the greatest possible importance during the whole period of convalescence. So long as there are any considerable remains of pain, or as there is much tenderness on pressure in the iliac region, or over the pubes, it is unsafe for the patient to leave her bed, or even to move much from the recumbent posture; for there is risk, not simply of a very slight cause producing an exacerbation of the inflammation at its original seat, but also, as has been already explained, of mischief attacking the opposite side. Now and then, too, phlegmasia dolens has come on under my observation in cases where all active symptoms had already passed away, and where no special cause could be assigned for its occurrence. Even after complete recovery, the return of menstruation, or even of the period at which the menses ought to occur, calls for fresh solicitude, and any recurrence of pain, or even of uneasiness, any rekindling of febrile disturbance, must be at once met by a repetition of local bleeding, and a renewal of former precautions and former treatment.

Unfortunately, in the great majority of cases, the evil, before it

attracts attention, or receives appropriate treatment, has advanced further, and there is not merely a general sense of fulness at one side of the abdomen where the patient complains of pain, but a distinct tumor is already perceptible on external or internal examination. In these circumstances a speedy recovery can no longer be anticipated, but something may still be done to prevent any abundant formation of matter, to favor the absorption of the sero-purulent fluid already poured out, and to bring about the resolution of the tumor. The application of leeches is as appropriate here as in the earlier stages of the complaint, though, as it will probably be expedient to repeat them several times, it is seldom desirable to apply more than six or eight at once. The warmth of the poultice is as grateful as at the outset of the affection, while, if the pain is very severe, the use of laudanum instead of water in mixing it will render it a very powerful local sedative, and its employment need not at all interfere with the use of the belladonna and mercurial ointment of which I spoke just now. I am not, however, accustomed, in cases which have already advanced to the formation of a definite tumor, to rely exclusively on the effects of depletion and of general hygienic measures, but usually give small doses of some mild mercurial preparation, and continue their use sufficiently long to produce slight soreness of the mouth. A five-grain pill, composed of equal parts of Dover's powder and gray powder, given twice a day, usually has this effect in a week or ten days, and thus employed it seems to have the twofold result of preventing the extension of mischief on the one hand, and of promoting the absorption of the products of inflammation on the other. If the symptoms are urgent, I sometimes give the pill every six hours, but am not in the practice of giving calomel, nor even of persevering with the more frequent doses of gray powder, if they should appear to irritate the bowels. As in most local inflammations, the night is usually the time of the greatest suffering, and an anodyne is generally needed towards evening; camphor in five-grain doses being a very useful addition to any opiate which may be employed.

It is seldom that any rigorously antiphlogistic plan is suitable in this stage of the affection. Good beef-tea is indispensable, wine and tonics are generally needed; I think I may say always when any even vague sense of fluctuation shows that matter in some considerable quantity is already present. A disposition to irritability of the bowels frequently contraindicates the use of quinine, and I therefore generally prefer the liquor cinchonæ, as being free from any of those objections which may be alleged against most other preparations of bark.

Slowly, almost imperceptibly, in proportion as the symptoms of constitutional disorder abate, the swelling itself in some instances diminishes in size, till at length an indistinct thickening is all that is left behind. But still this is a more favorable issue than we often meet with, or than we can ever venture to count upon, where a distinct tumor has formed. Often, though some abatement of

the general symptoms takes place, the tumor enlarges, becomes tenser, and feels more elastic; a vague sense of deepseated fluctuation is communicated to the finger, and may continue for weeks without growing more perceptible, till at length the abscess begins to discharge itself through one or other of the channels which were described in the last Lecture. The question now naturally suggests itself, whether, when suppuration has once occurred, we cannot expedite the escape of the matter, and thereby hasten the recovery of the patient? I believe that as a general rule it is safer to leave the emptying of the abscess entirely to nature, rather than to attempt the evacuation of its contents by puncture; those cases always excepted in which the inflammation has attacked the cellular tissue external to the peritoneum, where the abscess consequently points in the abdominal wall.[1] In those cases the very tardy advance of the matter towards the surface may sometimes be accelerated by the application of a blister; for even here it is not expedient to make an incision so long as any considerable thickness of parts intervenes. In the far more frequent instances in which the seat of the mischief is within the pelvic cavity, the pus tends to escape either per vaginam or per rectum, and the attempt to anticipate by puncture the exact course which it may take is very frequently unsuccessful, and not always safe; while the danger of the rupture of the purulent collection into the peritoneal cavity is by no means so done away with by the existence of a counter-opening as might be supposed; and my own observation of the occurrence of this accident, where a free communication existed with the vagina, is far from being a solitary case. The natural relation of parts is much changed by the effects of the inflammation; the swelling and tension of the vaginal walls extend far beyond the limits which circumscribe any actual collection of matter, and it is very likely that the trocar may be merely thrust through hardened textures, and though passing very near to the collection of matter, may entirely fail to enter it. The extent and relations of the tumor can be most accurately determined, and puncture can consequently be most safely performed, when the cellular tissue between the vagina and rectum has been the seat of the inflammation; and a Pouteau's trocar introduced by the vagina will generally reach the matter, if the indications of its presence have been distinct. In one case, where inflammation of the cellu-

[1] There are few points of practice concerning which there is so general an agreement as this of the inexpediency of early puncture of these collections of matter. Bernutz, *op. cit.*, p. 434–6, accepts the principle; Aran, *op. cit.*, p. 740, insists on it more strongly, and observes, "There is no evidence of the possibility of preventing, by the artificial opening of these purulent collections, the formation of spontaneous openings in other situations, and especially into the peritoneal cavity. There are, on the contrary, many observations on record of the occurrence of these perforations, sometimes on the very day, sometimes several days after the puncture of the abscess." Becquerel, *Traité des Maladies de l'Uterus*, 8vo., Paris, 1859, vol i, p. 464, expresses the same opinion still more decidedly, and lays down the rule that "the abscess is never to be opened, even though its apparent pointing in one situation should seem to invite interference."

lar tissue between the uterus and bladder had issued in suppuration, the escape of ten ounces of pus on puncture being made proved the expediency of the interference. In a few days, however, the vaginal tumor had reacquired almost its former size; the puncture was repeated, but no pus followed, for the trocar had at once entered the bladder through the firm and œdematous vaginal wall; an accident which fortunately was not followed by any bad consequences. The previous introduction of a silver catheter into the bladder in the one case, and examination made simultaneously with one finger in the rectum and the other in the vagina in the other case, will suffice to prevent a mistake which otherwise is more easily committed than might be supposed possible.

The management of the patient after the discharge of the contents of the abscess calls for no special rules. The chief difference indeed between those cases in which the discharge of pus takes place, and those in which it is either not secreted or is absorbed, consists in the greater degree of debility to which in the former circumstances the patient is reduced; a debility which is often extreme if the suppuration has been extensive, or if the discharge of pus is of long continuance. Even then, however, and in spite of well-marked hectic fever, and of sweats alternating with colliquative diarrhœa, by which, and by the exhaustion produced by continued suffering, life seems sometimes to be seriously threatened, the disease terminated fatally only in three out of the fifty-nine patients on whom these remarks are founded.

With reference to the thickening left behind after the cessation of all active inflammation, I do not think that we can do much more than trust to time for its gradual, often indeed for its partial removal. Blisters, indeed, occasionally applied in the iliac region do something to relieve the pain and uncomfortable sensations which may long outlast the other symptoms; and they may, perhaps, somewhat accelerate the removal of thickening in the substance of the broad ligament. I have little faith, however, in the external application of iodine, or in its introduction as an ointment into the vagina; nor do I think that the subjecting a patient to a course of mercurial remedies, or of preparations of iodine, is likely to effect any local good at all equivalent to the impairment of the constitutional powers which such remedies can scarcely fail to produce.

Within the past fifteen years attention has been called, chiefly by French writers,[1] to cases in which *tumors have been formed by*

[1] Cases of pelvic tumor, giving issue not to matter but to more or less altered blood, are scattered here and there through our medical records, and some of them may be found referred to by M. Huguier, in a lecture on uterine hæmatocele, which he gave before the Surgical Society of Paris, on May 28, 1851. As early as 1843, M. Velpeau, at p. 125 of his *Recherches sur les Cavités Closes*, gave an account of an instance in which he evacuated the sanguineous contents of one of these swellings, and afterwards injected a solution of iodine into its cavity. He seems, too, to have entertained a correct idea as to the nature of the affection; but the mistake into which M. Malgaigne fell in the year 1850, who, thinking to enucleate a fibrous tumor of the posterior uterine wall, opened one of these collections of blood behind

the effusion of blood in the immediate vicinity of the uterus. The name of *uterine, retro-uterine, or peri-uterine hæmatocele* has been employed to designate these effusions which take place usually into the cul-de-sac between the uterus and rectum, and are generally consequent on some disorder of the menstrual function, often on its temporary suppression.

The source and seat of the hemorrhage in these cases have been a subject of much difference of opinion, and while some writers

the womb (an operation which was followed by fatal hemorrhage), shows that the subject, even down to this time, had attracted very little attention.

In the year 1851 M. Nélaton gave some lectures on the subject of *uterine*, or, as he termed it from its usual situation, *retro-uterine hæmatocele*, which were published in the *Gazette des Hôpitaux*, Dec. 11 and 13, 1851. In them he refers to 15 cases,—namely, 6 of his own, 2 reported by Bourdon as occurring in the practice of M. Rêcamier, 1 reported by M. Laugier, in vol. v of the *Dictionnaire en 30 volumes*, 2 cases which Nélaton saw in the practice of M. Beau, 1, Malgaigne's unfortunate case, 1 of M. Dufraigne, 1 of M. Latis, 1 of M. Huguier. He has since recorded another case in the *Moniteur des Hôpitaux*, August 23, 1856, and has made additional remarks on the affection in the *Gazette des Hôpitaux*, 1855, No. 23, in which he advocates an expectant mode of treatment. Other cases are recorded by M. Gallard, *Union Médicale*, 1855, and *Gazette Hebdomadaire*, Oct. 9, 1857; Laborderie, *Gazette des Hôpitaux*, 1854, No. 149; Bernutz, *Archives de Médecine*, June, 1848, p. 133; Piogey, *Bull. de la Société Anatomique*, 1850, p. 91; Robert, *Bull. de la Société de Chirurgie*, May 22, 1851, p. 136, and *Gazette des Hôpitaux*, May 5, 1855, p. 204; Follin, *Gazette des Hôpitaux*, 1855, June 5, p. 260; Laborderie, *ibid.*, 1854, No. 149; Monod, *Bull. de la Société de Chirurgie*, June 4, 1851, p 154; and Marotte, *ibid.*, p. 152; and Engelhard, *Archives de Médecine*, June 1857. There is besides much valuable information to be gathered from the discussion on the subject which took place in the *Société de Chirurgie*, May 14, 21, and June 4, 1851, and which is reported at pp. 132, 154 and 151 of the *Bulletin*, and in the inaugural thesis of M. Viguès, *Des Tumeurs Sanguines de l'Excavation Pelvienne chèz la Femme*, 4to., Paris, 1850, with which, however, I am acquainted only through an abstract in Schmidt's *Jahrbücher*. Besides these communications, all of which are of a directly practical character, one of a theoretical kind was addressed by M. Laugier to the Académie des Sciences, and is published at p. 455 of vol. xl of the *Comptes Rendus*. Its object is to connect the occurrence of these effusions with the escape of the ovule at or about the menstrual period. These historical details are rendered almost superfluous since the publication of the works of MM. Becquerel, Aran, and Nonat, in all of which full notice is taken of this affection. M. Voisin, in an expansion of his inaugural thesis, has published, under the title *De l'Hématocèle Rétro-Uterine*, 8vo., Paris, 1860, an essay which embodies to a great degree the opinions of M. Nélaton; and M. Bernutz, whose claims to priority in recognition of this affection I cannot, however, admit, has treated the subject with his usual elaborate detail in the first volume of his work on *Diseases of Women*.

In Germany these effusions of blood have been less carefully studied than in France. Scanzoni's description is avowedly drawn from French sources, and he expresses his opinion that the frequency of the affection has been much overestimated. Some notice of it is taken by Crédé, *Monatschrift f. Geburtskunde*, vol. ix, p. 1; Breslau, *ibid.*, p. 455; Hirtzfelder, *ibid.*, vol. x, p. 312; and *Hegar*, vol. xvii, p. 418, as well as by Braun of Vienna, whose paper, however, I know only indirectly. Virchow, in his new work, *Die Krankhaften Geschwülste*, 8vo., Berlin, 1863, has also studied its morbid anatomy.

Dr. Tilt is the first English writer who noticed the affection, in the second edition of his work on *Diseases of Women*, p. 261. Since then it has received due attention in this country; the lectures of Dr. Simpson, and the treatises of Dr. McClintock and Dr. Graily Hewitt, containing notices of it; while the interesting case published by Dr. Madge, in vol. iii of the *Transactions of the Obstetrical Society*, and the very valuable paper of Dr. Matthews Duncan in the *Edinburgh Medical Journal*, Nov., 1862, must not be passed unnoticed, any more than the able thesis of Dr. Tuckwell, of Oxford, *On Effusion of Blood in the Neighborhood of the Uterus*, 8vo., Oxford, 1863.

have believed that the bleeding may take place alike into the peritoneal cavity, or into the cellular tissue around the uterus, or lining the pelvis, others are disposed to believe that the blood invariably occupies the cavity of the peritoneum. The weight of evidence is decidedly in favor of the latter view, which is that taken by Virchow, as well as by Bernutz and Aran, and I do not know of any post-mortem examination made with due care in which the seat of the effusion has been clearly proved to be extra-peritoneal. The blood seems to be poured out, in the great majority of instances, either from the rupture of the congested ovary itself, or else from the fimbriated extremity of the Fallopian tube of one or other side, whence it gravitates into the retro-uterine pouch, and forms there a distinct tumor, which pushes the uterus forwards and somewhat upwards. A few cases are on record where the blood has been thus poured out in such quantity as to destroy the patient almost at once; and though some of these have been instances of extra-uterine fœtation and of the rupture of the Fallopian tube, yet this explanation does not hold good of all; and suddenly fatal bleeding from the uterine appendages into the peritoneum must be admitted as a possible occurrence in the unimpregnated condition. Any hemorrhage so profuse as at once to destroy life is indeed quite an exceptional occurrence, and usually the blood poured out speedily coagulates. It then excites inflammation around it, and becomes inclosed within a sac formed partly by the adhesion of the coils of intestine to the uterine appendages, and to each other, partly by false membrane. Within the sac thus formed the same changes now take place as occur in blood effused elsewhere. In the most favorable cases it becomes by degrees absorbed, in others inflammation is set up (usually consequent on some increase of local congestion, and fresh outpouring of blood) in the cyst wall; pus becomes intermingled with the blood, and instead of absorption of its contents taking place, the suppurating blood-cyst empties itself through the rectum, the vagina, or unhappily sometimes into the peritoneal cavity.

The source of the bleeding in the uterine appendages themselves is sometimes very obvious, as in one instance where both Fallopian tubes were found distended with blood, and a partially decolorized clot hanging from the extremity of one of them. In other cases a distinct rupture of the ovary has been observed, and the congested or even apoplectic condition of its tissue has left no doubt as to the origin of the bleeding. In other instances again, where a longer interval had passed since the first occurrence of hemorrhage, its source was not so clear; but the grave alterations which the uterine appendages presented, or the absolute impossibility of discovering the ovary or Fallopian tube of one side, showed plainly that in them the evil had originated. Thus, in one case where I made the post-mortem examination of a patient in whom for a year symptoms of uterine hæmatocele had existed, one ovary could not be discovered even after the most careful search, while the other, in addition to a serous cyst of the size of a pullet's egg,

presented an extravasation of blood into its substance as large as a sugared almond. The bleeding then takes place from the ovary itself or from the tube; and now and then perhaps in this latter case from the reflux of blood to whose outflow from the uterus some impediment existed, though usually from the congested lining of the tubes themselves.

Blood poured out from other sources may indeed collect in the neighborhood of the uterus, in obedience to the mere laws of gravity, but it would, I think, be an error to call such exceptional occurrences cases of uterine hæmatocele. One theory of the source of these hemorrhages must, however, be noticed, if for no other reason, at least on account of the reputation of its author. It is that of Virchow,[1] who says,—"In my opinion the blood in these cases is usually derived almost or altogether from the newly formed vessels of false membranes produced by previous pelvic peritonitis." Even Virchow's theories ought to have some clear evidence to rest on. I know of none that would prove pelvic peritonitis to be an ordinary precursor of uterine hæmatocele.

We learn, then, from these observations the existence of a previously unknown hazard attendant on disorders of the sexual system in women; that not merely may intense congestion lead to profuse and dangerous floodings, or functional disturbance issue in inflammation of parts in the vicinity of the uterus, but also that vessels may give way, and hemorrhage take place inwardly, in situations where it is hard to discover, and still harder to suppress. As might be expected, the accident is one which takes place only during the period of sexual vigor,[2] it having occurred in 79 women at the following ages:

	Under 20	in	4
Between 20 and	30	"	51
" 30 "	35	"	17
" 35 "	40	"	6
At	40	"	1
			79

Cases have not at present been recorded in sufficient number to prove the comparative influence of marriage and childbearing on the production of the affection. It seems, however, to stand but rarely in any direct relation to pregnancy or miscarriage; while the fact that it has sometimes been induced by sexual excesses is but another illustration of the connection subsisting between congestion of the pelvic organs and the outpouring of blood in the neighborhood of the womb. The time of the occurrence of such special congestion at the return of a menstrual period is allowed by all writers to furnish the most frequent occasion for the effusion of blood; and though there is an absence of unanimity as to whether habitual menorrhagia or habitual dysmenorrhea most

[1] *Die Krankhaften Geschwülste*, 8vo., Berlin, 1863, vol. i, p. 152.
[2] See the tables appended to Dr. Tuckwell's thesis.

frequently precedes it, yet menstrual irregularity of some kind or other will be found to characterize the history of the greater number of patients. The liability to menstrual disturbance in the way either of excess or of defect indicates usually something wrong in the state of the general health; and just as occasional attacks of menorrhagia may occur in the chlorotic girl, so may the outpouring of blood into the peritoneal cavity be in a measure due to constitutional causes. The profuse, and sometimes even fatal hemorrhage, from the vulva or into the peritoneum, which has been known to occur in some cases of purpura and of the eruptive fevers, is but an exaggerated illustration of this fact; and my own experience by no means leads me to the conclusion that the women most liable to these accidents are the healthy and robust.[1]

Be the circumstances in which these hemorrhages occur what they may, there is usually a certain family likeness among the cases that will enable the attentive observer to recognize their nature, or, at any rate, will excite his suspicions with reference to it. After some disorder of the menstrual function—sometimes after its temporary suppression from cold, fatigue, or moral shock—severe abdominal pain comes on, referred usually to one or other iliac region. It is by no means constant for the menses to remain suppressed after the occurrence of this pain, which no doubt marks the outpouring of blood into the peritoneum; but usually they continue, though probably more scantily than in health; while now and then a profuse loss of blood takes place from the vagina, in spite of the evidence of internal hemorrhage. The pain, though severe, is seldom intense, nor is the shock which accompanies it at all comparable to that extreme depression which indicates the occurrence of intestinal perforation, or the rupture of the sac of an extra-uterine fœtation. I cannot say how soon after the shock and pain a swelling is commonly perceptible in the abdomen, nor what proportion is borne to the other cases by those in which the swelling is entirely absent, though without doubt the latter are quite the minority. I have detected the swelling within 48 hours after the first symptom, as a vaguely defined hard lump in the iliac region, apparently of the bigness of the fist, not quite even, not movable, tender on pressure, and feeling so similar to the swelling which is felt in cases of inflammation of the uterine appendages, that, apart from its history, one would be likely to make a mistake as to its real nature.

Pain, exacerbated at uncertain intervals, as is all pain associated with uterine ailment, tenderness limited to the neighborhood of the painful part, and general febrile disturbance, though usually not very severe, continue to be experienced, accompanied with difficult micturition, with pain and difficulty in defecation, and generally with an increased pain on moving the leg of the affected side, or on attempting to assume the sitting posture. The febrile symptoms usually subside of their own accord, the pain also dimin-

[1] See Bernutz, *op. cit.*, vol. i, p. 441–460.

ishes, a sense of weight in the pelvis, bearing down, difficult micturition and defecation remaining behind, with difficulty and discomfort in walking, and lead by the discomfort which they occasion to a vaginal examination, and to the discovery of the pelvic tumor.

This pelvic tumor differs much in its size, situation, and character; and in some cases where the symptoms point unequivocally to the existence of hæmatocele, no bulging of the vaginal wall has been present.[1] For this occasional absence of the pelvic tumor I do not know how to account, though I think it is most frequent when the effusion has been extensive. The fact at any rate is of much importance to be borne in mind, in order to avoid the errors in diagnosis which we should fall into if we regarded pelvic tumor as an invariable attendant on these hemorrhages. Usually, indeed, the pelvic tumor is present, and closely resembles that observed in cases of inflammation of the uterine appendages. It is equally firm, seems to be equally intimately connected with the uterus, and has the same globular form, differing perhaps chiefly in this, that it produces a greater degree of displacement of the womb than is observed in a tumor of equal size due to inflammation in the vicinity of the organ. This circumstance is, I think, readily explicable by the rapidity with which blood is effused, as compared with the greater slowness with which the changes take place that are due to inflammatory action, and by which, moreover, the womb becomes fixed in its position, and therefore less liable to displacement. The changes that take place in the tumor do not seem to be governed by any unvarying law. It often becomes extremely firm, owing no doubt to the removal of the more fluid part of the blood, and it is in consequence of this change that a blood-swelling has occasionally been mistaken for a fibrous tumor. The supposed solid tumor, however, will be observed, if carefully watched, to diminish by degrees, and at length to disappear, leaving behind only a little thickening and resistance at the roof of the vagina; and if, as is commonly the case, a swelling also existed in the iliac region, that, too, will diminish at the same rate with the one felt per vaginam, or will even be removed with still greater rapidity. In other instances, the tumor having shrunk from the dimensions which it presented at first, will once more suddenly increase, such increase coinciding with a more or less distinct menstrual effort, often with actual menstruation; and in a doubtful case there is nothing more characteristic of its true nature than the sudden increase of the swelling coinciding with a menstrual period.

The gradual absorption of the blood, and the disappearance of the tumor as the patient becomes convalescent, is yet only one mode, and that by no means the most common, in which this

[1] As in case 1, in Dr. Duncan's paper. I recollect two cases which came under my own observation, and which I now believe to have been cases of uterine hæmatocele, where the absence of any swelling in the vagina confused me, and prevented my forming a satisfactory diagnosis. I think that now, with larger experience, I should read them rightly.

accident terminates. Of eight cases of which I have preserved a record, there was but one in which the tumor was removed by a process of simple absorption; and in this instance the swelling was limited to the right iliac region, and produced no bulging of the vaginal wall. In two cases a discharge of blood, partly fluid, partly coagulated, took place from the rectum; in a fourth, suppuration preceded its discharge, and blood-stained pus escaped by the rectum; and in a fifth, the sac burst into the peritoneum, and the patient died. In the three remaining cases the tumor was punctured by the vagina; and in the last of them the ailment was already chronic, and the blood-cyst had become an abscess long before the patient came under my care.

It may be worth while to narrate briefly the particulars of these cases, since in the various circumstances in which they supervened, and in the varying courses they ran, they may serve to illustrate more completely the history of this affection. In all the cases but one the patients were married women, of whom three were sterile; four had given birth to children. This exceptional case was that of a young unmarried woman, aged twenty-two, who, having long suffered from attacks of pain of a paroxysmal character in the left iliac region, was surprised at the age of nineteen by a profuse discharge of a dirty reddish-brown color from the vagina, which continued in varying quantity for many weeks, and was then succeeded by a puriform discharge, occurring in gushes, which continued down to the time of her coming under my care. A tumor in the iliac region, and another felt behind the uterus, fixing that organ in its place, were the evidences of some bygone inflammation—of an old pelvic abscess, in short, the origin of which in an effusion of blood was rather inferred from the patient's previous history than actually demonstrated. Puncture of the abscess, and the injection of a solution of iodine into its cavity, were followed by its complete cure, and the patient afterwards married, though she never became pregnant. The second case was likewise one in which the evil terminated in suppuration; but the symptoms ran a more acute course, and there was no re-collection of the matter after its spontaneous discharge by the bowel. The patient was a woman aged thirty-four, who, though married for fourteen years, had never become pregnant. For two years she had habitually menstruated profusely, and for two months the discharge had been actually menorrhagic. On the return of the third period, however, the loss was extremely scanty; she experienced severe pain in the back and legs, with tenderness and some difficulty in micturition. Scanty menstruation had still been going on for some days when the patient came under my care. There was then a distinct swelling in the left iliac region, with much thickening in the recto-vaginal pouch. In the course of fourteen days this thickening and fulness assumed the characters of a definite tumor, which increased in size, until at the end of six weeks it burst, and discharged per rectum a discolored pus, and a fortnight after the patient left the hospital well. The patient's previous

history, the character of her symptoms, and the discolored pus which escaped from the bowel, suffice, I think, to point to the origin of this pelvic abscess in a previous sanguineous effusion around the uterus. The third patient I saw but once, though I heard of her subsequent history; and I refer to it here because it illustrates the most favorable course which may be taken by these cases in their less severe forms. A lady who was between twenty and thirty years old, and had given birth to several children, caught cold during a menstrual period, and the discharge, though not suppressed, was immediately much lessened in quantity. Simultaneously with this diminution of the menstrual flow, she experienced considerable abdominal pain, aggravated in paroxysms; and at the end of three days a distinct swelling was discovered in her right iliac region. This swelling, when I saw the patient about four days from the commencement of her illness, was above, but in the direction of Poupart's ligament, of about the size of the fist, but of a more elongated form, not movable, tender, but not intensely so to the touch; and it was unassociated with uterine displacement, or with more than a vague sense of fulness at the roof of the vagina. Absolute rest, and an expectant plan of treatment, were followed by the complete disappearance of the swelling, and by the patient's restoration to perfect health. The fourth case is of special interest, on account of the development of the symptoms out of the sequelæ of an abortion, not out of the disturbance of a menstrual period. The patient, aged thirty-three, having miscarried at the sixth week, followed her occupation as a washerwoman without paying any attention to her condition, and this exertion was followed by great increase of the sanguineous discharge, which continued for twelve weeks. At the end of this time a vaginal examination detected a tumor behind the uterus, of the size of an apple. On being punctured it gave issue to a reddish-brown discharge, the continuance of which for three weeks was followed by the complete disappearance of the swelling. In the fifth patient, aged twenty-four, who for five years had lived in sterile marriage, the symptoms gradually developed themselves during the persistence for two months of a discharge supposed to be menstrual. Here, too, a tumor behind the womb gave issue when punctured to a black offensive discharge, which evidently consisted of decomposed blood; and the patient, having surmounted an attack of peritonitis, perfectly recovered. The sixth case so well illustrates the symptoms and the dangers of the affection, that it seems to me deserving of relation somewhat in detail.

A tall, stout, and tolerably healthy-looking woman, twenty-five years old, who had been married for seven years, had been pregnant four times, and had given birth to three living children, of whom the youngest was twelve months old, was admitted into St. Bartholomew's Hospital on February 22d, 1851. Her general health had been good, her labors had been natural, and after all of them she had menstruated regularly during the whole period of lactation. After her third labor matters went on as usual until

Christmas, when she menstruated naturally, but ever since that time a sanguineous discharge, neither very profuse nor intermingled with coagula, had been constantly present. For a month she had pain of a bearing-down character, aggravated by exertion, but not notably relieved by rest, nor by any particular position; and she had also for the same time suffered from occasional fainting fits. Micturition was frequent and painful, and her urine was reported to be both scanty and high-colored. A medical man whom she had consulted told her that "her womb was down."

The abdomen was large and somewhat tense, its enlargement being due to the presence of a tumor, the surface of which was slightly uneven, occupying the whole of the left side, extending three inches above the umbilicus, reaching about two inches across the mesial line, though gradually sloping downwards, so that on the right side its upper margin was an inch and a half below the umbilicus. The tumor was firm, non-fluctuating, very tender to the touch, especially in the left iliac region.

The finger on being introduced into the vagina came almost immediately on a somewhat firm, elastic tumor, of an oval shape, of about the thickness of the wrist, and which had pushed before it the posterior vaginal wall. This tumor seemed to pass over into the substance of the uterus about half an inch behind its orifice, the whole organ being so misplaced that the os uteri was felt lying horizontally immediately behind the symphysis pubis. The finger passed up in the front and right side of the pelvis without encountering any resistance; but at the left side and posterior part of the pelvis a firm tumor was felt apparently continuous with that immediately behind the uterus. The vessels of the tumor pulsated very forcibly.

About three ounces of a bloody fluid were drawn off on the tumor being punctured with a grooved needle through the vagina. The microscope discovered nothing but blood corpuscles in the fluid, and with the view of emptying the tumor if possible, and of thereby relieving the painful pressure on the rectum, which occasioned much distress, a Pouteau's trocar and canula were introduced, but only about four ounces of fluid of the same character as before were let out. The tumor was not thereby much diminished in size, nor was the patient's discomfort much alleviated. On February 27th no fresh interference having been resorted to, she was seized with peritonitis, during the course of which there was manifest increase of the tumor, which extended more towards the right side of her abdomen. By the 3d of March all active symptoms were subdued, and on that day the patient passed two copious evacuations, which were perfectly black, and apparently consisted entirely of altered blood. The same afternoon, too, she experienced a sensation as of something giving away internally, and this was immediately followed by an abundant gush from the vagina of very fetid fluid, resembling coffee-grounds in appearance. This fluid flowed at first very abundantly, afterwards more scantily till morning, when it ceased, though another gush of it

took place on the following day, and afterwards recurred occasionally for several days, acquiring by degrees a lighter color, and being at last a dirty sero-purulent matter. Very slowly the patient's general health improved, while at the same time her abdomen diminished in size, and having measured forty-six inches on her admission, had shrunk to forty inches on March 24th. The tumor in the left hypogastric region at the same time manifestly diminished in size and became more mesial in its position; and on April 5th the uterus had nearly regained its natural situation; there was no longer any distinct tumor behind it, but a hard, semicartilaginous thickening, ill-defined as to its extent and relations. On April 17th all discharge from the vagina finally ceased, and on May 5th all trace of abdominal tumor had completely disappeared, the position of the uterus was quite natural, the thickening behind it was much lessened. A year afterwards I again saw the woman; she was in perfect health, menstruating regularly; there was no trace of abdominal tumor, the uterus was perfectly movable, and there was scarcely any thickening to be felt behind it, or to its left side.

The seventh case is important, as well on other accounts as because the extreme firmness of the vaginal swelling raised the suspicion, more than once during the patient's illness, that it was due to a fibrous tumor connected with the posterior wall of the uterus. The patient was twenty-six years old, and had given birth to three children during seven years of married life. Four months before she came under my notice she was attacked during a menstrual period by pain in the abdomen accompanied by expulsive efforts of such severity that her medical attendant thought her about to miscarry. The pain by degrees subsided, and the menstrual flow was neither increased nor lessened; and the two succeeding periods were punctual in their return, though accompanied by an unusual amount of pain. Her third period was postponed for nearly three weeks, and for two days before the discharge appeared the patient suffered pain similar to that which she had before experienced, but more severe. The menses were on this occasion unusually scanty. Their flow was accompanied by an increase of pain, by sickness, and by so much difficulty in micturition, that it was necessary on more than one occasion, to have the catheter passed; and defecation also was attended by an increase of suffering. It was on the sixth day from the commencement of these symptoms that the patient came under my notice. The uterus was then carried forwards and to the right side by a swelling which occupied two-thirds of the posterior and left side of the pelvic cavity. The tumor was firm but elastic; its surface was smooth, its vessels did not pulsate, and there was no increased heat of the vagina. It was not until a week later that an abdominal swelling was detected, though it had been previously sought for; but possibly the intense abdominal tenderness interfered with that minute examination which was practicable so soon as it had subsided. This swelling was situated in the left

iliac region; it reached for about three fingers' breadth above Poupart's ligament, and from the pubis to the iliac spine; but its outline was indistinct. For the next fourteen days this abdominal swelling increased to nearly double its former size, and at the same time its upper border became much more distinct, but no change took place in the pelvic tumor other than that the elasticity which at first it had so distinctly presented became much less marked. Without any discharge having taken place, the abdominal tumor now began to lessen; the uterine lips and cervix, which, on the patient's admission into the hospital, were full and puffy, lost these characters completely, while the hardness of the tumor gave it a most deceptive resemblance to a fibrous tumor. A week afterwards, exactly thirty days from the patient's admission into the hospital, and thirty-six from the commencement of the attack, a discharge of blood took place from the rectum, partly fluid, partly in clots; and this recurred more than once. The abdominal tumor was found three days afterwards to have much diminished, and that in the pelvis to have altogether disappeared, the uterus having nearly resumed its natural position. Fourteen days later the patient left the hospital, a vague induration about Poupart's ligament indicating the former seat of the abdominal tumor, and a little thickening about the roof of the vagina and in the course of the broad ligament, interfering somewhat with the free mobility of the uterus.

The eighth and last case was one which I saw at intervals only with Dr. Kirby, of Gordon Square, to whom I am indebted for many particulars of her history. The patient was a lady thirty-two years old, who had been married nine years, had given birth to one child between seven and eight years before I saw her, but had never afterwards been pregnant. Her labor was followed for some time by irregular and excessive menstruation, which was at length suddenly checked by treatment. For several years afterwards menstruation became scanty, postponing, often absent altogether, and always associated with much pain and sickness. Not infrequently, too, the constitutional disorder continued unaccompanied by menstruation, and at last relieved by vomiting of blood. Gradually the more urgent symptoms subsided, but for some two or three years before the commencement of her fatal illness, she had much dysmenorrhœa, ovarian tenderness, and uterine pain, though there was no change discoverable on a vaginal examination. On October 19, 1862, a menstrual period came on which was very abundant and protracted, the discharge being intermingled with small coagula and matter like dysmenorrhœal membrane. On the return of the next menstrual epoch, though discharge had not commenced, the patient suddenly complained of a sense of fulness and bearing down, of faintness, and of inability to empty the bladder, and a tumor was now discovered in the right iliac and hypogastric region, and the uterus was carried forwards by a swelling seated between it and the rectum. Both these tumors continued, varying indeed in size, and in the tender-

ness of which they were the seat, and the abdominal tumor was sometimes difficultly distinguished, though that felt per vaginam underwent much less considerable alteration. The patient suffered from frequent and severe attacks of paroxysmal pain, and this pain always accompanied menstruation, the periods of which were tolerably regular. Pain in the tumor, too, interfered with any attempt at moving, and sleep was seldom obtained without the use of opiates. In April, 1863, about five months after the commencement of her illness, the patient began to have frequent attacks of shivering, with rapid pulse, night sweats, and other hectic symptoms, under which her health failed, though very gradually, and temporary improvement took place now and then.

The swelling in the abdomen did not notably increase, but remained about half the size which it had first presented, while the internal tumor underwent no alteration, and though not absolutely solid, yet yielded nowhere any sense of fluctuation.

It was at length determined, after the lapse of eight months, that an exploratory puncture should be made with a fine trocar, and that this should be enlarged if, as there seemed no reason for doubting, the collection of blood or matter were reached. This was accordingly done by Mr. Paget; but though to his own sensation as well as to the bystanders, the trocar seemed to have entered a cavity, nothing flowed but a drop of blood. A good deal of constitutional disturbance, much sickness, some abdominal tenderness, but no severe pain, succeeded this puncture, which was made on July 11th. The patient's pulse, too, became very frequent, and her condition altogether, though not such as to indicate immediate danger, excited much anxiety, as it seemed to point to the existence of cyst inflammation. In the morning of July 20th, the above-named symptoms having lasted without marked aggravation, the patient made an attempt to void urine, but finding herself unable to empty her bladder, sent for Dr. Kirby, who found her in a state of collapse, and she died at four P.M. on the same afternoon, having manifested all those symptoms which usually follow the perforation of any important viscus.

The abdomen was found to contain a turbid, brownish fluid, a mixture of thin pus and blood, which had issued from the pelvic cavity and flowed among the intestines. There was a general fulness of vessels of both surfaces of the peritoneum, and of the surface of the intestines, and a little lymph thinly deposited here and there, evidently of comparatively recent formation. Besides this, below the umbilicus, and especially in the left iliac region, there was a good deal of roughening of the peritoneum as if from old peritonitis, and there were many small blackened spots, old ecchymoses, on the roughened surface. The pelvic contents were bounded above by a coil of intestines which was adherent to the upper surface of the pelvic viscera, and thus formed a kind of cyst or sac, in the left side of which there was a small triangular rent about half an inch in length, through which its contents had escaped into the abdomen. This sac, which was bounded by the

left side of the uterus, still contained about eight ounces of brown pus, such as was found in the abdomen. The reason of its non-escape on the puncture being made per vaginam was discovered in the presence of a layer of extremely firm black clot an eighth of an inch in thickness, which lined the lower half of the sac, and was almost as firm as a piece of leather, so that the point of the trocar had failed to penetrate it, but had detached it from the walls of the cavity, and thus failed to evacuate its contents.

The right ovary contained a cyst the size of a pullet's egg, and also a large recent clot the size of a sugared almond. No communication could be made out between either tube and the sac; but the left ovary, after the most careful search, could not be made out among the folds of the thickened and altered broad ligament. The pelvic tumor had completely disappeared after death.

This case calls for but little comment, though it illustrates extremely well some of the more characteristic features of uterine hæmatocele. The disturbed menstruation, the pain in the performance of the function, the appearance of the pelvic tumor, the firmness which, but for the knowledge one had of the state of the womb before any such swelling existed, would have raised the question, whether by possibility it could be a fibrous growth, are all phenomena with which our previous study of the subject has made us acquainted. Next come the discovery of the swelling in the iliac region, always tender, often the seat of acute pain, aggravated in paroxysms, and increased specially at the menstrual periods, the cause of which pain is partly explained by the evidences of old pelvic peritonitis. Next may be added the variations in the size of both the internal and external swelling, coincident, no doubt, with the occurrence of fresh effusion of blood, or with its partial absorption, and the different sensations of firmness and elasticity which the internal swelling communicated at different times to the finger. Lastly, we have the occasional rigors, the ill-marked hectic, the fitful advances towards convalescence which seemed as if it were about to be arrived at, but was never actually reached; and then the surgical interference, which sufficed, though so slight, to call the slumbering mischief into activity, and to dispose the frail wall of adventitious membrane to give way, which at length it did under the slight effort made in the attempt to empty the bladder.

There are *several conditions* with which this *uterine hæmatocele may be confounded*, viz., extra-uterine pregnancy, retroversion of the pregnant uterus, inflammation of the cellular tissue between the uterus and rectum, and fibrous or ovarian tumor; and the points of similarity between each of these are quite sufficient to lead very readily into error. The suppression of the menses, the abdominal or pelvic discomfort, and the sense of bearing down backwards, are symptoms common to effusion of blood behind the uterus, and to an extra-uterine fœtation between the second and fourth months; while the general contour of the tumor is very similar in the two cases, and there is often the same remark-

able pulsation of the vessels distributed to it in both, though, I believe, this is by no means so constant in the case of uterine hæmatocele. The attacks of pain in extra-uterine fœtation are, however, usually more intense and more paroxysmal, while the discomfort in the intervals is less; the sanguineous discharge is absent, and the uterus, if examined with the sound, is ascertained to be increased in size;[1] and even without it the condition of the os uteri and portio vaginalis of the cervix, with the puffy lips, the closed orifice, and the swollen tissue, differs widely from the completely undeveloped state of those parts in cases of hemorrhage about the womb.

The effusion, when considerable, may cause, as it did in the case which I have related, complete retroversion of the womb, a condition which, when associated as it is sometimes with suppression of the menses for two or three months, may raise the suspicion of pregnancy, and lead to the tumor being taken for the fundus of the enlarged and misplaced uterus. Professor Crédé, of Berlin, relates an instance in which these very circumstances led him for a moment into error, and in which he endeavored vainly to replace what he supposed to be the pregnant and retroverted womb. Further observation soon led him right, and the same considerations as rectified his diagnosis may keep us from error. The cervix and os uteri presented none of the changes of pregnancy; the bladder was not affected; and the uterine sound, which entered readily in the natural direction, could not be turned round with its concavity backwards, nor be made to enter the tumor, intimately though it seemed connected with the womb.

The characters of the tumor in cases of inflammation of the uterine cellular tissue very closely resemble those of uterine hæmatocele, and the history and symptoms present a very near analogy in the two affections. There are, however, some points of difference between them which are generally sufficiently marked to preserve the attentive observer from error. Pelvic abscess is very generally the consequence of delivery or of abortion, while it is scarcely ever associated with any other form of menstrual disorder than its *sudden* suppression; the inflammatory symptoms developing themselves directly out of that accident. Uterine hæmatocele, on the contrary, is seldom the *immediate* consequence of a single suppression of menstruation; it is not infrequently preceded by menorrhagia, and is often accompanied, at any rate for a time, by a copious sanguineous discharge, a symptom which never attends upon inflammation of the cellular tissue in the vicinity of the uterus. I am not sure that the consistence of the tumors furnishes any very trustworthy clue to a correct diagnosis, since the degree of firmness of a uterine hæmatocele is

[1] With reference to the inference to be drawn from measurement of the uterine cavity, Dr. Matthews Duncan gives the important caution that "the uterus was found greatly elongated in every one of the instances he had recorded, when the hæmatocele was large, and in all it contracted with the contraction of the blood-sac."

liable to very wide variations, but considerable value may be attached to the circumstance that at no period are there the same thickening and induration about it which are so remarkable in that part of the vaginal wall adjacent to any collection of matter.

Ovarian cysts may occupy when small the same situation as uterine hæmatocele; they are not, however, so sudden in their occurrence, nor so rapid in their increase; while, though their development is often associated with menstrual irregularity, they are not attended by any constant sanguineous discharge. The ovarian tumors, too, do not descend equally low into the recto-vaginal pouch, and consequently do not produce the same difficulty in defecation, while, further, they are not so intimately connected with the uterine wall, and the womb can usually by means of the sound be completely isolated from the adjacent swelling.

Though this be true, however, it must yet be borne in mind that the existence of an ovarian tumor is sometimes suddenly discovered, owing to some special inconvenience, pain, or unusual menstrual disturbance which it may have occasioned; further, that the two conditions may coexist; and, lastly, that bulging of the recto-vaginal wall in cases of hæmatocele, although usually very marked, is sometimes altogether absent, and this even though the collection of blood may be very extensive, and the abdominal tumor may have attained a very considerable size. In the first case related by Dr. Duncan, though the tumor reached as high as the umbilicus, so that its contents were let out by puncture of the abdominal walls, yet the evidence of the collection of bloody fluid not having been contained within an ovarian cyst appears to me, as it does also to him, decidedly to preponderate. Many instances of the same kind, too, are on record, and one came under my own notice (though I have not included it among those on which my observations are founded), in which the very large size attained by the abdominal tumor, coupled with the absence of any bulging of it into the vagina, led me to regard the swelling as ovarian, though I have since entertained grave doubts as to the correctness of this opinion.

In the great majority of instances the distinction between a fibrous tumor and an effusion of blood will be attended by little difficulty, though we know that very able men have sometimes mistaken the one for the other. It must not be forgotten that the history one receives of a patient's illness is too often imperfect, exaggerated, or even in many respects altogether incorrect. In the next place, the presence of a tumor in the iliac region by no means clears up the difficulty as to the nature of that felt per vaginam, since both may be fibrous growths, or both may be due to the effusion of blood, while pain and menstrual irregularity may attend on either affection, and the degree of firmness of the swelling is a most inadequate ground on which to rest a diagnosis, and, when a mistake has been committed, has been the chief source of error. I believe that a fibrous tumor so situated as to be mistaken for a hæmatocele, will displace the uterus more considerably than an

effusion of the same dimensions, and further, that such displacement will rarely be limited to the mere elevation of the womb, and the pushing it to one side, but that the organ will also be retroverted, or its position will be otherwise manifestly changed. Time, however, will almost certainly remove the doubt, the immediate solution of which is seldom very urgent; and it must not be forgotten that three-fourths of our diagnostic errors arise from the needless haste of our decisions.

Inclusive of my own eight cases, I have collected 103 instances of uterine hæmatocele, of which 20, or almost one-fifth, proved fatal. There can, I apprehend, be little doubt but that its usual fatality is considerably less than would appear from these imperfect data; for, on the one hand, some of the cases have been reported as pathological rarities; and on the other, many which have had a favorable issue have been unrecorded. Many, too, have certainly passed unrecognized, for the disposition to the spontaneous absorption of the effused blood, unless the quantity poured out has been enormous, seems to be very great, so that menstrual disorder and abdominal pain have probably often passed away without a suspicion having arisen of their connection with hemorrhage around the uterus, or into the cavity of the peritoneum.

The subjoined tables will throw light on many points connected with the pathology as well as with the treatment of the affection.

Of 55 cases of uterine hæmatocele, treated on the expectant plan, 43 recovered, 12 died.

Of the former—

The blood was absorbed in,	. . . . .	30
" escaped by the rectum in,	. . . .	7
" " " vagina,	. . . . .	4
" " " uterus,	. . . . .	1
" " into cavity of peritoneum,	.	1
		43

Of the 12 deaths—

1	took place from	phthisis.
1	" "	phthisis and albuminuria.
1	" "	supervention of dysentery.
1	" "	great debility and extensive abscess of the thigh,

and are therefore only indirectly due to the sanguineous effusion.

Of the remaining 8—

1	took place from	pyæmia after the tumor had burst per rectum.
1	" "	hemorrhage by the bowel.
2	" "	hemorrhage into the cyst.
1	" "	" " " and per vaginam.
1	" "	rupture into abdomen, and peritonitis.
2	" "	peritonitis without cyst rupture, the inflammation being acute in the one case, and chronic in the other.
8		

Of 48 cases in which surgical interference was had recourse to, 40 recovered, 8 died.

In 38 of the 40 recoveries, the puncture was made by the vagina.

In 2 of the 40 recoveries, the puncture was made in the abdomen.

Of the 8 deaths—

1	took place	from	peritonitis after puncture of the abdomen. In the other cases the puncture was made by the vagina.
1	"	"	cyst rupture after ineffectual puncture.
1	"	"	pyæmia, symptoms of which had preceded the puncture.
1	"	"	pyæmia, following the puncture.
2	"	"	hemorrhage through the wound.
1	"	"	" into the sac after closure of the punctured wound.
1	"	"	peritonitis.
8			

Lastly, we come to the important question of the appropriate *treatment* of this affection. It happens rarely, though unquestionably it does happen sometimes, that the blood is poured out in such great abundance as to occasion immediate hazard to the patient's life, and in such circumstances the local application of cold, the employment of stimulants, and the use of opium, given as in cases of intestinal perforation for its stimulant rather than for its sedative properties, is clearly indicated.[1] I once saw a case which I imagine to have been of this kind. It occurred in a woman between thirty and forty years of age, the mother of one child, who had for some few times menstruated irregularly. On the third day of an extremely abundant menstruation she suddenly sank into a state of great exhaustion, which the external hemorrhage was quite inadequate to account for. She fainted, and lay long in a condition of syncope, her pulse was almost imperceptible, her surface was as cold as that of a patient in the stage of collapse from cholera, and I thought her dying when I saw her about five hours after these symptoms had come on. A vaginal examination threw no light upon the case, as no tumor was detected in the pelvis, but one feared that the sac of an extra-uterine fœtation had burst, and that the shock depended on this cause. Ice was applied to the vulva and over the pubes, opium and stimulants were administered, and attention was paid to keeping the surface warm. The next morning I saw the patient after an interval of eighteen hours. She had rallied slightly, and I heard, for I never saw her again, that she slowly recovered, without having presented at any time symptoms of peritoneal inflammation.

Such occurrences as these are rare; and usually the symptoms

[1] In a book far less known than it merits, *Medical Problems*, by Messrs. Griffin, of Limerick, is a most suggestive chapter on the use of opium as a stimulant, which should be well studied by all especially who are engaged in obstetric practice

which one has to deal with are very similar to those of inflammation of the uterine appendages, and are to be treated in the same way, by absolute rest, by poultices, by sedatives, and by the careful use of mercurial remedies. With the return of each menstrual period, all precaution must be redoubled, since it is under the conditions of general excitement of the circulation and special congestion of the sexual organs which then exist, that fresh hemorrhages are apt to take place. I have occasionally applied a few leeches in the iliac region, when the tension seemed very considerable and the tenderness extreme, but have never resorted to large local depletion as a means of controlling the hemorrhage and hastening the absorption of the blood already effused.

M. Aran,[1] however, has adopted a much more active plan, and, as he alleges, with very remarkable results. In a case where the effusion is recent, and the constitutional condition of the patient does not forbid it, he applies from twenty to thirty leeches over the abdominal swelling; on the next day from fifteen to twenty in the same situation; from twelve to fifteen on the third day, if the strength of the patient admits of it; and it is extremely seldom that a fourth application is needed. The patients are supported by nutritious diet while this local depletion is carried out, and this is succeeded as soon as possible by the use of blisters and frictions, or applications of iodine, to the abdomen. "By these means," says M. Aran—and he details cases in support of his assertion—"I have reduced to fifteen days in some cases, to from twenty to thirty in others of a less favorable kind, the course of an affection which has been estimated by all previous writers on the subject at a period of many months."

The experience of one so cautious and so trustworthy as M. Aran demands consideration, and the practice based on it merits a trial.

But whether an antiphlogistic plan be employed with more or less activity, the great question which presents itself in a large number of instances concerns the expediency or inexpediency of surgical interference. Opinion on this point differed formerly much more widely than it does at the present moment; and there seems now to be a general approach to unanimity among French writers as to the inexpediency of meddling with these collections of blood. The cases which I have collected from all sources, and in doing which I have been very careful not to reckon the same twice over, are quite inadequate to decide the point. I think, however, they tend to show that the dangers of puncture are less considerable than some of its opponents have supposed them to be; and further, that they are of just the same kind as one has to encounter in cases which are left entirely to nature.[2]

[1] *Op. cit.*, pp. 817–822.

[2] Dr. M. Duncan's cases are equally valuable as illustrative of the successful puncture of these collections of blood, whether one accepts or rejects his opinion as to their ordinary extra-peritoneal site.

The much-dreaded hemorrhage is evidently a very exceptional occurrence, and the supervention of fatal pyæmic or peritonitic symptoms is by no means limited to cases where interference has been had recourse to. Still, these symptoms have unquestionably been lighted up by puncture of the cyst, even in many cases which eventually recovered; while the hazard of rupture into the peritoneum is by no means certainly prevented, even though a free communication has been established with the vagina or rectum. In three out of four of my cases, where the cyst was punctured per vaginam, the operation was followed by peritoneal inflammation, which was once of great severity; and the existence of an opening in the vagina did not in that instance prevent the establishment of a communication with the bowel, and the discharge of a large quantity of blood per anum. Even an exploratory puncture is not always free from risk, as my eighth case shows; while the cause of its failure has also been met with in other instances, where the coagulation of the blood has formed a thick layer of fibrine within the sac, and has thus prevented the escape of its fluid contents.

Weighing the results of my own experience with what I can gather from that of others, I should be disposed

Not to puncture the cyst—

1st. So long as the effusion is recent, and there is therefore reasonable prospect of its being absorbed.

2d. So long as the effusion, although of long standing, is in course of gradual, even though very slow diminution.

3d. For so long as the periodical increase of the effusion coinciding with the return of a menstrual epoch, shows the cause which originally produced it to be still in operation.

I should puncture the cyst—

1st. When a long-standing effusion shows little or no disposition to become absorbed.

2d. When the occurrence of rigors and the supervention of hectic symptoms prove suppuration to have taken place; and in such circumstances I should puncture through the abdominal walls, providing the swelling were not readily accessible by the vagina.

LECTURE XXIV.

DISEASES OF PARTS CONNECTED WITH THE UTERUS—INFLAMMATION AND ITS RESULTS, AND KINDRED PROCESSES.

INFLAMMATION OF UTERINE APPENDAGES;—OF THE OVARIES.

Inflammation of the ovaries, imperfect state of our knowledge. Morbid appearances, inflammation of their peritoneal surface frequent; inflammation of their substance rare Changes produced by inflammation in the Graafian vesicles; suppuration, and ovarian abscess.

Symptoms of ovarian inflammation; of its acute form; of abscess of the ovary; cases in illustration.

Chronic inflammation of the ovary, its frequency probably overrated; neuralgic character of symptoms attributed to it. Occasional occurrence of subacute ovaritis; relation to it of the so-called displacement of the ovary.

Note on HERNIA OF THE OVARY; and on SEROUS CYSTS OF UTERUS.

FREQUENTLY in the course of these Lectures I have had occasion to lament the incompleteness of our knowledge, the imperfection of the evidence on which we are compelled to act; and have been fain to content myself with hints and suggestions; with communicating mere fragments of information where yet I felt that definite statements and positive rules were most needed.

Much of the subject of to-day's lecture can, I fear, be treated by me only after this imperfect fashion, unless I widely overstep the limits of my own knowledge, and assume a positive air where yet my convictions are far from settled. Some facts, indeed, are well known and universally admitted, such as the frequency of acute *ovarian inflammation* as a complication of puerperal peritonitis, its rarity in other circumstances; but the frequency, the symptoms, and the importance of the more chronic forms of inflammation of the ovaries, are questions which have received very discordant replies, and for whose final decision data appear to me to be still wanting.

The difficulties to which I have referred do not, indeed, arise from the rarity with which *morbid appearances* are discovered in the ovaries, but rather from the uncertainty which prevails as to their nature or as to their importance. In 21 out of 66 instances in which I examined the uterus and its appendages in the adult, the ovaries themselves, or parts immediately connected with them, presented changes more or less obviously due to inflammatory action. In 10 of the 21 cases the main evidence of inflammation consisted in traces of old peritonitis of the uterine appendages, and in 5 of the number there was no evidence of other or of more recent mischief. The amount of this peritonitis varied exceedingly. In some instances it was confined to one side, and its results were nothing more considerable than a thin and partial layer of false membrane on the surface of one or other ovary, and long filamentous adhesions between the ovary and Fallopian tube. In other cases a complete web of false membrane enveloped the

ovaries, thickened the broad ligaments, and by its contraction shortened the ovarian ligaments, thus drawing the ovaries much nearer than is natural to the sides of the uterus, while at the same time they and the Fallopian tubes were firmly and inextricably matted together. Now and then, too, the ovaries were not merely drawn nearer to the uterus, but their position was in other respects changed, they being tied down behind it; as in the following notes of the examination of the body of a woman who died at the age of thirty-seven, of chronic bronchitis and emphysema, and all of whose four labors were alleged by her husband to have been perfectly natural. The uterine appendages on either side were doubled back behind the uterus, and matted together in that situation by firm old adhesions, in the cellular tissue of which a good deal of firm granular fat was intermingled. The Fallopian tubes of either side were convoluted, dilated to the size of the little finger, by the presence in them of a thick red secretion, like a mixture of blood and mucus. Each was firmly adherent to its corresponding ovary, so that it was almost impossible to dissect them apart. Though twisted round as above described, they did not pass the mesial line, but wound about on either side of the uterus. On opening them they presented the appearance of a number of freely communicating sacculi, not unlike a section of the *Fucus marinus;* and the right, which was the larger of the two, measured at its widest part, which was one inch from the uterus, just an inch and a line when laid open. This enlargement continued, though diminishing, till about a quarter of an inch from the uterus, where it ceased; the short remainder of the tubes, though pervious, not being wider than natural. The walls of the tubes were very dense, their muscular structure remarkably distinct, and their lining membrane stout, tough, easily detached from the subjacent tissue, and presenting somewhat of a polished surface.

The left ovary was much atrophied, and was with difficulty distinguishable in the midst of the thickened cellular tissue and the fat which abounded on either side of the uterus and within the folds of the broad ligament. The right ovary was much larger than natural, though very little of its proper tissue was distinguishable. Its size, which was that of an unshelled walnut, was chiefly due to a cyst, lined by a smooth, polished membrane, and filled with thick, grumous blood, as well as containing some old coagulum, which required a little force for its detachment.

In other cases I have met with a less degree of the same condition of the uterine appendages, and have found the ovary wasted, apparently as the result of its compression by the formation of false membrane around it, an occurrence to which must probably be attributed the sterility that frequently follows an attack of peritonitis, and the permanent suppression of the menses that occasionally, though less often, succeeds to the same cause.

More important than the changes produced by inflammation on the exterior of the ovary are those alterations which it causes in

their substance, and especially in the Graafian vesicles. The mere substance of the ovaries does not, indeed, except in the puerperal state, often present appearances indicative of inflammation or of its results. The softening of their tissue, the infiltration with pus —which is sometimes poured out so suddenly and in such abundance as to produce rupture of the organs—or that sloughing of their substance occasionally observed in the bodies of women who have died during epidemics of puerperal fever, are conditions which, to the best of my knowledge, are not met with in the unimpregnated state. Affections of the ovarian tissue, apart from the puerperal condition, are, I believe, almost always secondary and subordinate to those of the Graafian vesicles themselves. Thus, when the functions of the ovaries are no longer exercised, and ovules are not in course of production and maturation, we find the substance of the organs shrunken, dense, and frequently intersected by white lines of firm cellular tissue; and just in a similar way do we find it swollen, congested, and infiltrated, in conjunction with a turgid state of the Graafian vesicles, and with the presence of evidences of inflammation about their coats. In these circumstances, indeed, we find the whole of the ovary considerably increased in size; but my own experience corresponds with that of Kiwisch, who says that it is extremely unusual for the organ in the unimpregnated condition to be enlarged by any inflammatory affection of its stroma to more than double its natural size.[1]

It is in the Graafian vesicles themselves that we find, as indeed might be anticipated, the most important results of inflammation; and such inflammation is of great moment, from the circumstance that in some instances it is probably the first step in the production of ovarian dropsy. In the case of women who have died during or soon after menstruation, it is, as you know, very usual to find a state of general turgescence of one or other ovary, with great prominence of some of the Graafian vesicles, and minute injection of their external membrane, while a large clot occupies the cavity of that one of the vesicles from which the ovule has escaped. Such appearances of the ovary are physiological, and pass away with the subsidence of the periodical congestion that produced them, the clot itself being gradually removed, and the contracted vesicle disappearing by degrees. Appearances of a somewhat similar kind are met with, however, independent of menstruation, and in circumstances that point directly to inflammation as their cause. Thus, in the case of a prostitute, twenty years of age, who was suffering from severe gonorrhœa at the time of her death from pleuro-pneumonia, the whole interior of the cavity of the uterus was covered by a copious puriform secretion, the surface beneath being of a bright red, just like red velvet. This condition ceased abruptly where the plicated structure of the cervix uteri began, but was continued along the whole tract of the

[1] *Op. cit.*, vol. ii, second edition, p. 47.

Fallopian tubes. They were pervious at their uterine ends, obliterated at their fimbriated extremities, filled with thick pus, which had distended the fimbriæ into little pouches, while their lining membrane was of a finely flocculent appearance, and of the most vivid red. The ovaries were rather large; they were somewhat congested, the Graafian vesicles were both numerous and turgid, and their membrane presented a most beautiful appearance, being traversed by very minute vessels, and looking as if the finest vermilion injection had been thrown into them.

I do not know exactly what the subsequent stage of the disease would have been if the patient's life had not been cut short by the pneumonia. Probably, however, the contents of the vesicles would next have been obviously changed, and in all likelihood would have eventually become purulent. Such at least were the contents of many of the Graafian vesicles in the right ovary of a girl who died of very acute peritonitis; and in whom there was found a cyst distended with pus, of the size of an orange, connected with that organ, while many of the Graafian vesicles contained little drops of pus, though there was no suppuration of its general tissue, and the other ovary was quite healthy.

The large cyst in this case had probably existed for a long time before the commencement of the patient's fatal illness, and the supervention of inflammation in it was very likely the point of departure of all the subsequent mischief. As we shall have occasion hereafter to observe, the occurrence of inflammation and suppuration in an ovarian cyst is an accident by no means unusual, and one which sometimes takes place without giving rise to symptoms so severe as might have been anticipated. Such cases, however, are perfectly distinct from those of primary ovarian abscess, which latter are also, I believe, of much greater rarity. For the most part the increase of such abscesses generally goes on rather slowly, and their development is usually attended with symptoms of far more serious constitutional disturbance than accompanies the growth of an ordinary ovarian cyst; though after a time they not seldom become stationary, and remain so even for years. Thus, in the case of a patient who died twelve years after her first attack of inflammation of the uterine appendages, and four years after her second and last seizure of a similar kind, the right ovary was beset with numerous yellow dots of a matter which looked like softened cheese, probably the result of some change in the contents of the Graafian vesicles, while the left ovary, to which the corresponding tube was firmly adherent, formed an abscess the size of an orange and full of pus. The cavity of this abscess was sinuous, as if several collections of pus had eventually been fused by the removal of their septa into one, and at its lower part there was a mass of cretaceous matter of the size of a chestnut.

There are, besides, some appearances of no great rarity presented by the Graafian vesicles, which have been supposed, and with considerable probability, to be the results of a chronic, or, at any rate, of a bygone inflammation. Such is the loss of transparency of

the coats of the vesicles, and especially their entire conversion into firm, whitish, or yellowish-white, shot-like bodies, of the size of a small pea, and of a homogeneous, somewhat friable, texture. In some instances the stroma of the ovaries has appeared unaltered around these bodies, but at other times I have found it also the seat of a yellow matter like fibrine, either infiltrated into the centre of the organ or deposited in striæ which intersected its tissue. This condition, too, has always been associated with considerable thickening of the ovarian capsule, and with a dead white color of its surface; and the ovary generally has been small and shrunken, and contained few Graafian vesicles, and sometimes none but those which had been the subject of this change. It is not, however, as might be supposed, a result of mere wasting from the advance of age and the cessation of the generative function, for I have met with this state in the body of a woman who died at the age of twenty-five, and in whose ovaries there were not merely other healthy Graafian vesicles, but also in one a large menstrual clot, and other evidences of recent menstruation.

Acute inflammation of the substance of the unimpregnated ovary is of such rare occurrence that no case has come under my own care, and but one has presented itself to my observation. To that case I have already referred, as affording an instance of suppuration in the Graafian follicles themselves, but the cause of death was the supervention of general peritonitis.

The patient's history afforded no clue to the cause of her illness, for she was a young unmarried woman, eighteen years old, living in comfort as a domestic servant, and never having had any disorder of her catamenia, or any uterine ailment. Her illness had come on spontaneously four or five days before her admission into the hospital, and not at a menstrual period, with pain in the back and abdomen, fever and languor, for which, however, no treatment was adopted before she entered the hospital. Her symptoms were just those of general peritonitis; a dry skin, a small pulse of 120, urgent thirst, and constant sickness, great headache, a full, tense, and tender abdomen, and much pain in the abdomen and back. Her condition did not seem to admit of active treatment, and the next day the pulse had risen to 160, the sickness was incessant, the matter vomited being of a dark greenish color; the abdomen was more tense, its tenderness undiminished, but the pain now recurred in paroxysms, between which were intervals of comparative ease. In eighteen hours more she died—about forty hours from her admission into the hospital.

There was universal peritonitis; two pints of purulent fluid were present in the abdominal cavity; and inflammation had extended to the diaphragmatic pleura. The uterus and the left ovary were perfectly healthy. Connected with the right ovary was a cyst filled with pus, which reached as high as the brim of the pelvis, and pus coated the outer surface of the ovary as well as occupied the Graafian vesicles.

So rapid a course of the disease, and so serious a termination

of it, are of great rarity. Inflammation commencing about the uterine appendages on either side seldom extends beyond the peritoneum in the immediate vicinity of the uterus; and even when the substance of the ovary is affected, and inflammation ends in suppuration, it is for the most part from a slow and wasting illness that the patient suffers; the *abscess* attaining a very large size, and possibly even persisting for years. Such at least is the experience of Kiwisch,[1] and my own more limited observation leads me to the same opinion. He notices the disposition of the symptoms to come to a standstill, so that sometimes the patient suffers chiefly from the mechanical inconvenience of the tumor, while in other instances the arrest of the symptoms is of a more imperfect kind: the patient continues to lose flesh; occasional febrile attacks come on, till at length a condition of hectic manifests itself, indicative in many instances of decomposition of the contents of the abscess, and death takes place either before or soon after it has discharged itself. All of these occurrences have come under my observation in cases of ovarian cysts in which inflammation has supervened, converting their contents into purulent matter; but I have only once met with an instance in which there was reason to believe that the tumor had been from the commencement an abscess, and had not originated in the inflammation of the cyst-wall of a dropsical ovarium. In this instance the patient's illness commenced with suppression of the menses five months after marriage, she being at that time twenty-six years old. The suppression of her menses was followed by pain in the right side of the abdomen, about the situation of the crista ilii, but extending to the opposite side, aggravated by motion or exertion, and confining her by its severity, and by the general constitutional disorder which accompanied it, almost constantly to bed during the six months which preceded her admission into the hospital. Very soon after the commencement of her illness a tumor appeared in the right iliac region, which was said by her medical attendant to be an abscess. A month after the swelling was first perceived a discharge of pus took place from the urethra, which continued at intervals for some weeks, though without any marked change in the swelling. The discharge then ceased for a time, but at the end of three months it again recurred, and continued to take place occasionally until the patient came under my care, though in spite of this, the tumor had gone on slowly increasing in size.

On her admission the patient looked very ill, her countenance was anxious, her pulse frequent, her tongue red at the tip and edges, and thickly covered with aphthæ. Her abdomen measured twenty-eight inches in circumference at the umbilicus, its enlargement being due to a pyriform tumor in the mesial line, which

[1] Kiwisch, *op. cit*, vol. ii, p. 67, mentions having seen an abscess of the ovary which contained sixteen pints of pus. I have seen thirty-five pints of pure pus evacuated from an ovarian cyst; but this was in a case of dropsy, in which inflammation of the cyst-wall had supervened, an accident to which further reference will be made in another lecture.

occupied the hypogastric, umbilical, and lower part of the epigastric regions, and extended laterally to the lumbar and lower part of the hypochondriac regions. The tumor yielded a distinct sense of fluctuation, and was very tender on pressure, especially in the hypogastric region. The uterus was low down, and carried forwards nearer than natural to the anterior pelvic walls. It did not seem to be altered or enlarged, neither was it fixed in the pelvis, nor was there any thickening of the vaginal walls. The movements of the organ were, however, impeded by some tumor, which, though not dipping down into the pelvic cavity, nor presenting any distinct outline, was yet to be felt as offering a general resistance on pressure being made in any direction against the roof of the vagina.

Three weeks after the patient's admission pus began to be discharged from the bowel, and in the course of a little more than a fortnight, under the continuance of these discharges the tumor almost entirely disappeared, though much pain continued to be felt in the right iliac region, and a little pus occasionally recollected in the sac of the abscess, and was from time to time discharged per rectum. The progress of her recovery was retarded by an attack of phlegmasia dolens of the left leg; but about two months after her reception into the hospital she was discharged perfectly well, and no trace of the tumor was to be detected anywhere.

In this case the suddenness of the attack, the acute character of the symptoms which attended its onset, and the rapid formation of the tumor, are alike incompatible with the supposition that the case was one of dropsy of the ovary. On the other hand, the situation of the swelling in the abdomen, the mobility of the uterus and the absence of thickening by the side of the womb, or at the roof of the vagina, clearly show that the case was not one of pelvic abscess, or of inflammation of the cellular tissue within the folds of the broad ligament. We thus arrive at the conclusion that the matter was secreted from an abscess in the ovary due to inflammation excited in all probability by the sudden suppression of the menses which marked the commencement of the patient's illness.

I do not know that practically there is very much to gather from the details of a case such as the preceding beyond the knowledge of the fact that acute ovaritis, ending in suppuration, may come on without apparent cause, and that the tumor thus formed may acquire a great size, and may present all the characters of a dropsical ovary. As far as treatment is concerned, it would, I think, in the case last related, have been the wiser course to have punctured the tumor and have evacuated its contents soon after the patient's admission.

It is not from the observation of cases such as have hitherto been related, and which are confessedly as rare in their occurrence as they are formidable in their character, that has arisen the general impression of the importance and the frequency of ovarian inflammation. The *ovaritis* which is chiefly dwelt on by medical writers

is said, for the most part, to be either *subacute* or *chronic* in its character. It is an affection supposed to be capable of lasting for many years without leading to any grave alteration of structure, though occasioning much functional disorder, and producing much local suffering. Disturbance of menstruation of various kinds, sterility, and pain in the abdomen, more especially pain referred to one or other iliac region, are the symptoms commonly assigned to this chronic ovaritis; and, indeed, a very large proportion of the ailments that have been referred by some observers to inflammation of the cervix uteri, and ulceration of its orifice, have been attributed by others equally confidently to chronic inflammation of the ovary.

My own impression is, that a larger share has been assigned to chronic inflammation in the production of these symptoms than can be proved to be really due to it. In no class of ailments is pain so incorrect an index to the nature and importance of the morbific process which gives rise to it as in the disorders of the sexual system of women. On the one hand, diseases of the most formidable character sometimes run their course without the production of any suffering till they reach a stage utterly beyond remedy, while, on the other hand, pains of the severest kind recur in some instances for weeks or months, or even for years, and yet neither during life nor after death can any adequate explanation be discovered of their occurrence or their persistence. It seems, indeed, as if the sorrow which women are peculiarly heirs to were not confined to the time of parturition, but as if the sentence extended in a measure to the performance of all the sexual functions. Pregnancy and menstruation, as well as childbearing, are very generally times of suffering, and sexual intercourse itself is not infrequently attended or followed by the same kind of pain as has been referred to ovarian inflammation. Pain in the ovarian region is a very general attendant on prolapse of the womb, and it suffices but to introduce the sound into the cavity of the uterus in order to produce, and often with great intensity, pain referred to the situation of the ovaries.

But while such symptoms are of frequent occurrence, are sometimes as causelessly persistent as in others they are causelessly evanescent, the researches of morbid anatomists do not make us acquainted with such changes in the ovaries as can be supposed to occasion them. We often, indeed, find the evidences of circumscribed peritonitis about the ovaries, but we find them in cases where there have been no symptoms of an urgent character during life, often indeed where no symptom of any kind has existed. But with the exception of those evidences of inflammatory action on the serous surface of the ovaries, the signs of a morbid process, too, which must soon have run its course, there are but few changes in those organs which an examination after death reveals, and those limited, or nearly so, to the Graafian vesicles, and usually to a few only of their number. In many of the instances, too, where such appearances are discovered, it has been matter of absolute certainty that during life all the sexual func-

tions were performed with complete regularity, and without any suffering. I could not acquiesce in the opinion that almost all the numerous ills of womanhood are due to inflammation of the neck of the womb. I can as little see in them the evidence of ovarian inflammation, and I believe that in "nineteen cases out of twenty in which the ovarian regions are the seat of deep, dull, aching pain, and appear tender and rather swollen, there is no actual ovarian disease whatever."[1] I cannot finish the sentence by saying with the author whose words I have quoted, that the symptoms are almost invariably the result of some uterine lesion, for I believe that in many cases the symptoms are purely neuralgic in their character, independent of any local lesion, and curable less by local treatment than by remedies addressed to the general state of the constitution.

My opinions on this subject, indeed, correspond very closely with those expressed by Dr. Churchill,[2] of Dublin, who has described this class of affections as the result of *ovarian irritation*. To this term, for my own part, I see no kind of objection, though, if preferred, the simpler designation of *ovarian pain* will answer every purpose, and serve equally well to impress upon your minds the fact that mere suffering does not of necessity imply either the presence or the previous existence of inflammation. Pain is in itself the patient's ailment, and this even varies greatly in different persons, and causelessly and within very short intervals in the same person both in its character and intensity. It is ordinarily dull and aching, is accompanied by tenderness in the iliac region, in which situation a degree of fulness may often be detected, though careful percussion will discover that this fulness is due rather to the presence of flatus in the intestines than to the existence of any solid tumor. Though this pain seldom subsides completely, it is apt to be increased in paroxysms; walking, riding, exertion of any kind, and sometimes even the remaining for a short time in the erect posture, considerably aggravating it. Menstruation almost always adds greatly to its severity, and sexual intercourse nearly invariably increases it, sometimes even induces a paroxysm of great violence. The extent of the pain is very variable. Always severest in the situation of one or other ovary (and for some unexplained reason generally in the situation of the left), it is sometimes limited to that spot, but in other cases extends more or less to all the pelvic viscera; difficult, frequent and painful micturition are then always experienced, and defecation is likewise often attended or followed by severe suffering. While pressure in the iliac region is always painful, a vaginal examination sometimes causes little inconvenience. In other cases, however, it is productive of pain which lasts for several hours, and this even though no trace of disease may be detected. In some instances, indeed, in which the suffering produced by examination

[1] Dr. H. Bennet, *op. cit.*, p. 222.
[2] *Dublin Medical Journal*, vol. xii, August, 1851, p. 82.

was most severe, the uterus was smaller than natural, a condition which, when coupled with the sterility of the patient, seemed to indicate an imperfect development of the whole sexual system. In those instances where the patient's sufferings were severest, there were almost always unmistakable signs of the hysterical temperament—often very obvious symptoms of hysteria—while even when this was not the case, the sudden aggravation or sudden cessation of the pain was sufficiently characteristic of its neuralgic character.

Though frequently independent of actual disease, pain such as has been described is also, in a very large number of cases, a concomitant or sequela of various uterine ailments. Of course, when disease of any kind exists, its removal forms our first duty; but even when this has been effected, the pain often outlasts the cause which first excited it; or when it seems to have completely disappeared, may return during menstruation, or be rekindled by any imprudent exertion, or by sexual intercourse.

Just like that backache which bears so large a part among the minor ills of women, so this ovarian pain, while easy to mitigate, is very hard to cure. Leeches do not relieve it, or if they give any ease, it is only for a few hours, and the pain then returns as severely as before. Blisters sometimes afford ease, though not often in those cases where the pain is most severe, while sometimes they seem rather to aggravate discomfort by the soreness of the surface which they occasion. In some instances I have found great comfort experienced from constantly wearing a wet compress on the painful side of the abdomen. Chloroform applied to the side generally gives temporary relief, even when the paroxysms of pain are most severe; while a piece of lint soaked in a mixture of equal parts of chloroform and oil, and covered with a piece of oiled silk, is an application which, while in bed, the patient may employ constantly with much benefit. The camphor liniment, with extract of belladonna, or the Linimentum Belladonnæ of the new Pharmacopœia, is another external application which I have found advantageous; and when these means have been fruitless, I have employed the tincture of aconite with advantage, applying the undiluted tincture by means of a brush, or laying a piece of lint soaked in it over the seat of pain.

These symptoms sometimes wear themselves out, the pain by degrees subsiding as the patient's general health improves; but I have never been able to trace the permanent cessation of suffering to the unaided use of any local measures. Some caution, too, is necessary in their employment, for as with many neuralgic and almost all hysterical pains, so here any kind of local treatment which directs the patient's attention very much to the seat of her sufferings is apt to defeat its own object, and to perpetuate the evil instead of removing it. Attention to the general health must always go hand in hand with the local treatment—must indeed, I think, hold the first place. It would be useless to endeavor to go into long detail here with reference to this subject. I will only

observe that there are two tonics which in cases of this kind generally do the most service. One of them is the sulphate of quinine, which, when tolerated by the patient, does the same kind of good as in other cases of neuralgic pain, though not so certainly, nor to the same extent. The other is the valerianate of zinc, to which I generally have recourse, wherever quinine is contraindicated or cannot be borne. I know of but one drawback from its employment, and that is the permanent taste which it is apt to leave in the mouth, and the unpleasant eructations with which patients are sometimes troubled hours after it has been taken, though when given in the form of a pill silvered this inconvenience is often avoided. There are indeed some cases, though I believe their number to be inconsiderable, in which the existence of *inflammation of the ovaries* is less questionable. The attack in these cases is usually definite in its onset, and for the most part succeeds either to sudden suppression of the menses, or follows at least some considerable disturbance of the menstrual function, or occasionally comes on not very long after a miscarriage, though once or twice I have met with the affection without being able to assign any probable cause for its occurrence. General febrile disturbance, usually of no great intensity, and by no means invariably ushered in by shivering, is accompanied by pain referred to the hypogastrium, or to one or other iliac region, and by frequent desire to pass water, which is usually high-colored and deposits lithates. In the main, indeed, the symptoms are such as attend an attack of uterine inflammation, except perhaps that they are less severe. A vaginal examination suffices to show that the uterus is not the part affected, for though the heat of the vagina may be somewhat increased, the womb is neither enlarged nor tender, nor are its lips puffy; while, at the same time, pressure against the roof of the vagina, at one or other side of the womb, not only produces considerable pain, but very often detects the indistinct outline of the enlarged ovary. Sometimes, indeed, the ovary may be very clearly felt, especially if, as is usually the case, it occupies the cul-de-sac between the uterus and rectum, and it may then be much more clearly distinguished by the finger, introduced into the bowel than by a mere vaginal examination.[1] The general symptoms, combined with the absence of affection of the uterus, and the pain on pressure at its side, suffice to point to the ovary as the seat of the patient's sufferings. When the tumor can be distinguished, it may be recognized as the ovary by its oval shape, its smooth surface, its elasticity, a certain degree of mobility, of which it is found susceptible, as well as by the peculiar sickening sensation which pressure upon it produces.

These symptoms for the most part have a sufficiently active

[1] Dr. Löwenhardt was the first person to draw special attention, in his *Diagnostisch-praktische Abhandlungen*, &c., 8vo., Prenzlau, 1835, p. 297, to these cases of ovarian inflammation, and to the value of examination per rectum as a means of diagnosis.

character to enforce the patient's attention, while the employment of local leeching, of the tepid hip-bath, the use of anodyne and mild antiphlogistic remedies, and the observance of absolute rest —the same remedies, in short, as would be applicable in cases of inflammation of the uterus itself—generally suffice for their removal in the course of a few days.

Some exceptional cases are, however, occasionally met with, in which, in a somewhat mitigated form, the above-mentioned symptoms continue for months or years, and are found to be associated with the presence of the enlarged and congested ovary in the cul-de-sac between the uterus and rectum. The late Dr. Rigby[1] was, I believe, the first person who drew attention to this condition under the name of *displacement of the ovary*, and the cases of it which have come under my notice bear out the accuracy of his description; except that I have not observed the paroxysms of pain to have anything like that intensity which they assumed in some of his cases.

The condition seems to be one of considerable rarity, for I have a record of but four instances of its occurrence, though I have seen a few other cases of which I have failed to preserve an account. The patients in all my cases were married women, of whom the eldest was thirty-two, the youngest twenty-three years of age; but Dr. Rigby relates an instance in which he met with the condition in an unmarried girl only eighteen years old. Two of my patients were sterile; the other two had given birth to children, and both of these latter dated their symptoms from their last delivery. In all of them the severe pain attendant upon sexual intercourse had by degrees compelled its discontinuance, and had much to do with the application of the patients for medical aid. Besides this, however, there were complaints of pain referred to the lower part of the abdomen, though severest on one side, aggravated by exertion, by menstruation, often induced with great intensity by defecation, and generally being severer at night than in the daytime, thus preventing sleep, or causing the rest to be very disturbed. In one patient menstruation was natural, except that it was attended by unwonted suffering; but in the other three the discharge was both excessive in quantity, and anticipated the proper period of its return. Pressure in one iliac region always aggravated the pain; but the paroxysms of suffering which were every now and then superadded to the abiding discomfort, and which were attended by a sense of darting and shooting referred to the womb, lasting sometimes for several hours, came on without any assignable cause.

These symptoms were present with considerable uniformity in all the cases, and in all, on an examination per vaginam, there was found behind, and rather to one side of the uterus, or else quite in the cul-de-sac between the uterus and rectum, an oval body, slightly movable, elastic, intensely tender to the touch, and im-

[1] *Medical Times*, July 6, 1850.

mediately recognized by the patient as the point whence all her sufferings proceeded.

In all of these cases, rest, abstinence from sexual intercourse, and the application per vaginam of leeches to the neighborhood of the painful part, were followed by the gradual cessation of suffering, the diminution in size of the swollen ovary, and the almost complete removal of the tenderness. In no instance, however, was there any such disappearance of the tumor felt through the roof of the vagina as to suggest the idea that the main element in the production of the patient's illness had been the displacement of the organ, or that the improvement in her condition was attributable to the ovary having regained its natural position.

My own impression is, that cases of this kind are to be regarded as instances of a *chronic congestion of the ovary* and slow increase of its size, rather than as illustrations of any mere change in the position of the organ. The enlarged ovary almost always descends in the pelvis, and in the early stage of ovarian dropsy the organ may often be felt per vaginam at a time when no tumor is perceptible in the abdomen. But though the organ may by growth thus apparently change its situation, and though besides its ligament elongates readily enough, as we see in cases where the ovarian cyst has already ascended into the abdominal cavity, we should yet, I think, be in error if we fancied the organ so loosely tethered in its place that without any other alteration it could fall down into the cul-de-sac between the vagina and rectum, and be made to resume its proper position merely by the patient placing herself in a prone posture. The persistent swelling, which in my cases remained perceptible, although its size was reduced by treatment, would seem to me to indicate that inflammation had affected the peritoneal surface of the ovary, and tied it down behind the womb just as in some of the cases which I referred to at the commencement of this Lecture. The subsidence of the inflammation was followed by diminution of the enlarged ovary, by lessening of its exaggerated sensibility, but not by its return to its previous position. I imagine, too, that whatever relief a patient may experience in these cases from assuming a prone position may fairly be referred to the removal from the congested and tender ovary of the weight of the superincumbent intestines, to which, either in the sitting or in the recumbent posture, it is subjected.[1]

[1] There are two conditions which I do not like to pass over entirely without notice, though neither of them has come under my own observation. One of them is *Hernia of the Ovary*, of which the best account is still that given by Deneux, in his *Recherches sur la Hernie de l'Ovarie*, 8vo., Paris, 1813, who has there collected the particulars of all cases recorded down to the time of the publication of his essay. The compilers of the *Bibliothèque du Medecin-Praticien; Maladies des Femmes*, vol. i, p. 643, have a long article on the subject, for which, however, they are chiefly indebted to Deneux; while Meissner's laborious work, vol. ii, p. 240, contains additional references to cases of ovarian displacements.

The other affection is one for our knowledge of which we are entirely indebted to M. Huguier, who describes in the *Mémoires de la Société de Chirurgie*, vol. i, 1847, p. 295, *Serous Cysts* on the exterior of the uterus. In the lecture on Cancer, p. 284, I described productions of a similar kind which had occasionally come under my

LECTURE XXV.

OVARIAN TUMORS AND DROPSY.

Special disposition to formation of cystic growths in the ovary.
Varieties of cysts—the SIMPLE CYSTS; cysts of the Wolffian bodies; cysts truly ovarian: their relation to dropsy of the Graafian vesicles; their structure and contents; modification of their form when several are present. Questions as to their cause.
COMPOUND, or PROLIFEROUS CYSTS: possible development from simple cysts. Structure and contents of compound cysts, and of cystosarcomatous growths.
ALVEOLAR OR COLLOID GROWTHS of the ovary.
CUTANEOUS OR FAT CYSTS: their peculiarities of structure and their contents.
Comparative frequency of affection of one or both ovaries, and of different forms of ovarian tumor.

I HAVE had occasion in the course of these Lectures to make frequent incidental reference to enlargement of the abdomen as an attendant upon various ailments of the sexual system; the consequence and one of the signs of their presence. To-day, however, we are about to enter on the examination of a class of diseases whose most important and most frequent characteristic is, that they bring with them enlargement of the abdomen,—that this is often the first symptom of their existence, and that to it is due no small share of the patient's sufferings.

But, while they have this one symptom in common, *Tumors of the Ovaries* differ most widely in all other respects. They occur in the young and the aged, in the single and in the married, in the sterile and in women who have given birth to many children.

own notice, though their relation appeared to be somewhat different from those of the cysts of which M. Huguier speaks. According to him, they are sometimes developed immediately beneath the peritoneum; at other times in the sub-peritoneal cellular tissue; or, lastly, are subjacent to that layer of fibro-cellular tissue which connects the serous investment of the uterus with the substance of the organ. Their most frequent seat seems to be the posterior surface of the uterus, since they were found occupying that position in seven out of thirteen cases, while they were situated only four times on its anterior wall, and twice on its fundus. Though generally sessile, they are now and then connected with the uterus by a narrow neck, which sometimes has shrunk to a slender pedicle of cellular tissue. Their size varies from that of a millet-seed to the bigness of an egg, or even of an orange; and the larger cysts might, especially if pediculated, be readily taken for cysts of the ovary. The diagnosis between the two would seem, indeed, to be scarcely possible, though no practical evil would arise from an error. M. Huguier connects their occurrence with previous attacks of uterine congestion, or of peritoneal inflammation; accidents, however, which are so common in comparison with the cysts to which they are supposed to give rise, that their influence must, I think, be regarded as very doubtful. The symptoms which they produce, judging from the two cases in which they were discovered during the patient's life, would appear to be entirely mechanical, and to result from their pressure on adjacent organs. In one instance the cyst was punctured per vaginam; about ℥ij of transparent serum were evacuated, and the cyst-wall was lightly touched with the nitrate of silver. The fluid did not re-collect, and no serious symptom followed the puncture.

The chief importance of these cysts is, perhaps, from their introducing a new element of uncertainty into the diagnosis of ovarian tumor in an early stage.

They are formed sometimes by simple cysts containing serous fluid, at other times they are composed of solid matter, while in very many instances their structure is identical with that of growths which morbid anatomists have unanimously designated malignant. Their rate of increase is sometimes quick, at other times slow, and the disease which had seemed in course of rapid development becomes occasionally stationary, and so remains for months or years; while now and then nature herself interferes, and, excelling all that the most skilful physician could do, completely takes away the ill which medicine is usually impotent to cure. Their diagnosis, in some cases most easy, is in others attended by extreme difficulty; and yet there are scarcely any ailments in which so much is involved in a right decision. The determination that the supposed disease is in reality due to the existence of pregnancy, or that the suspected pregnancy is but the evidence of disease, often has moral consequences which touch more nearly the profoundest sources of human happiness or misery than any which would follow the mere assurance, though never so positive, of coming health, or the admission that the future has no other prospect than that of a lingering and painful death. The prognosis to be formed, and the treatment to be adopted, bring with them, too, their own peculiar difficulties. Recovery, when there seemed small ground for hope; death, when little had appeared to call for apprehension; medical treatment rejected because it has been proved inefficacious; surgical proceedings shrunk from because they are known to be hazardous; additional facts scarcely seeming to widen our experience, or serving only to detect the fallacy of some loudly vaunted plan of cure: such are the uncertainties, and such the difficulties that meet us when we propose to ourselves the inquiry—What shall we do? In short, there are no diseases whose pathology is more imperfect, whose symptoms are more fluctuating, whose diagnosis is more obscure, or whose treatment is founded on more uncertain data than those very diseases of the ovaries which are yet so important, and to whose study I must now call your most patient attention.

In each of the different organs of the body we find a disposition more or less marked to diseased formation similar to its own proper healthy structure. This peculiarity is observable in tumors of bone, of muscle, of nerve, or of fibrous tissue, and even in the case of those formations which, from their non-identity with healthy structures, have received the name of heterologous, something of the same disposition is still perceptible. Thus the cancerous tumor of bone, while interfering with and destroying the structure of the part in which it is formed, is yet itself built up upon a bony skeleton or fabric; and I have already pointed out to you how, even in cancer of the womb, the bulk of the organ is increased, not merely by the morbid deposit in its substance, but also by the development of its natural structure.

It is in accordance with this law that, in the ovary especially (as to a less degree in all glandular organs, such as the thyroid

body, the testicle, and the mamma), there exists a peculiar liability to cyst-formation; and that nineteen out of twenty of all *ovarian tumors* are *cystic growths*.

Very various classifications of *ovarian cysts* have been proposed according as they have been regarded simply from a practical point of view, or as the minuter differences in their anatomical structure have also been taken into consideration. It is, however, so desirable to avoid multiplied divisions and subdivisions, that I propose to conform to the arrangement adopted by Mr. Paget,[1] and to speak first of Simple or Barren Cysts, and secondly, of Compound or Proliferous Cysts. This arrangement, too, will, I think, be found not simply anatomically correct, but also practically convenient.

The *first* kind of *Simple Cyst* is one which, though in the immediate vicinity of the ovary, is, strictly speaking, not connected with it; but which I mention here because until comparatively recently its nature was misapprehended, and erroneous conclusions, based on this misapprehension, have been applied to real ovarian cysts.

In examining the bodies of female infants, and less often of female adults, we may sometimes notice hanging from the under surface of the Fallopian tube, nearer to its fimbriated than to its uterine extremity, small delicate cysts, varying in size from the bigness of a pea to that of a cherry, furnished with a slender pedicle from one to three inches in length, and containing a transparent, serous, or slightly gelatinous fluid. Now and then a similar cyst may be seen bearing the same relation to the Fallopian tube, with the exception of being sessile instead of pediculated. Sometimes, too, a cyst of larger size may be observed within the folds of the broad ligament situated between the ovary and the Fallopian tube, but obviously not originating in either; and the cysts of this latter kind, unlike the others, are observed in the grown subject. The difference of their seat seems to be the only point of dissimilarity between them, for the wall of both is composed of a thin, structureless membrane, incapable of division into layers, often, though by no means constantly, furnished with a lining of nucleated epithelium; while their contents, though usually serous and colorless, are sometimes reddish and gelatinous.

The delicacy of the cyst-wall, the absence of any support, and the slenderness of its foot-stalk, are doubtless, as has been suggested by M. Verneuil,[2] the reasons why the pendent variety of cyst is seldom met with after early infancy, while the support which the peritoneum on either side furnishes to the sessile cyst

[1] *Surgical Pathology*, vol. ii, p. 26.

[2] By far the best account of these cysts, which contains also a notice of the observations of previous writers, is that of Dr. Verneuil, *Recherches sur les Kystes de l'Organe de Wolff*, *Mémoires de la Société de Chirurgie*, 1854, vol. iv, p. 58. Virchow, who gives (*Die Krankhaften Geschwülste*, vol. i, p. 262) an account of these small cysts, demurs to the correctness of this hypothesis, and believes them to be usually, if not invariably, new formations.

which is situated between the folds of the broad ligament, allows of its readier enlargement and of its attainment of a greater size. An examination of the pedicle of those cysts which hang from the Fallopian tube furnishes the clue to the understanding of the real nature of these growths. This pedicle is often found to be hollow, though in the course of its gradual elongation and attenuation it becomes converted into a slender cord. The canal, however, sometimes even communicating with the cyst, points to its origin in the dilatation of one of the small cæcal tubes which make up the Wolffian bodies in the fœtus, and the slight remains of which, difficultly discernible in the adult, have received from their describer the name of the Corpus Rosenmülleri.

The size of an egg, an apple, or an orange, is the greatest magnitude to which these cysts have yet been proved to attain; and the pendent cysts very rarely indeed reach dimensions sufficient to make them recognizable during life. With the exception, too, of the giving way of the pedicle of the pendent cysts, and the probable rupture of the delicate walls of both kinds of these growths, there are no changes which have been observed to take place in them; and in no instance has cyst formation occurred in their walls or into their cavity, though several distinct cysts, especially of the pediculated kind, are by no means infrequently seen in the same subject.

Before proceeding to examine the other and more important cysts which really spring from the ovary itself, we must for a moment notice a circumstance which has given to these cysts of the broad ligament, as they have generally been termed, a greater pathological value than really attaches to them. It has been very customary for medical men, whenever they met with a simple cyst tolerably movable, and of moderate size, to assume that such a cyst was not ovarian, and to console their patients with the assurance that it is a less serious disease, and one much less likely to increase. Now, while it is of great moment to give to our patients every legitimate comfort, and to encourage all reasonable hope, it is yet no less important, in the interests alike of science and of humanity, that we should not make large promises or give positive assurances without adequate grounds. A visit to any of the large museums of this metropolis will suffice to convince any one that cysts of the Wolffian bodies of size sufficient to be distinguishable during life are of very great rarity, while the same evidence will also prove that for such cysts to exceed the dimensions of an apple is rarer still. Whenever then a tumor is discovered in the abdomen which has attained a greater size than that of the doubled fist, that circumstance may be taken as in itself affording almost conclusive proof that the cyst is not extra-ovarian, nor of that kind concerning which it can be foretold that its tendency will be to remain stationary, rather than to increase in size.

But we may now pass to the study of those various kinds of *cysts* and *cystoid growths* which have their *origin in the ovary itself*.

The *simplest* of these, the least dangerous—I fear, however, by

no means the most frequent—are those which are produced by the *dropsy*, or over-distension with fluid, *of one or more Graafian vesicles.*

The structure of these simple ovarian cysts plainly indicates their origin. They are furnished with three coats: the first, the peritoneal investment of the ovary; the next, the capsule of the organ, on whose surface ramify the vessels that supply it; and the third, the wall of the Graafian vesicle itself, which is usually much thickened, generally divisible into several layers, and has a lining of tessellated epithelium. This laminated structure of the ovarian cyst is, as we shall hereafter see, not without its practical importance, inasmuch as it sometimes increases the difficulties of the operator, who cannot, if adhesion exist, always distinguish readily whether his finger is breaking down the connections between the enlarged ovary and the peritoneum, or whether it is separating the layers of the cyst-wall.

The surface of these cysts is generally white and glistening, and their interior smooth and polished; sometimes of a dead white color, or even of a mother-of-pearl lustre; unless the growth has been the seat of inflammation, when it will in many parts be dull, roughened on its interior by old deposits of lymph, and its walls will be found to present various degrees of firmness, density, and thickness. Even independently of previous inflammation the thickness of the cyst-wall often varies at different parts, and is by no means most considerable in all cases close to the pedicle of the growth.

The vessels of these, as indeed of all ovarian cysts, are usually of considerable size; while their distribution is uncertain beyond the fact that all converge towards the pedicle of the cyst. They almost all present a venous character, or, as Cruveilhier aptly says, in describing the structure of a large ovarian cyst,[1] "They are venous sinuses analogous to those of the dura mater," and, ramifying immediately beneath the peritoneum, their delicate outer wall seems wholly formed by that membrane. The large size of these superficial veins is to be borne in mind as an occasional source of danger in tapping; while their convergence towards the pedicle of the tumor constitutes one of the principal objections to the operation of tapping per vaginam. The branches which pass from these trunks towards the interior of the cyst, and which ramify, sometimes very abundantly, on its inner wall, are small in size, but still retain their venous character, and this preponderance of the venous over the arterial system is the great peculiarity of the vascular supply of these growths.

Be their size what it may (and this is liable to very wide variations; for while sometimes no larger than a pea, they contain in other cases a gallon or a gallon and a half of fluid) their contents are usually of the same description—namely, serum, often of a rather low specific gravity, and very seldom exceeding 1020, highly

[1] *Anatomie Pathologique Générale*, 8vo., Paris, 1856, vol. iii, p. 408.

albuminous, of a slightly greenish color, and though generally transparent, yet occasionally more or less stained with blood. Sometimes, indeed, the fluid contains a large admixture of pus, and now and then presents characters but little distinguishable from those of healthy matter. This, too, may be the case even when few local symptoms of inflammation have been present, so that it is not possible to foretell with any certainty the nature of the fluid which even a simple ovarian cyst may be found to contain; or to infer the absence of inflammation from the absence of pain. The circumstance which imparts to this fact its practical importance is that inflammation of the interior of the cyst is in very many instances accompanied by inflammation of its peritoneal surface, of extent and intensity sufficient to produce very considerable adhesions with adjacent viscera, while even this peritonitis may give rise to no severe pain. The feasibility of various surgical proceedings for the cure of ovarian dropsy depends to a great degree on the absence of adhesions. The want of any certain means by which to determine their presence or absence is one of the most serious of the difficulties that beset all operations for the extirpation of diseased ovaries.

I have described this affection hitherto as it presents itself to our notice when confined to a single Graafian vesicle. It is, however, seldom that the disease is so strictly limited, but usually other vesicles, sometimes in both ovaries, show a disposition to the same dropsical condition. Not infrequently, too, we meet with cases in which the affection of several vesicles has appeared to have commenced simultaneously, all being equally enlarged; and the ovary containing as many perhaps as ten or fifteen small cysts no bigger possibly than a large pea. As these cysts increase in size, they lose by their mutual pressure the regularly globular form which at first they present, becoming flattened, or somewhat wedge-shaped, with their broader end outwards. When, however, the ovary has attained to dimensions greater than those of an unshelled walnut, or of an egg, the development of one or two of the cysts generally goes on at the expense of the others, and a multilocular tumor is thus produced, made up of a number of simple cysts, of very various sizes, from that of the adult head to that of an apple or an orange. The contents of these cysts, too, may vary as much as their size, for while some are filled with transparent serum, others may contain fluid deeply tinged with blood, and others again a sero-purulent secretion, according as hemorrhage or inflammation has occurred in one and has not occurred in another, even though immediately adjacent. These varieties in the same tumor have sometimes given occasion to the opinion that a growth is a compound cyst, when in reality it is only an aggregation of simple cysts in which morbid processes of various kinds have been going on. It is by no means an unusual occurrence, too, with tumors of this description, for their pressure on each other to produce absorption of the dividing septa, and for a multilocular tumor to be thus in the course of time converted into a

single cyst. The openings of communication between the different cysts are usually of a circular form, with smooth edges, as if a portion of the wall had been removed by some cutting instrument, and while small at first, the advance of the process of absorption by degrees enlarges them; till at length a slight irregularity in the external contour of the tumor remains as the only evidence of its original structure. The circumstances that regulate the process are, however, by no means clearly understood; for while the absorption of the septa sometimes takes place at a time when none of the cysts are larger than a marble, it is far from unusual to find the partitions still entire when some of the cysts have reached the size of the adult head, or have even attained still larger dimensions.

It is perhaps needless to say that dropsical enlargement of the Graafian vesicles is by no means the only source whence simple ovarian cysts may be produced. There can indeed be no doubt but that the development of cysts may go on in the ovary just as it does sometimes in the kidney, not by any enlargement of pre-existing cavities, but by a process which is one of new formation from the very beginning. Still the whole tendency of pathological research is to increase the number of instances in which cysts are formed by the enlargement of pre-existing cavities; and besides, the question has been set at rest as far as the occasional production of ovarian dropsy from enlarged Graafian vesicles is concerned by Rokitansky's discovery of the ovule within the cyst in a case of incipient cystic disease of the ovary.[1]

The precise mode in which the dropsical condition of the vesicles is produced, is indeed, and probably will always remain, to a great degree unknown. It seems, however, to be very likely that in some cases at least a state of congestion of the vesicle, and hemorrhage into its cavity, are the first steps towards the production of the subsequent effusion. In the museum of Guy's Hospital, to which I was most courteously admitted, are a series of preparations which appear to illustrate this mode of origin of ovarian dropsy. In some of them a clot alone is seen within the vesicle; in others the clot occupies only a portion of the cyst, adhering to its wall by a sort of pedicle, while the remainder of the cavity is occupied by a serous fluid; the relative proportions of the clot and the fluid varying much in different specimens. Now, just as hemorrhage into the sac of the arachnoid is followed in many in-

[1] *Wiener Wochenblatt*, 1855, No. 1, as quoted by Scanzoni, *Lehrbuch der Krankheiten der Weiblichen Sexual Organe*, 8vo., Wien, 1857, p. 354. See also Virchow, *Die Krankhaften Geschwülste*, vol. i, p. 259. The question is one of so much moment with reference to the prognosis of ovarian dropsy, and the opinion of so high an authority as Dr. Bright (see *Guy's Hospital Reports*, vol. iii, 1838, pp. 181 and 193) is so decidedly unfavorable, that one rejoices at obtaining any evidence which enables us to soften the very dark hues of the picture which he has drawn. "This case," says he, *loc. cit.*, p. 193, "adds to the doubt I have already expressed of having met with any very distinct case of dropsical accumulation in the Graafian vesicles, as distinguished from the disease which runs into the malignant ovarian tumor."

stances by the subsequent effusion of serum so far exceeding in quantity that of the blood originally extravasated, as to produce one form of chronic hydrocephalus, so there can be no reason for doubting but that hemorrhage into the sac of a Graafian vesicle may in like manner be followed by a similar hypersecretion.

A theory, indeed, has been propounded, the very opposite of this, by Professor Scanzoni,[1] who suggests that the dropsical condition of the Graafian vesicle may be due to the flow of blood to the ovary at a menstrual period having been insufficient to produce the rupture of the sac and the escape of an ovule, but sufficient only to occasion a certain degree of congestion, terminating in an increased effusion of fluid into its cavity. This theory is based chiefly on the alleged frequency of amenorrhœa, or of scanty menstruation, as a precursor of ovarian dropsy; an allegation which, as we shall see hereafter, is scarcely substantiated.

I know of no other facts, nor of any other plausible theory bearing on the production of dropsy of the Graafian vesicles; and I fear that I must confess my inability to determine the proportion of instances in which simple cysts of the ovary are due to the enlargement of these cavities, and of those in which the cysts are themselves of new formation. That simple cysts may arise here, however, as in other parts, by the mere collection of fluid in the parenchyma of the organ, and the gradual formation of a cyst around it, I see no reason to doubt.[2] Possibly some of the very delicate and thin-walled ovarian cysts which we occasionally meet with may have this origin; but my conviction is, that this is not the general mode of production of simple cysts, but that most are formed by the distension of a pre-existent cavity.

Another question of greater practical moment is whether single cysts always remain single, or whether they may not become *proliferous* or *compound cysts* in the course of their development. Here, too, it is to be regretted that our data do not suffice for a satisfactory answer to this inquiry. The practical consequences involved in the decision of this point are very obvious; for it is apparent that if at any period a simple cyst is capable of passing into an active state, and of enlarging not by mere distension of its cavity, but by growth in its interior, or by cyst-formation in its walls, the expediency of having recourse to early and very decided therapeutical proceedings becomes far greater than it otherwise would be. My belief is, that such a change may take place, and that a cyst originally barren may become proliferous; that its continuing simple is rather a happy accident than a condition on the permanence of which we can calculate with any certainty. A young woman who had been the subject of ovarian dropsy for two years and a half, and who had been tapped a year before her death, sank under the effects of peritoneal inflammation induced by an

[1] *Op. cit.*, p. 353.

[2] A mode of cyst-production most fully illustrated by Professor Bruch, *Zur Entwicklungs-geschichte der Pathologischen Cystenbildungen*, in *Zeitschr. f. Rationelle Medizin*, vol. viii, 1849, p. 91.

attempt to inject the cyst with iodine. The cyst was found to be a thin-walled simple cyst, but at one point, near to the pedicle of the growth, four little cysts, the largest of which was about the size of a bean, projected from its internal surface, and round this group the lining itself was more vascular and rather softer than elsewhere. Larger opportunities than I have ever possessed of making examinations after death, would, I doubt not, have furnished me with other illustrations of a fact which is entirely in accordance with the result to which analogical reasoning would lead us. Without the stimulus of impregnation, a Graafian vesicle does, we know, sometimes produce hair, fat, teeth, cartilage, and bone, and the proliferous power of which these are the highest instances, may also, without doubt, exert itself in lower forms in the production of endogenous growths in its interior; and, though possibly less often, in exogenous cell-formation from its walls.

In some of the cases of endogenous cell development, the growths that occupy the interior of the cyst spring universally from its walls, and consist of an immense number of small pedunculated cysts or vesicles, multiplied apparently by the same simple process of growth as has been so well studied in the hydatid disease of the chorion. Such growths may, too, be so numerous as to fill nearly the whole of the interior of a very large cyst.[1] In other cases the endogenous growth, though similar in its character, does not arise from the whole of the interior of the cyst, but is connected with it by a pedicle, from which a pyriform mass of cystic growths proceeds.

Besides these forms of endogenous growth, there is another in which the cavity of the parent cyst is more or less completely occupied by others of a smaller size, but springing from it by a broad base,[2] and containing within themselves others of a third order, of smaller size, and with thinner walls. As these cysts grow, some probably empty themselves completely into the parent cyst, and, collapsing, become adherent to its walls, thus giving to them that thickness and resistance which in some cases, even of large ovarian cysts, are very remarkable. At the same time the progressive increase of the smaller cysts, and the constant formation of new cysts, help to make up that enormous mass to which ovarian tumors sometimes attain.

But while there is perhaps room for doubt as to the nature of the original growth whence these forms of complex cysts arise, there can be no question but that some cysts assume the complex character from their very commencement, and are not developed out of any transformation of the Graafian vesicles. In these cases we find the ovary converted into a tumor of irregular form; its firm, fibrous capsule, some quarter or third of an inch in thickness, inclosing a number of cysts or cells, one or two of which may greatly exceed the dimensions of the others, and be capable of

[1] As in a very remarkable preparation, No. 2245[64] in Guy's Hospital Museum.
[2] As No. 2622 in the Hunterian Museum.

containing many quarts of fluid, while the remainder vary in size from the bigness of a marble to that of a pigeon's egg, or an apple. While some of them may appear as separated cysts, adherent to the others, but apparently developed independently of them, others have obviously been formed in the thickness of the cyst-wall itself, and project, sometimes inwards, at other times towards its exterior. When the growths have attained to any considerable size, inflammation generally roughens their originally smooth internal membrane, and deposits of lymph thicken it; or the collapse of some of the smaller cysts, and their incorporation with the dividing walls of the different cavities, thicken as well as otherwise alter the septa. At the same time, too, similar causes modify their contents, so that while one cyst is filled with a serous fluid, another contains a glairy, albuminous matter, or its contents are deeply tinged with blood, or are of a dark chocolate color; while others contain pus, or sero-purulent fluid, or a liquid in which scales of cholesterine sparkle like the brilliant particles in Dantzic *eau de vie*. It is usually towards the pedicle of these tumors, where the smaller cysts are mostly situated, that their structure can be best studied. They are then seen to be formed by a smooth, polished membrane, tough and resistant, though thin, scarcely semi-transparent, but of a white color, and supplied by long slender bloodvessels, which ramify on their outer surface. Their general form is oval, but as they increase in size this is much modified by their mutual pressure on each other; while besides, irregular spaces exist here and there, partly produced, perhaps, by the fusion of two or more cysts together, partly by the intervals left between several adjacent cysts. The smaller size of the cysts near the pedicle of the tumor is apparently due to their being subjected to a greater degree of compression than the others, for sometimes a large cyst will develop itself downwards into the pelvic cavity; while again, where the increase of the tumor has been very rapid, a number of small cysts may sometimes be found towards its upper part, where apparently the resistance offered by the transverse colon, the liver, stomach, and diaphragm, has also prevented their increase.[1]

The amount of solid matter which enters into the composition of these cystic tumors of the ovary varies exceedingly. In many cases, as in those just described, the whole mass is but a collection of cysts, whose walls, even when thickest, bear but a small proportion to the quantity of fluid which their cavities contain. In other instances, however, these proportions are reversed, and the bulk of the solid matter far exceeds that of the fluid. This is the kind of tumor to which the name of *cystosarcoma* has been applied by Müller,[2] who describes it as principally composed of a more or less firm, fibrous, or vascular mass, but invariably containing solitary cysts in its substance. The fibrous masses consist of an albumin-

[1] A very good drawing of a compound ovarian cyst given by Dr. Bright, *op. cit.*, pl. v, p. 276.

[2] *On Cancer*, &c., English translation, London, 8vo., 1840, p. 170.

ous substance, and sometimes contain granules scattered between their fibrils, and the fibrous tissue forms the stroma in which the separate cysts are imbedded.

I do not feel myself competent to decide how far these growths really require to be referred to a separate category. The structure of the cysts, and their various contents, are analogous to what one observes in other compound ovarian cysts. Perhaps, however, it should be added that fat-cysts, or cysts containing hair, teeth, or other products of cutaneous tissues, when not existing alone, are most frequently associated with cystosarcoma; and, further, that these comparatively solid growths do not attain to the enormous dimensions of other compound ovarian cysts, and very seldom exceed the size of the adult head.

Another form of *compound ovarian cyst*, allied to the preceding kinds, but I believe essentially different from them, is that in which the organ is the seat of *alveolar or colloid cancer*, a disease[1] whose precise relations to other varieties of carcinoma are as yet undetermined. The grand characteristic of colloid degeneration of any part is, as you know, the development in its substance of innumerable cells, containing a tenacious, gummy secretion, which vary from a size too small to be discerned by the naked eye, to an inch or rather more than an inch in diameter. These cells increase, though by no means exclusively, by endogenous growth, and the presence of a countless number in the same stage of development shows that the formation of very many occurs simultaneously. If their contents are washed out so as to leave behind only a skeleton of the growth, it is then perceived that very many of the cells or sacculi communicate with each other; the whole mass having a honeycombed appearance, or resembling, perhaps, more closely a section of the lung of a reptile. The septa between the cells are in general of a somewhat firm, though delicate fibrous tissue, of a whitish, sometimes of a dead-white color; though while the cells are very minute, their walls, or the septa between the areolæ, are semi-transparent, and their jelly-like contents shining through, they look not unlike grains of boiled sago.

In the ovaries this colloid disease assumes many diferent forms. Sometimes several rounded masses make up an irregular tumor, which is solid to the touch, and firm on section, presenting no trace of the proper tissue of the part, but a structureless substance in which are imbedded countless semi-transparent grayish cells, scarcely any of which are larger than the head of a large pin. Again, in other cases the cell-walls generally are very delicate, while large spaces are left between, of irregular form, and filled with the characteristic gelatinous secretion, which may be collected to the amount of several ounces or of a pint, or more. Such

[1] A good representation of alveolar cancer of the ovary is given by Cruveilhier, *Atlas*, &c., livr. v, pl. 3.

spaces, however, do not appear to be cysts enlarged beyond the dimensions of those which surround them, but to be mere interspaces of irregular form produced by the absorption or liquefaction of the cell-walls, and the consequent escape of their contents into a common receptacle.[1]

Besides the instances in which colloid disease exists alone, cases are by no means unusual of its association either with compound cysts of the ovary, or with fungoid or medullary cancer of the organ. In the former case it is far from uncommon for one or two of the cysts to have attained to a very great magnitude; and the colloid matter may be in part poured into them from some of the adjacent cells, so as to give to their contents almost the same degree of tenacity as is observed in the secretion within the small cells of alveolar cancer. Even though this should be the case, however, and though there should be very close juxtaposition of the two structures, the differences between them will, I think, be sufficiently obvious.

In the case of the association of genuine fungoid cancer with the colloid disease, it is usually about the pedicle of the tumor, and near its base, that the great mass of cancer is situated. It is not, however, limited to this part, and sometimes a mass of soft brain-like substance is found in the midst of the tumor, surrounded by the delicate cysts and gelatinous substance of alveolar cancer; while at other times the medullary matter seems altogether fluid, and on cutting through the tumor it issues forth from some of the irregular cavities which have been already spoken of.

The peculiarities of the matter contained in the cells of colloid cancer have been frequently referred to; and even in growths of considerable magnitude these characters are sometimes still present in a marked degree. Often, however, they are more or less modified by the same causes as influence the contents of other forms of ovarian cysts, and the viscid secretion is often dark from the admixture of blood; sometimes even of a dark chocolate color, sometimes grumous; but I do not think that it becomes purulent, as is not infrequently the case with the secretion of the other ovarian cysts.

One form of ovarian cyst still remains for notice, and it is one concerning which some problems still remain unsolved. *Cysts* are sometimes formed in the ovary, either alone, or associated with cystosarcoma of the organ, *containing fat, hair, teeth, or other pro-*

[1] Remains of the septa may in these cases be discovered by means of the microscope, in the midst of the colloid material. It was the observation of this fact which led Virchow, *Verhandlungen der Gesellschaft f. Geburtshülfe*, vol. iii, p. 197, to the assumption that all compound ovarian cysts are in reality instances of colloid disease of the organ in which this liquefaction and disappearance of the septa has taken place. This theory, however, in the extension given to it by Virchow, is now generally regarded as untenable. Indeed, it is by no means unusual to meet with compound ovarian cysts which present no similarity either in their structure or in the nature of their contents to alveolar cancer; and I believe that the microscope fully bears out the verdict which observation without its aid would induce us to return.

ducts of cutaneous tissue. The presence of scales of cholesterine, or of small quantities of fat, is indeed often observed both in simple and in compound ovarian cysts, and is due to the rapid formation and rapid desquamation of their epithelial lining, and to the alterations which the corpuscles undergo. In these cysts, however, fat is present in much larger quantities, so that it forms a layer on the surface of the fluid removed by tapping as firm as lard, or even firmer; or collects perhaps into large irregular flakes or masses, or else into a number of small balls like marbles, of a yellow color, and of the consistence of tallow, shaped into these symmetrical forms by mutual attrition in the fluid which partly filled the cysts, of which there is a remarkable specimen in the museum of Guy's Hospital.[1] Sometimes the cyst contains no fluid, but a matter of the appearance and consistence of putty, possibly intermingled with hair. Hair, indeed, is often met with in these cysts, sometimes in shapeless, tangled masses, but more frequently rolled together into round balls; and teeth, bone, and bone cartilage are also all found in many instances. When it had been clearly ascertained that these structures existed independently of impregnation, it was next assumed either that they were the relics of some imperfectly developed germ included by accident within that ovule which had gone on to perfection, and that they were therefore congenital formations, or else that the ovule itself was capable of a certain imperfect attempt at growth, independent of its appropriate vivifying power, and thus produced incompletely, and with no orderly arrangement, some of the materials of the fœtus.

In a measure, too, both of these theories are probably correct, though cutaneous cysts are found in circumstances which do not seem to admit of either of these solutions. In all such cysts there may be found any of the products of dermoid tissue regularly formed, as though growing in their natural situations; the hairs implanted in a perfectly normal manner into the cutaneous tissue, which is found to be supplied with perspiratory and sebaceous follicles, while the teeth, in different stages of development, are imbedded in tooth-sacs. We owe the observations which have removed cases of this kind from the domain of the wonderful, and have shown how method and order reign, where a more imperfect knowledge could discover nothing but mere freaks of nature, to the acuteness of a German physician.[2] Another of his countrymen has done much to complete our information, and I will briefly state to you the results at which he has arrived. Dr. Steinlin,[3] on examination of the body of a young woman from whom seventy-eight pounds of pus were removed in four successive tappings, found that while the left ovary contained several small cysts, none of which exceeded the size of a hazel-nut, the right ovary was the principal seat of disease. It was made up of many cysts, all of

[1] No. 2237[25]. Rokitansky also relates a remarkable case of a somewhat similar kind, *op. cit.*, vol. iii, p. 597.

[2] Dr. Kohlrausch, in Müller's *Archiv*, 1843, p. 365.

[3] *Zeitschrift f. Rationelle Medizin*, vol. ix, p. 146.

which, with the exception of one large sac containing several pounds of pus, were fat-cysts, varying from the size of a grain of linseed to three or four inches in diameter. The fat was in different conditions in different cysts, and in the other cysts was often intermixed with hairs intertwined into a mass. All the contents being removed, the greater part of the cyst-wall was seen to be smooth and shining, but there were one or more round islands, of a dull whitish color, with a wart-like prominence in their centre, overgrown with hair; and other similar spots without the wart-like prominence, and without the growth of hair, but with several teeth or portions of bone more or less buried under their surface.

The cyst-wall admitted of division into several layers. Of these the outermost was composed of loose cellular tissue, beneath which was a denser layer made up of fibres, which, though interlaced, had on the whole a parallel arrangement; under this was a layer of elastic tissue, and innermost of all a coating of epithelium. The epithelium was everywhere of the tessellated kind, and at the polished parts of the cell were round and regular, but at the dull parts the superficial layer was arranged irregularly, though round cells were regularly disposed beneath. On denuding the wart-like prominences of their epithelium, the subjacent surface exactly resembled that of the true skin, having well-developed papillæ, and the whole of the cyst-wall beneath the unpolished islets had a similar structure. The hairs growing here sprouted from a regular bulb, and there were sebaceous glands and perspiratory follicles in varying number. The quantity of hairs is accounted for by their being deciduous, though formed in the natural manner, and the fat is not secreted by the whole interior of the cyst, but by the sebaceous glands, just as the vernix caseosa is in the fœtus. The presence of teeth is explained by their being true products of dermoid tissue, so that wherever that tissue is found there always exists the possibility of teeth being developed; and their presence in the jaws is a sort of accident by no means essential to their formation.

Dr. Steinlin concludes that the development of the cyst is but a secondary occurrence; that the first step in these cases is the formation of a tissue exactly identical with the external skin, the accumulation of its secretions by degrees distending the investing membrane. The earliest appearance of one of these tumors is as a small, fleshy-looking mass, of the size of a grain of linseed, in the situation of a Graafian follicle, and surrounded by a small sac. In the course of time this small body becomes detached from the sac except at one point, where its stem remains, and where vessels having a looped arrangement enter it. Next, a thin layer of fat is found between the small lump and the sac, and on careful examination of the former the sebaceous follicles are now seen developed. With the increase of their numbers the fat increases, and the sac becomes distended, while the perspiratory follicles modify by their secretion the contents of the sac.

If to this description one adds that the intimate relation between pus and fat globules may be taken as explaining the general

presence of pus in fat-cysts of any considerable size, I think that the description of this, as of the other forms of cystic ovarian tumor, may be regarded as complete, in so far at least as the practical object of these lectures is concerned.

Two points, however, still remain which require a brief notice: namely, the comparative frequency of disease of one or other, or of both ovaries, and the comparative frequency of the different varieties of ovarian disease.

With reference to the first of these questions, the general evidence of statistics, as the subjoined table shows, goes to prove the preponderating frequency of affection of the right ovary.

	Right Ovary.	Left Ovary.	Both Ovaries.	Total.
Cases collected by S. Lee,[1]	50	35	8	93
" " Chéreau,[2]	109	78	28	215
" observed by Scanzoni,[3]	14	13	14	41
" " the author,	35	38	19	92
	208	164	69	441

This table, however, can be regarded only as a very rough approximation to the truth in this matter, since it is mainly deduced from observations made during the life of the patient, while it is often a matter of considerable difficulty to determine whether a tumor is formed by the right or by the left ovary; and harder still to decide that the disease is limited to one ovary, and that the organ on the opposite side is healthy. In two instances, indeed, in addition to those enumerated in the table, I found myself quite unable to determine which ovary occasioned the tumor, and very likely in some other cases the conclusion which I did come to was erroneous. This difficulty, too, arises not simply from the mesial position of the tumor at the time when the case comes under observation, and from the inattention of the patient to her own early symptoms, though that is very frequent, but also from the circumstance that the ligamentum ovarii becomes twisted occasionally as the organ increases in size, so that a tumor of the left ovary sometimes produces enlargement of the right rather than of the left half of the abdomen.

Observation after death, too, fails to bear out the alleged greater frequency of the disease on one side than on the other, while it shows that the affection tends far oftener than would appear from the former table to involve both ovaries. Scanzoni's figures were deduced from post-mortem examinations, and if to them be added 24 of my own, and 15 of Dr. R. Lee's cases,[4] a total is obtained of 80 cases, in 28 of which the disease occupied the right side, in 26 the left, and in 26 both ovaries. This result, too, tallies with that which we might reasonably anticipate beforehand, for to the best of my knowledge there is no ground for the special liability of one ovary, or for the special immunity from disease of the other.

[1] *On Tumors of the Uterus, etc.*, 8vo., London, 1847, p. 120.
[2] As quoted by Scanzoni, *op. cit.*, p. 418. [3] Ibid.
[4] *On Ovarian and Uterine Diseases.* London, 1853.

Professor Scanzoni is, I believe, the only writer who has attempted any numerical estimate of the comparative frequency of the different varieties of cystic disease of the ovaries.[1] His 41 cases and my 24 yield the following results:

Simple cysts,	in 16	cases.
Fat-cysts,	" 2	"
Compound cysts, and cystosarcomata,	" 23	"
Colloid, or alveolar tumors,	" 21	"
Cancer with cyst-formation,	" 3	"
Total,	65	

It must be reserved for the next Lecture to consider what becomes of these tumors; to examine how nature endeavors, too often fruitlessly, to effect their cure, and how the disease tends too generally and too inevitably to increase, and as it increases to bring added suffering, and to hasten the approach of death.

LECTURE XXVI.

OVARIAN TUMORS AND DROPSY.

GENERAL COURSE OF THE AFFECTION; exceptional character of the cysts of the Wolffian bodies—their disposition to remain stationary. Occasional arrest of growth of simple cysts usually temporary—their complete removal very rare.

Cyst sometimes discharges its contents through Fallopian tube, vagina, intestine, externally, or into peritoneum.

CHANGES IN CYSTS, their gradual softening. Inflammation of cysts. Disorder of health from pressure of cyst on viscera; cachexia attending the increase of cyst. Various modes of death.

CAUSES predisposing to ovarian dropsy—influence of age, marriage, and child-bearing.

Alleged exciting causes of the disease.

THE study of the anatomy of ovarian cysts and tumors which occupied us at the last Lecture, has enabled us now to advance a step further in our investigations, and to inquire what is their *course*, and what their *tendency*, what *efforts nature makes to effect their cure, and what are the different ways in which they prove fatal?*

It has been already stated that practitioners, though ignorant of their real nature, were long familiar with the occasional presence of thin-walled cysts between the folds of the broad ligament, which, unlike other cysts connected with the substance of the ovary, had no disposition to increase beyond comparatively small dimensions. Not unnaturally, however, they indulged the favorable anticipations which were justified only in the case of a peculiar and infrequent affection, with reference also to a great number of simple ovarian cysts. Utterly unfounded expectations of the disease eventually becoming stationary have thus on several

[1] *Op. cit.*, p. 418.

occasions within my own knowledge deterred patients from justly estimating their own condition and prospects, and from consenting, while there was yet time, to the adoption of any curative measures. It is therefore of importance to bear in mind that the only cysts concerning which the disposition to remain stationary can be predicated as their general characteristic are the cysts of the Wolffian bodies; and, further, that these cysts have scarcely ever been met with exceeding the size of an orange, while even such dimensions are unusual, and in by far the greater number of instances they reveal themselves by no symptoms during life, and present themselves to the anatomist far oftener than to the physician. One case, indeed, and but one, has come under my own notice, concerning which I could feel justified in assuming that the cyst was not ovarian, but was connected with the remains of the Wolffian body. The patient, who, when she first came under my notice, was fifty years old, remained for eight years under my observation; and the tumor which was connected with the right uterine appendages continued during the whole time of the same dimensions, being rather smaller than the fœtal head until, without any symptom, it suddenly disappeared, its thin walls having doubtless given way, and its contents having escaped into the peritoneal cavity. The tumor was extremely movable, floating loosely just above the pelvic brim, but occasionally sinking down into its cavity, and then producing discomfort of various kinds, by its pressure on the parts situated there, and especially by the obstruction it offered to emptying the bladder, symptoms which, with its disappearance, completely ceased. This, however, is in my experience a solitary instance of a cyst connected with the uterus remaining quite stationary at a small size for years; so that I fear we must regard the chances as being against the more hopeful view of the nature of any of these tumors, and must further look upon the mere fact of the cyst having attained a greater size than that of a large orange, or of the fœtal head, as decidedly negativing it. The arrest of the disease may indeed still be hoped for as a lucky accident; it can no longer be counted on as a probable occurrence.

I said that the *arrest of the disease* may in any case of simple ovarian cyst be looked for as a lucky accident; and, indeed, I do not know how more fitly to designate it, for the nice adjustment of the balance between exhalation and absorption depends on conditions which remedies cannot bring about, which diagnostic skill cannot even foretell. It is not in general while in the pelvic cavity that this arrest occurs; for though the growth of the tumor may then be slow, it is while situated there liable to be pressed on, irritated, excited by the varying condition of the adjacent viscera. After it has risen above the pelvic brim, this fortunate occurrence sometimes takes place, though it takes place but very rarely, for, though the cyst is no longer irritated as it was before, its increase is not now restrained by unyielding boundaries, and hence it frequently enlarges with greater rapidity. As a general rule, the

enlargement goes on, not continuously, indeed, but by fits and starts, till at length the size of the abdomen causes distress, and necessitates interference. The exception is met with in instances where the cyst having attained a size somewhat less than that of the adult head, begins, to the patient's surprise and pleasure, to diminish, becomes notably smaller than it once had been, though it scarcely ever entirely disappears, but remains for years, possibly even for the remainder of the patient's life, a source of apprehension and an occasion of some discomfort, but not of much actual suffering, or of serious injury to the health.

In March, 1853, I saw a single woman, aged thirty-one, in whom the development of an ovarian cyst had succeeded to a heavy fall on the nates three years before. Her abdomen on admission measured thirty-seven and a half inches at the umbilicus; and its increase was alleged to have been going on with rapidity; and the patient was anxious even to undergo some risks for the chance of being cured of an ailment now threatening to become the source of much suffering. She was ordered to keep her bed for a few days, in order that a careful examination of her abdomen and of the relations of the tumor might be made. In a week the abdomen measured only thirty-five inches; and in another fortnight only thirty-four. I need hardly say that in these circumstances the patient was advised neither to be tapped nor to have any other operation attempted. She returned to the country, and to her occupation as a village schoolmistress. In April, 1855, her abdomen measured little more than thirty-five inches; and tapping did not become necessary until between four and five years afterwards.

To a slighter degree, and for a shorter time, the partial absorption of the contents of an ovarian cyst is by no means uncommon; and no one can have seen much of ovarian dropsy without having been struck by the different degrees of tension which the tumor at different times presents. Sometimes it is so tense and firm as to seem almost solid, and, indeed, if the growth be but small, this extreme tension of its walls may so obscure the sense of fluctuation as to lead the observer, unless very carefully on the watch, into error. At other times not only is fluctuation most distinct, but the cyst-wall is so flaccid that if the tumor is large it may not be very easy to distinguish between an encysted dropsy and ascites.[1]

It is not easy to determine the cause of such fluctuations in the condition of the cyst. A connection may now and then be ob-

[1] Cruveilhier, *Anatomie Pathol.*, vol. iii, p. 400, speaks of a variety of ovarian cysts as *kystes uniloculaires flasques*, and describes them as retaining a remarkable flaccidity of their walls in spite even of having attained a very considerable size. He further gives the details of a case in which these characters led two very distinguished physicians into the error of mistaking an ovarian dropsy for ascites. These flaccid cysts seem to cause comparatively small discomfort, to interfere but little with the general health, and to give rise to no symptoms such as to justify tapping. One such case I saw quite recently, in which it was not till after I had carefully examined the abdomen several times that I came to the decision that the fluid was encysted.

served between the approach of a menstrual period and an enlargement and increased tension of the cyst, while it once more grows smaller, and its walls become flaccid as menstruation passes off. In the majority of cases, however, no approach to regular periodicity in these changes can be observed, though even when the disease goes on tolerably uninterruptedly from bad to worse, there are yet almost always seasons during which it remains stationary, followed by times of rapid increase. The increase of the tumor, too, sometimes takes place noticeably in the course of twelve or twenty-four hours; the suddenness of the enlargement showing it to be due to a rapid effusion into the cavity of the cyst, not to the comparatively slow process of growth.

If the contents of an ovarian cyst may then vary from time to time, there certainly can be no reason why, in some instances, the process of absorption may not go on so as to effect the entire removal of the fluid and the complete cure of the patient. Such an occurrence, however, appears to be of extreme rarity, and some most competent authorities have even discredited it altogether.[1] In one case I believe that I witnessed it in the person of a young married woman, who had vague symptoms of discomfort about her uterus for nine months, and had been aware of the existence of a tumor for four months before her admission into the hospital. The tumor, which was connected with the left ovary, was tapped per vaginam, and sixteen ounces of highly albuminous fluid were withdrawn. It was determined that so soon as the cyst had regained its former dimensions, tapping should be repeated, and a solution of iodine be injected, in order to prevent the reaccumulation of the fluid. On the forty-second day after the first tapping this operation was to have been done; but it then struck some who were present that the tumor had seemed larger a day or two previously than it was then. The operation was postponed; and day by day the tumor shrank, not suddenly as if from rupture of its walls, nor with any discharge per vaginam suggestive of a communication existing between it and the Fallopian tube, but by degrees, as if its contents were gradually absorbed. Fourteen days afterwards, or on the fifty-sixth day from the first tapping, all traces of the tumor had disappeared. Another case has come to my knowledge of the disappearance of an ovarian tumor in a lady from whom seven pints of deep amber-colored glutinous fluid were removed by tapping five weeks before the birth of her fourth child. Her labor was quite natural, but nineteen days afterwards, while seated on the sofa, she was attacked by sudden violent pain, with great faintness, and symptoms of rupture of the cyst, followed by those of general peritonitis, for which she was treated very actively. Her abdomen at this time became swollen to double the size which it had presented when she was tapped. In the course of two months, however, this general enlargement sub-

[1] Kiwisch and Scanzoni, two of the most recent and of the highest authorities, most completely discredit its occurrence.

sided, disclosing a distinct elastic tumor occupying the hypogastric and right iliac regions. This next shrank gradually, so that at the end of nine months from the patient's confinement I could scarcely find any trace of it; and after a natural pregnancy she was confined of her fifth child, two years and a month after her former labor. On this occasion the medical man who attended her, and who had watched her through all her previous illness, searched in vain for any traces of the tumor. In this second case there can be little doubt but that some connection existed between the attack of peritoneal inflammation in which the cyst itself was involved and the subsequent complete disappearance of the tumor. In the former instance, however, no symptom whatever attended the removal of the fluid; but though we do not understand the means by which it was effected, still the removal of the fluid is scarcely more inexplicable than the permanent cure which occasionally follows a single tapping, in cases where yet neither constitutional disturbance nor local suffering has followed the operation.[1]

The simple absorption of their contents is, indeed, the rarest of all the changes which take place in ovarian cysts. A much more common occurrence, and one by which their increase is for a time arrested, and their complete cure now and then effected, is their rupture, and the escape of their contents through various channels, the empty cyst ceasing, perhaps for a time, perhaps forever, to perform its secretory function.

An *ovarian cyst* may *empty itself through the Fallopian tube*, the most fortunate, but by no means the most frequent, outlet for its contents; through the vagina, through the intestine, or even through the bladder; or it may burst into the cavity of the peritoneum, or, forming adhesions with the abdominal walls, may pour out its contents at or near the umbilicus.

Each of these outlets needs a moment's notice; and, first, of that which is formed by the dilated Fallopian tube. Cases are sometimes met with in which, on examination of the body after death, the fimbriated extremity of the Fallopian tube is found adherent to an ovarian cyst, and expanded over it, while the tube itself is distended at its abdominal extremity, and presents all the characters of dropsy. On pressure upon the cyst, however, it is found that the fluid can pass readily from it into the tube, while in most instances, and quite contrary to what might be expected, no mechanical obstacle is found closing the uterine end of the canal. The communication between the cyst and the tube is, however, free enough to admit the point of the index finger, a slight contraction marking its situation, and the longitudinal arrangement of the fibres indicating the commencement of the tube. The mere tonicity of the parts prevents the ready escape of the fluid at the uterine end of the tube. It collects in the canal, dis-

[1] A case of gradual disappearance of a well-marked ovarian cyst is related by Dr. Huss in *Monatschrift f. Geburtskunde*, Feb. 1857, vol. ix, p. 143.

tending by degrees its abdominal extremity, and at length escaping through the womb only when it has dilated the whole length of the tube, and overcome the natural resistance of its walls. A gush of fluid then takes place by the vagina, and the cyst is partly or even completely emptied, though such discharges do not in general effect a permanent cure, but the cyst refills, the tube becomes redistended, and the same process may be several times repeated. Such at least appears to be the opinion of M. Adolphe Richard,[1] who has described these cases very minutely, and who suggests, and with much plausibility, that many of the instances of alleged communication of ovarian cysts with the vagina were in reality instances of their opening into the Fallopian tube.

No opportunity of studying this process has presented itself to me after death; and, indeed, I am disposed to believe that it is a rare occurrence, since I have met with but one instance, out of the ninety-four cases on which my remarks are founded, where the cyst appeared to empty itself in this manner. The patient in that case was a married woman, thirty-six years of age, whose abdomen first began to enlarge six years before her admission into the hospital. After having acquired a considerable size, the swelling suddenly disappeared during a profuse watery discharge from the vagina; and the same occurrence took place afterwards eight or ten times. The fluid thus discharged was colorless; it escaped with a gush, amounted sometimes to several quarts, and the suddenness of its flow not infrequently produced faintness or actual syncope. Sometimes it escaped during the effort at defecation, but most commonly its flow was independent of any such exciting cause. I myself ascertained the presence of a distinctly fluctuating tumor, its sudden disappearance fourteen days afterwards, and then the slow return of abdominal enlargement during the ensuing three weeks, when I lost sight of the patient.

The symptoms, however, were so characteristic, that I imagine one is perfectly justified in assuming the case to have been one of communication of the cyst with the Fallopian tube. The uterus itself was perfectly movable, rather high up in the pelvis, no aperture existed in the vagina, nor, indeed, was the tumor to be distinctly felt through it; but it evidently floated in the abdominal cavity loosely tethered, as an unadherent ovarian tumor often is, by the elongated uterine appendages. How the communication is brought about between the ovary and the tube in these cases is uncertain; but it has been suggested, with considerable plausibility, that the process is one of a physiological rather than of a pathological character. In the other instances, however, inflam-

[1] *Mémoires de la Société de Chirurgie*, vol. iii, 1853, p. 121. The absence of any evidence of past inflammatory action about the communication between the ovary and the tube, leads M. Richard to suppose that the origin of the condition dates back to a bygone menstrual period; that the Graafian vesicle having discharged its ovule, did not collapse and wither as it usually does, but still retaining its communication with the tube, enlarged, became dropsical, and thus formed what he proposes to term a *tubo-ovarian cyst*.

mation, the formation of adhesions, and the absorption of the wall both of the cyst and of the adjacent viscus, are all implied in the escape of the fluid.

Many instances are on record[1] of a *cyst emptying itself per vaginam;* and this, too, even if we exclude those concerning which it is doubtful whether they do not more properly belong to the class described by M. Richard. Far more frequent, however, is the formation of a *communication* between the *cyst* and the *intestinal canal.* Generally, though not invariably, this communication takes place quite low down, and seems to be due to the pressure of that portion of the cyst which occupies the pelvic cavity upon the rectum, and the consequent absorption of the walls, both of the intestine and of the tumor. Not long since a communication took place in this manner, in the case of a patient of my own, between a large sac which formed part of a compound ovarian cyst and the rectum a little above the internal sphincter. Through the opening, which was of the size of a crown-piece, many quarts of a dark grumous fluid escaped during the last few days of the patient's life, with much alleviation of her sufferings, and with complete removal of the obstinate constipation that for a long time previously had been maintained by the mechanical pressure of the tumor on the intestine. The observation of this and of similar cases suggests the expediency of attempting to tap the tumor per vaginam whenever serious inconvenience is produced by its pressure upon the intestine, and paracentesis through the abdominal walls has either proved unsuccessful, or has afforded but partial relief. In the instance just referred to very little fluid was obtained by puncture of the abdomen, while, had a trocar been introduced into that part of the growth that projected into the pelvis, the principal cyst would have been emptied, and the patient's sufferings, which nature mitigated but too tardily, would long before have been assuaged.

Sometimes, however, communications form between an ovarian cyst and the intestinal canal in other situations, and are not attributable to the direct effects of pressure, though their real cause is very obscure. Thus, in the museum of Guy's Hospital there is a preparation of an ovarian cyst, at whose upper part an opening has formed into the bowel. A patient of mine, too, in whom an ovarian cyst had developed itself with rapidity in the course of two months, and who experienced much abdominal pain and tenderness, suddenly felt a sensation as if something had given way within her, and was immediately attacked by violent diarrhœa. In the course of ten hours the bowels were purged twenty times; the evacuations not being feculent, but consisting of a dark bloody fluid, which, under the microscope, was found to contain many blood globules, and also many pus corpuscles, as well as some crystals of cholesterine. The tumor had now completely disap-

[1] Meissner's *Frauenkrankheiten*, vol. ii, p. 318, contains numerous references illustrative of this subject.

peared, and five weeks afterwards there was still no trace of it discoverable, though I am unable to say whether the cure was permanent.

Openings in the *abdominal parietes* are another channel through which ovarian tumors sometimes empty themselves. In one instance which I saw the cyst had dilated the umbilical ring, and projected, like a hernia covered by the thinned integument, some inches beyond the surrounding abdominal walls. In this thin integument an opening formed, through which on several occasions the cyst partially discharged itself. It is, however, more usual for the opening to take place below the navel, adhesions first forming between the cyst and the integuments. The opening sometimes continues long fistulous, though I have known it to close, and discharges from it permanently to cease without any special change taking place in the condition either of the tumor or of its contents. To the best of my knowledge, a permanent cure less often follows the discharge of the contents of the cyst through the abdominal walls than their escape through some other channel.

The *rupture of an ovarian cyst into the peritoneal cavity* is, however an accident of far more frequent occurrence than the discharge of its contents through any other channel, and was met with in 6 out of 94 cases of which I have a record. In one of these cases, a fall on the abdomen produced the bursting of the cyst, but in by far the greater number of instances on record its rupture has been independent of external violence. Sometimes the delicate cyst gives way from over extension, and this is probably the explanation of its sudden disappearance in the case which I referred to some time ago, as being probably an instance of a tumor connected with the remains of the Wolffian body; as also in another instance where a tumor half the size of the adult head suddenly disappeared, the same accident having occurred to the patient eighteen months before. In other cases inflammation and softening of the cyst-wall have preceded its rupture; and an examination after death discovers it red and congested, and the edges of the rent soft, irregular, and jagged. Sometimes the sac, once ruptured, does not refill, and a permanent cure is obtained, though usually at the expense of an attack of peritonitis; and I much fear that there is no direct or constant relation between the severity of the inflammation which follows the rupture of the cyst and the non-accumulation of the fluid afterwards. One of my cases was that of a young lady, aged twenty-six, in whom an ovarian cyst gave way twice, and whose life on each occasion was in the greatest jeopardy, but who did not gain thereby the slightest delay in the rapidity with which the fluid re-collected. In two other cases of mine the rupture of the cyst proved fatal; the wall having in both instances given way at the posterior part of the tumor, where it was closely pressed against the pelvic brim, and extensive ecchymosis around the rent attested in one case the mechanical obstacle which had existed to the course of the blood in that situation. In

the other case decomposition was too far advanced to allow of any observation as to the state of the cyst-wall.

The mortality of 2 cases out of 6 agrees very nearly with that which Dr. Tilt[1] deduces from a collection of 34 cases, in 10 of which death followed the rupture of the cyst. In 20 of the cases, however, the fluid did not re-collect, but I feel very doubtful whether a more numerous collection of facts would be found to bear out the conclusion that in 2 cases out of 3 the escape of the cyst contents into the abdomen is followed by the permanent cure of the patient.[2]

For the very various results that have followed the escape of the fluid of ovarian dropsy into the abdomen an explanation has been suggested by Dr. Simpson,[3] and adopted by Scanzoni.[4] It is supposed that the different characters of the fluid in the cyst determine the occurrence or non-occurrence of peritonitis; that the pure serum gives rise to no ill effects, while dangerous peritonitis follows the escape of fluid mixed with blood or with the products of inflammation. Still, this is only an hypothesis, probable, indeed, but not proven, and wholly insufficient to form the basis of any therapeutical proceedings.

Other *changes* take place *in ovarian cysts*, tending for the most part less to the cure than to the aggravation of the evil. Some of these changes seem incidental to the process of growth, as for instance the removal of the septa between the cysts, the gradual liquefaction of the solid matter, and the consequent conversion of a firm into a distinctly fluctuating tumor. This alteration is in one sense of bad omen, since I believe its occurrence is generally contemporary with the more rapid increase of the growth; on the other hand, however, it often places within our reach the means of mitigating the patient's sufferings by tapping, which in the earlier stages of the affection was impracticable. With the rapid growth of the tumor there is in all cases of compound ovarian cysts a corresponding increase in the vessels which supply it, and a consequently greater disposition to hemorrhage into its cavity. Sometimes, indeed, the admixture of blood with the fluid of the cyst is so considerable as no doubt to have had a large share in the production of that anæmia, and that extreme exhaustion of strength which are often observed in patients suffering from large ovarian tumors.

Of all the morbid processes, however, of which these growths are the seat, *inflammation* is the most common and the most important. Few cysts attain any considerable size without having been attacked by it, and this inflammation is of all the greater moment, since it is seldom limited to the interior of the cyst, but

[1] *Lancet*, Aug. 5, 1848, vol. ii, p. 146.

[2] In vol. v, p. 226, of *Transactions of Pathological Society*, a case is related by Dr. Bristowe of rupture of an ovarian cyst into the abdomen, the aperture remaining permanent, the cyst still continuing to secrete, and ascites resulting from the accumulation of the secretion within the peritoneal cavity.

[3] *Op. cit.*, vol. i, p. 247.

[4] *Op. cit.*, p. 448.

generally affects its outer surface likewise, producing adhesions between it and adjacent organs, and thus forming great, often insuperable obstacles to the success of various operations which have been proposed for the cure of ovarian dropsy. In a practical point of view, too, this inflammation is the more important from being often unattended by local suffering, sometimes, indeed, accompanied by a comparatively small amount of constitutional disturbance, so that it is almost impossible to determine anything with certainty concerning its occurrence or non-occurrence from the patient's history. Of this no better proof can be given than is afforded by the observation of cases where on tapping a cyst, instead of the transparent serum which it was supposed to contain, a turbid fluid largely mingled with pus has been let out, or of other cases in which, the extirpation of the tumor having been resolved on, universal adhesions have been found connecting it with the viscera, and with the abdominal walls. In many instances the inflammation issues in the exudation of lymph as well as in the outpouring of pus, and the lining membrane of the cyst is found roughened and thickened by its deposit, which is sometimes so abundant that it may be stripped off just as may the false membrane deposited on an inflamed pleura. Multilocular cysts are, I think, more liable than simple cysts to this occurrence; and often, even where the different cavities intercommunicate, inflammation and the outpouring of lymph may be found in one cyst, and no trace of any such occurrence be observable in another immediately adjacent.

With the increase of the tumor, and the failure of the patient's powers, the liability to inflammation of the cyst appears to increase also, and its occurrence contributes to hasten the fatal event. It is but seldom, however, except after tapping, or some other operation, that cyst inflammation of itself proves fatal; but many causes in general combine by slow degrees to destroy the patient.

First among these causes may be mentioned the *disorder* of the *functions of other viscera*, as the tumor by its increasing size presses upon and disturbs them. The pregnant uterus, as you know, even when it has attained its largest size, interferes but little with the functions of other organs. The intestines find room on either side of it, while the direction of its fundus forwards in the axis of the pelvic brim obviates all interference with the descent of the diaphragm, and usually prevents all disturbance of the stomach or liver. The ovarian tumor, on the other hand, as it increases in size, so completely fills the lateral regions as to leave no room for the intestines except behind and above it, where they are often compressed into a very scanty space. No such law governing the direction taken by the tumor as regulates the enlargement of the pregnant womb, the descent of the diaphragm becomes earlier impeded, and respiration is thereby rendered labored. The liver is at the same time pressed on and disturbed in the performance of its functions, and this just at a time when the active discharge

of its duties is rendered all the more necessary by the congestion of the abdominal vessels which the pressure of the tumor occasions, and the scanty urinary secretion that is its attendant and its consequence.[1]

In a large proportion of cases this abdominal congestion relieves itself by the effusion of fluid into the peritoneum, and in some instances the amount of this effusion is very considerable; enlargement of the superficial veins attests the obstruction to the circulation, and the ascites becomes the occasion of more distress than the original disease to which it is superadded. Œdema of the lower extremities is less frequent than in pregnancy, probably because the peculiar state of the blood which favors its occurrence in the latter condition is absent. Where it exists it is often confined to one limb, being the direct result of mechanical pressure. This is not invariably the case, however, for ovarian dropsy is sometimes associated with albuminous urine, whether as the result of its accidental complication with granular disease of the kidneys, or of congestion of those organs produced by the pressure of the tumor, I do not feel myself able to determine.

While the enlarging tumor thus tends to trouble all the functions of the body, the patient's strength is further exhausted by the determination to the growth of a large quantity of that blood which ought to minister to the general nutrition of the body. Nor is this all; but a state of cachexia, the consequence and the evidence of the deteriorated condition of the blood, occurs frequently in the course of this, as of other forms of malignant disease, with which, if not actually identical, many tumors of the ovary are at any rate closely allied. In the simple ovarian cysts it is true that this latter source of suffering and of peril does not exist, and the prospects of the patient are accordingly far less dark than in other varieties of the disease. These simple cysts, too, as has already been mentioned, now and then remain stationary for many years, life being not at all shortened, scarcely even embittered, by their presence. Such, however, are exceptional cases, and exceptions of but rare occurrence; for generally the accumulation of fluid even in a simple cyst, sooner or later necessitates the performance of tapping, while when once done its repetition is speedily required, and the patient is thus worn out by the frequent collection and frequent evacuation of the contents of the cyst. A certain risk, too, of cyst-inflammation accompanies every tapping, and is, when it occurs, a hazard of a very serious kind. The liability to its occurrence appears to be greatest either after the first performance of the operation, or else in the case of patients who have been exhausted by the long continuance of the disease, and the frequent repetition of the tapping. In much debilitated patients, especially in those who are suffering from malignant or

[1] Two drawings given by Dr. Bright, *loc. cit.*, pl. vii, ix, are extremely instructive illustrations of the manner in which tumors of the ovary press on and displace the viscera.

quasi-malignant forms of ovarian disease, the spontaneous supervention of cyst-inflammation, or of a low form of peritonitis, is of no very rare occurrence, and not infrequently puts out the life whose flame had burnt but flickeringly for weeks or months before.

We have now completed our examination of the structure of cystic tumors of the ovary, and have also studied the different modes whereby, in some rare instances, nature effects their cure, as well as those far more numerous ways by which the patient is usually conducted from bad to worse, and the fatal issue is but too surely brought about. Before we proceed to the investigation of the symptoms of these diseases, and to the inquiry as to what either medicine or surgery can do for their alleviation or their cure, there are still some questions concerning their causes, and the circumstances that favor their occurrence, to which we must endeavor to furnish a reply.

It may be asked, when do these affections commonly occur; what is the influence of the exercise of the sexual functions upon their development; whether does sterility or fecundity predispose to them; and does a disordered state of the uterine health commonly precede them; or are they as likely to befall the person whose health has been previously good as her who for years has been a valetudinarian? To these inquiries as to the *causes* of ovarian dropsy, it would seem that very definite and conclusive answers might be given, and yet, strangely enough, the replies are most contradictory. The young and the aged, the single and the married, the sterile and the mother of many children, the robust and she whose uterine functions have been performed with pain and difficulty, have all in turn been asserted to be specially liable to the occurrence of ovarian disease.

With reference to the *age* of patients in whom the disease occurs, there seems to be no period of life that enjoys an absolute immunity from it; though it is of extreme rarity before puberty, and its commencement after the cessation of the menstrual function, though far less uncommon, is certainly unusual. Professor Kiwisch mentions[1] a preparation of cystic disease of the ovary in a child only a year old in the museum of Prague, and refers to a similar one at Würzburg, in which the affection involved both ovaries in the fœtus. He states, however, that fourteen years is the earliest age at which he himself had observed it; and a girl died in St. Bartholomew's Hospital, under the care of Dr. Burrows, from malignant disease of the ovaries, with cyst-formation in their substance, who had not attained her fifteenth year. One of my patients died of rupture of the cyst when in her sixteenth year, and the enlargement of her abdomen, which was very considerable at her death, was alleged to have been first observed when she was thirteen years old—menstruation not having occurred till the age of fourteen years and six months. In another of my patients the disease began in her seventeenth year, menstrua-

[1] *Op. cit.*, vol. ii, p. 79, § 36.

tion having occurred once at the age of fifteen and a half; but it did not reappear till after she was tapped at the age of eighteen. These, however, are exceptional occurrences, and in nearly half of all cases of ovarian dropsy the commencement of the disease dates from between the ages of thirty and forty.

This result, at least, is what I arrive at from a comparison of 94 cases of my own with 97 of Scanzoni's,[1] which are thrown into the following table. I employ Scanzoni's figures in preference to those of any other writer, because he alone has taken as its basis the ages at which the first symptoms of the disease appeared, while many writers have constructed their tables according to the age at which the patients first came under their observation.

Tables showing the Age at which, in 191 *Women, the symptoms of Ovarian Dropsy were first perceived.*

Author's cases.	Scanzoni's cases.	Total.	Age at first symptoms.	Proportion per cent. at different ages.
17	5	22	from 13 to 25 years,	11.5
15	12	27	" 25 " 30 "	14.1
15	21	36	" 30 " 35 "	18.8
23	32	55	" 35 " 40 "	28.7
11	14	25	" 40 " 45 "	13.0
8	6	14	" 45 " 50 "	7.3
3	2	5	" 50 " 55 "	2.0
2	5	7	" 55 " 60 "	3.6
94	97	191		

The next question concerns the influence of the *exercise of the sexual functions* in predisposing to the disease—an influence which you may remember was very decided in the case of uterine cancer, since only 3 out of 168 patients affected by it were single women, and only 13 out of the 165 who had been married were sterile. Of 94 cases of ovarian disease, however, 24 occurred in single women, 13 in widows, and 57 in the married—a statement which refers to their condition at the time when the disease commenced. This proportion is not very materially altered by the employment of higher numbers, since, adding to my own cases those collected by Mr. Lee and those observed by Scanzoni,[2] we obtain the following results:

Single women, ...	94,	or 28.7 per cent.
Widows, ...	31,	" 9.4 "
Married women, ...	202,	" 61.7 "
	327	

or, in other words, considerably more than a third of all cases of ovarian disease began at a time when the sexual functions were not in active exercise; and more than a fourth occurred in women in whom those functions had never been exerted at all.

[1] *Op. cit.*, p. 365.

[2] *Op. cit.*, p. 365. I have included in this list of married women, seven, who, though single, had given birth to one or more children.

That the exercise of the sexual functions does not predispose to ovarian disease, but that, on the contrary, some connection subsists between their imperfect performance and the development of this affection, is evident from the low rate of fecundity among married women in whom ovarian dropsy occurs. Of 70 of my patients, either married or widows, there were 26 sterile; and of Scanzoni's 52 cases, 18 who had likewise never been pregnant; or in other words, in 44 of 122 women who became the subjects of ovarian dropsy, or in 36 per cent., marriage had never been followed by conception, while among my patients generally at St. Bartholomew's Hospital the proportion of sterile marriages was only 11.7 per cent. Even those marriages, too, that were followed by conception showed less than the average fecundity; for of my 70 cases, the 44 in which the women were not sterile yielded only 172 pregnancies; of these 129 terminated at the full time, 43 ended in miscarriage. These numbers yield an average of 3.9 pregnancies to each fruitful marriage, or little more than half the number which occurred in persons in whom cancer of the womb took place. It may perhaps as well be added, that in 14 of the total 33 cases pregnancy occurred but once, and terminated in 3 instances prematurely, in the other 11 at the full period of gestation.

One question still requires an answer—namely, what connection, if any, subsists between the ordinary *state of a patient's uterine health*, and the subsequent development of ovarian disease? Now nothing can seem more probable than that she who has menstruated irregularly, painfully, or scantily, shall be more liable to suffer afterwards from diseases of the ovaries than the person whose menstruation has always gone on quite regularly. This, too, appears from Scanzoni's statement really to be the case; though my own observations do not corroborate his assertion, and probably neither his facts nor mine are sufficiently numerous to decide the question.

Of my own 94 cases, there were 72 in which the ordinary uterine health was quite good; 3 had had puerperal inflammation, but had quite recovered from its effects; 1 was still weak from hemorrhage after delivery; in 8 menstruation was always painful; in 5 menstruation was always scanty; in 3 habitually irregular; 1 was chlorotic, and had bad uterine health in all respects; 1 had suffered for years from great hypertrophy of the neck of the womb, and much consequent discomfort.

On the other hand, Scanzoni says that there were but 20 of his 57 cases in which menstruation was always healthy; while 19 patients had suffered more or less from chlorosis, 12 from dysmenorrhœa, 5 had always menstruated very profusely, and 1 patient, in whom ovarian disease came on in her forty-first year, had never menstruated at all. Be the truth concerning this matter what it may, I cannot but think that Scanzoni's figures overstate the frequency of menstrual disorder, as a precursor of ovarian disease, as much as mine perhaps err on the opposite side.

We find that in the case of most diseases, our patients like to

assign some *cause* for the commencement of their ailment, a cause often indeed quite fanciful, sometimes absurd. It is so in the case of ovarian diseases, while if all mere phantasies are rejected, the instances will turn out to be comparatively few and exceptional in which any plausible ground can be assigned for the beginning of the affection.[1] In 21 of Scanzoni's 97 cases, and in 18 of my 94, or in 39 out of 191 instances, the following were with some probability alleged as the exciting causes of ovarian dropsy:

Began within a year after marriage, . . .	in	6
Came on during pregnancy, ...	"	2
Followed not long after delivery, ...	"	15
Succeeded to abortion, ...	"	4
" metritis from cold, ...	"	3
" suppressed menses from cold, .	"	2
" violent blow on the hypogastrium,	"	1
" violent blows on the pelvis, .	"	2
" strains, or over-exertion, . .	"	3
Occurred simultaneously with ascites and anasarca from exposure to cold, ...	"	1
		39

From all these facts, then, we may conclude that the immediately exciting cause of ovarian dropsy, when any cause can be assigned for it, is usually connected with some disorder of the uterine functions, or with the recent excitement of their highest forms of activity. Nevertheless, too wide an inferenee must not be drawn from this fact, since in the great majority of instances the disease comes on independently of any cause to which it can be reasonably attributed; while further, it occurs in the unmarried oftener than most other organic diseases of the sexual organs; and the married who suffer from it are remarkable for their low rate of fecundity, and for the frequency among them of absolute sterility.

In the next Lecture we shall leave these incomplete and inconclusive details for the more important practical inquiry into the symptoms and diagnosis of tumors of the ovary.

[1] Of 36 instances collected by Mr. Lee, *op. cit.*, p. 118, there were 28 in which the alleged causes had reference to the uterine functions, being in 5 marriage, in 9 labor, in 2 abortion, in 7 sudden suppression of the menses, in 2 cessation of menstruation, and in 3 irregularity of its performance.

LECTURE XXVII.

OVARIAN TUMORS AND DROPSY.

SYMPTOMS OF THE DISEASE occasionally absent in early stage: generally referable to five heads—of functional disorder of ovaries, pain, the effects of pressure, cachectic symptoms, and the symptoms consequent on interference.
DIAGNOSIS, its difficulties; diagnosis from inflammation of broad ligament and its effects, from fibrous tumors of uterus, misplacement of uterus, ascites, distension of bladder, pregnancy, tumors of spleen or liver, &c.
Note on FLOATING TUMORS OF THE ABDOMEN.

MANY uterine ailments in their early stage present a puzzling resemblance to each other. Pain and menstrual disorder are common to most, and accompany as well the slight as the more serious affections, while it is often not until after some time that the distinctive features of the disease show themselves, and enable us to determine its nature, and to estimate its importance.

This is especially true with reference to ovarian disease, which at its onset commonly attracts but little notice, owing to the vagueness of its early *symptoms:* while not infrequently, just as is the case with fibrous tumors of the uterus, its existence is not suspected till accident all at once reveals the presence of a growth of considerable size.

On a comparison of the 94 cases on which these observations are chiefly founded, it appears that the first symptom of ovarian disease was—

Suppression of the menses,	11	cases
Irregular menstruation,	5	"
Scanty and painful menstruation,	1	"
Profuse menstruation,	2	"
Sudden faintness, accompanied by symptoms resembling those of pregnancy,	1	"
Pain in the abdomen, more or less distinctly referred to the side where the disease began,	31	"
Retention of urine, or difficult micturition,	10	"
The unexpected discovery of a tumor,	33	"
	94	"

The want of attention to their own condition implied in the very considerable size to which abdominal tumors sometimes attain before they attract the notice of patients is so remarkable as to be scarcely credible if it were not of every-day occurrence. Not very long since I saw a young lady in whom an ovarian cyst of the size of the adult head was only accidentally discovered in consequence of her suffering from a severe attack of abdominal pain while staying in the house of a medical man. If tumors so large can escape notice, it is less to be wondered at that those of smaller size should frequently be found out only when they become the

seat of pain, or when they cause inconvenience by pressure on surrounding viscera.

It is not easy to say on what the frequent absence of symptoms in the earlier stage of ovarian dropsy depends. The immunity from suffering then is also far from constant, and in many instances much more pain and discomfort are experienced while the enlarged ovary still remains within the pelvic cavity, than are felt subsequently, or at least than are experienced till its size begins to interfere with the functions of the abdominal viscera. While in the pelvis the large ovary presses on the rectum, the uterus, and the bladder, and maintains a constant congestion of the pelvic vessels, all of which inconveniences are diminished, or completely removed when once it rises higher, and floats as it were loosely tethered by the ovarian ligament. When pains are experienced, too, they generally tell plainly of some cause seated within the pelvis. They are usually of a throbbing or burning character, referred chiefly to one or other iliac region, and are liable, like all ovarian pains, to exacerbation in paroxysms. More frequently, too, in this affection than in any form of uterine disease, pain is experienced extending down the leg of the affected side, being sometimes a mere numbness or sense of weariness, aggravated, however, and rendered positive suffering by walking or exercise; at other times it is severe and neuralgic in character. Besides this, too, painful defecation and micturition, especially the latter, are frequent; and occasionally the necessity for the introduction of the catheter is an early symptom of the disease; though while the dysuria often persists for a considerable time, retention of urine is a rare accident, and may even not occur a second time.

Though generally more severe than the same class of symptoms when they accompany fibrous tumors of the uterus, they are at the same time usually of shorter duration, since an ovarian cyst tends more certainly, and at an earlier period, to rise out of the pelvic cavity than does the fibrous tumor, whose growth is slower, and whose close connection with the womb confines it longer to its original position.

My own observations do not show such frequent disorders of menstruation as might be expected, either among the precursors of ovarian disease, or among its earlier symptoms. Few, however, indeed, are the cases in which the disease runs to its fatal termination without the uterine functions being altogether deranged. I have not the data to show the influence of the disease from its commencement to its close in this respect. The following table represents the state of 94 patients, in all of whom the disease was fully established; but the majority were only a few weeks or months under observation.

In	7	cases menstruation had ceased before the disease began.
"	2	" disease began during pregnancy.
"	29	" menstruation had continued quite undisturbed.

In the remaining 56				
Menstruation was	painful	in	1	
"	profuse	"	9	
"	anticipating	"	5	
"	irregular	"	10	; in 5 was the first symptom.
"	postponing	"	3	; in 1 was the first symptom.
"	scanty	"	6	
"	suppressed	"	22	; in 6 was the first symptom.
			56	

The general tendency of the disease then is to impair the activity of the ovarian functions, no doubt by the disorganization of their tissue. Hence the persistence of menstruation is always a favorable sign in cases of ovarian dropsy, warranting the hope that the disease is simple in kind, and that one ovary only is involved. Complete amenorrhœa, however, is more to be dreaded as an unfavorable sign than is even tolerably regular menstruation to be hailed as evidence of the simpler forms of disease, or of its being limited to one side.

It is not possible to give any general description of the symptoms which attend the later stages of ovarian dropsy. They are modified by very many causes, and differ according to the nature of the tumor, the rate of its increase, the age of the patient, and even her civil state, and general condition. They may, however, be referred to some of the five following heads, which have already been briefly touched upon when I was endeavoring in the last lecture to point out the various modes in which the fatal issue of ovarian dropsy is prepared for or actually brought about.

1st. There are the various evidences of derangement of the function of the ovaries, showing themselves in different forms of menstrual disorder, of which the irregularity, or the total suppression of the discharge are the most common; its over-frequent, or too profuse occurrence are the rarest. Menorrhagia, however, does now and then for a season accompany ovarian dropsy, so that we cannot place unqualified reliance on the state of the menstrual function as enabling us to discriminate between uterine and ovarian tumors.

2d. Pain and other symptoms are experienced indicative of changes in the tumor itself. In simple cysts, the degree of fulness and tension of the cyst seems in great measure to determine the presence or absence of pain. Variations in this respect often take place with great rapidity, and increased pain will be found almost invariably associated with increased tension, and an abatement of suffering with a flaccid state of the cyst. The occurrence of actual inflammation is almost always accompanied with tenderness of the tumor, though, unless the peritoneal surface is affected, there is not usually much pain except on pressure. Vague constitutional disturbance usually attends this process, and though it is seldom very well marked, yet indefinite febrile attacks, shivering, loss of flesh, and hectic, may generally be regarded as indicative of this occurrence, and the more certainly provided the abdominal

tumor is found to be tender on pressure. The malignant forms of ovarian tumor are often associated with pain during their growth, quite independently of tension of their walls, or of any attack of inflammation. This, however, is by no means constant, and no inference as to the simple character of the disease can be drawn from the painlessness of its development.

3d. With the increase of the growth various disorders are produced by its pressure on the different viscera, and a class of symptoms appear, whose causes I dwelt on fully in the course of the last lecture.

Difficult breathing, impaired digestion, obstinate constipation, frequent and painful micturition, diminished secretion of urine and the effusion of blood into the abdominal cavity, are but so many different results of this mechanical pressure. The difficulty in micturition, however, that occurs in the more advanced stage of the disease is produced in a different manner from that which accompanies its commencement. While the tumor is still within the pelvic cavity, it interferes with micturition by pressing directly against the bladder; afterwards, as it rises out of the pelvis, it drags the uterus and bladder upwards, and thus interferes with the function of the latter organ, while the presence of a portion of the outgrowth behind the bladder in most cases prevents its distension in the antero-posterior direction. Scanzoni mentions also another occasional result of the pressure of the tumor on the under part of the bladder.[1] He states that it sometimes prevents the passage of the urine from the ureters, and thus produces great distension both of them and of the pelvis of the kidneys, and in illustration of this relates the case of a "patient who was tapped twenty-one times in the course of three years, which operation, during the last year of her life, was rendered necessary chiefly by the circumstance that the rapid accumulation of fluid in the tumor was always accompanied by complete retention of urine, which could not be relieved by the catheter, since the pressure of the tumor prevented the escape of the urine from the ureters into the bladder. For the first few days after each tapping the function of the bladder was undisturbed, but by degrees the flow of urine became more and more scanty, and in the course of five or six weeks complete retention of urine was once more produced. On examination of the body after death, a cysto-sarcomatous tumor was discovered, twice the size of the adult head, the lower, solid part of which pressed on the neck of the bladder, and had produced, by the obstacle to the outflow of the urine, so great a dilatation of both ureters that the right was two inches, the left an inch and a half in diameter."

The pressure on the stomach sometimes causes a serious impediment to the patient's taking food, since not only does the organ become unable to retain more than extremely small quantities at a time, but in some instances obstinate vomiting occurs, which no

[1] *Op. cit.*, p. 424.

medicine can in the least degree relieve, and which is arrested only by tapping the cyst, and thus removing the pressure.

Still more distressing symptoms sometimes follow the compression of the rectum. Not only is most obstinate constipation thus induced, but even the escape of flatus is in some instances prevented: the whole colon becomes distended by it to the thickness of the arm; and every now and then violent attacks of colic pains come on, during which the movements of the bowels are distinctly visible through the thinned abdominal parietes, and, as in ileus or in strangulated hernia, stercoraceous vomiting adds from time to time to the patient's sufferings.

4th. To this class belong a large array of symptoms of the cachectic kind, due in some instances to the nature of the disease of the ovaries; in others, to the mere diversion to the tumor of a large quantity of blood which ought to minister to the general necessities of the body. They are symptoms of the same kind as we see towards the close of every lingering disease, betokening the gradual failure, first of one power, then of another; the flickering of the taper, which, as all can see, must soon go out. The appetite becomes more and more capricious, and at last no ingenuity of culinary skill can tempt it, while digestion fails even more rapidly, and the wasting body tells but too plainly how the little food nourishes still less and less. The pulse grows feebler, and the strength diminishes every day; and one by one each customary exertion is abandoned: at first the efforts made for the sake of the change which the sick so crave for are given up; then those for cleanliness, and lastly those for comfort; till at length one position is maintained all day long in spite of the cracking of the tender skin, it sufficing for the patient if in that respiration can go on quietly, and she can suffer undisturbed. Weariness drives away sleep, or sleep brings no refreshing. The mind alone, amid the general decay, remains undisturbed; but it is not cheered by those illusory hopes which gild, though with a false brightness, the decline of the consumptive; for step by step death is felt to be advancing; the patient watches his approach as keenly as we, often with acuter perception of his nearness. We come to the sick-chamber day by day to be idle spectators of a sad ceremony, and leave it humbled by the consciousness of the narrow limits which circumscribe the resources of our art.

5th. May here be reckoned all those incidents which are inseparable from every attempt at alleviation or at cure. The exhaustion which follows after repeated tappings, the cyst-inflammation which sometimes succeeds to its first performance, the hemorrhage from vessels divided in the extirpation of the tumor, or the more frequent, and therefore more serious attacks of peritonitis that are induced even by *attempts* at its removal, all belong to this category. Their study, however, will find its fittest place when we come to consider the treatment of the different forms of the disease, and the comparative dangers either of letting it alone, or of endeavoring by one or other of the numerous means which have been de-

vised, either to delay its progress, to mitigate its evils, or to accomplish its entire removal.

But before we pass to this subject, there comes the inquiry as to the *diagnosis* of ovarian tumors—an inquiry the importance of which it is impossible to overrate, while, though sometimes attended by no difficulty, it is at others exceedingly obscure, and calls for large experience and well-schooled observation to return a correct reply.

The difficulties which we encounter in the diagnosis of tumors of the ovary vary according to the size of the growth, and the situation that it occupies. So long as it remains principally within the cavity of the pelvis, it for the most part yields but an indistinct sense of fluctuation, even though its contents should be entirely fluid, and it may then be hard to distinguish between it and the results of inflammation of the broad ligament, or between it and a fibrous tumor of the womb, or the retroflected uterus itself, especially if the organ is enlarged by pregnancy. When the growth has ascended into the abdomen, the distended bladder, the pregnant uterus, the enlargement produced by ascites, by tumors of the uterus itself, or by tumors of other organs, as the liver, spleen, omentum, or mesentery, present so many separate sources of error against which we need to be on our guard; while, last of all, the caution is not superfluous which warns us to be on the watch against imaginary tumors such as are produced by flatus in the intestines, or by fat in the integuments, or loading the omentum, or by fæces in the large intestine, or against those still more unreal swellings which have no existence at all save in the disordered fancy of the patient.

It sometimes happens that the earlier stages of ovarian dropsy are accompanied by a good deal both of general febrile disturbance and of local suffering. In such cases doubt may for a time be entertained as to whether a swelling which is discovered by the side of the uterus is the result of inflammation, or whether a more serious view must be taken of its nature. If the disease be ovarian, it will generally be found on close investigation that some slight discomfort, referred to the affected side, had for a considerable time preceded the more acute symptoms, or that those symptoms themselves had been of longer duration than are commonly such as betoken *inflammation of the broad ligament*. At the same time, however, it must be borne in mind that an attack of inflammation is sometimes the first evidence of the presence of ovarian tumor, and that this is especially the case with hair and fat cysts of the ovary. Still even then the inflammation does not in general extend to the adjacent tissues, so that the ovarian tumor is very often still movable; or if it be pressed so closely between the uterus and the pelvic wall as to have lost this characteristic, yet we miss that thickening and induration of the roof of the vagina which are such constant attendants on inflammation of the broad ligament, and of parts therewith connected. The tumor, too, whether felt per vaginam, or with the hand over the ramus of the pubes,

presents a much more definite outline than is yielded by the swelling formed by the inflamed broad ligament; while, lastly, in many instances the uterine sound enables us to isolate the womb from the tumor by its side. Even when at first there is most room for doubt, observation continued for a comparatively short time almost always dispels the uncertainty. Often the inflammation attacks the side opposite to that first affected, while it is rare for both ovaries to be involved within so short a time of each other. But even though this should not occur, the inflammation will nearly certainly issue in suppuration and the discharge of matter, though perhaps by no perceptible channel. The swelling will then diminish, though for a time possibly increasing in hardness, till at length it slowly disappears; while the ovarian tumor, on the contrary, will increase, and with its growing bulk the presence of fluid within it will become more and more perceptible.

The distinction between *fibrous tumors* of the uterus and tumor of the ovary is far from being as easy as might beforehand be anticipated, especially when the tumor grows from the posterior uterine wall. The facts that fibrous tumors are seldom developed at as early an age as tumors of the ovary, that they are seldom solitary, and that they are usually accompanied by menorrhagia, are always worth bearing in mind, though far enough from being conclusive in any doubtful case. But, besides, their surface is often uneven or nodulated; they present a greater degree of hardness than an ovarian cyst, though it must not be forgotten that when small and tense the cyst may yield no distinct evidence of fluctuation, while a large and rapidly growing fibrous tumor may, when felt through the abdominal walls, present a sense of elasticity which gives it a most deceptive resemblance to an ovarian cyst. I know of one instance in which this resemblance betrayed two very experienced surgeons into an operation for the removal of a supposed ovarian cyst, but who discovered, when too late, that the tumor was a very large fibrous growth from the outer surface of the uterus. The opposite error I have both seen committed by others, and have fallen into it myself, in cases where a small thin-walled ovarian cyst was still lying within the pelvic cavity, and consequently close to the uterus, while the pressure from above and around it sufficed not only to destroy all sense of fluctuation, but even to take away from it that feeling of elasticity which is so rarely absent from sacs containing fluid. The circumstance of the tumor being felt at both sides of the pelvis, on which stress has been laid by some writers as indicative of fibrous tumors of the uterus, is in reality of no great worth, since, as stated in the last lecture, both ovaries are involved in the disease in about a third of all cases. Fibrous tumors not infrequently somewhat retrovert the womb, while tumors of the ovary do not produce that effect, but merely drive it forwards and to one side. We are very apt, however, to be misled with reference to this point if we examine the patient in the ordinary position on her left side, since the weight of the tumor will be likely to drag or to push the womb

towards the side on which the woman lies; and on this account, the examination with the view of ascertaining this fact should be made with the patient lying on her back. The sound, too, often helps to clear up doubt, sometimes by distinctly isolating the uterus from the ovarian tumor, in other cases by ascertaining the cavity of the womb not to be elongated, and thus leading to the conclusion that the growth does not spring from its walls. Valuable, however, as the evidence thus obtained unquestionably is, two circumstances detract from its worth. Elongation of the uterine cavity is met with in cases of ovarian disease either by the tumor as it rises out of the pelvis dragging out the corresponding horn of the uterus, instead of merely lengthening the ligaments of that side, or as the result of adhesions having formed between the uterus and the tumor, when the cervix becomes of necessity greatly stretched by the rapid increase of the growth. In both of these cases the measurement by means of the sound would suggest an incorrect conclusion; and hence we are justified in attaching greater weight to the evidence which the small uterine cavity affords of the disease being ovarian than to that which the large uterine cavity yields of the disease being seated in the womb.

The grooved needle ought perhaps to be mentioned as assisting in doubtful cases, by affording proof either of the solidity of a tumor or of the presence of fluid within it. The failure to discover fluid in a tumor does not, however, by any means disprove its being ovarian; while further, with reference to this aid to diagnosis, I would add that its use is not always harmless, but that symptoms of serious inflammation are sometimes excited even by the simple puncture with the needle of a tumor which had not seemed to be endowed with any high degree of sensibility.

The tumor formed by the *retroverted* or *retroflected uterus* is scarcely likely to be mistaken for an ovarian tumor. In the first place, as has just been mentioned, the tumor of the ovary does not alter the direction of the os uteri, but merely carries it forwards towards the anterior pelvic wall, while, in the next place, the small size, the solidity, and the comparatively slight mobility of the retroflected fundus of the uterus, and the direct transition of the cervix uteri into its substance, suffice, independently even of the information afforded by the sound, to preserve us from error. In one instance, however, where retroflection of the uterus had persisted down to the end of the sixth month of pregnancy, I fell into the error of mistaking the tumor for ovarian disease. There were, it is true, many circumstances which in this case tended to throw one off one's guard; but I would remind you, *first*, that just such exceptional cases are those for which habits of observation are to be cultivated, and diagnostic skill is to be acquired; and *second*, that in every instance of doubtful pelvic or abdominal tumor, before we attempt to determine what it is, we must first thoroughly satisfy ourselves that it is not the result of pregnancy.

When the tumor has increased in size, so as to occupy the ab-

dominal cavity, there are other affections with which it may be confounded. In many of these cases, too, we are compelled to judge exclusively from what comes under our personal observation, for the patient is often unable to give other than a most imperfect account of her previous condition, or of the symptoms which attended the development of her disease. In the case of all abdominal tumors whose nature is at all obscure, it is therefore prudent to take certain precautions before we attempt to establish their diagnosis. It is always useful to keep the patient in bed for twenty-four hours; and if the abdominal distension is at all considerable, to apply a bandage lightly, as well as to take care that the bowels are freely relieved some hours before our examination is made. The difference between the morning and afternoon measurement of the abdomen in the case of a person following her ordinary pursuits is often as much as an inch and a half; and this increase in the after part of the day appears to be almost entirely due to the presence of flatus in the intestines. On the other hand, the good effects of a day's stay in bed are often very striking in the diminution of abdominal distension, and the consequently increased facility with which the relations of any tumor are examined, while, at the same time, the tenderness of the abdominal walls is much lessened, and they become far more tolerant than they otherwise would be of the pressure of the hand.

The general tendency of ovarian tumors, as they increase in size, is to yield with more and more distinctness the sense of fluctuation; and many growths which, when small, had seemed to be solid, become evidently, in the course of time, large simple cysts with fluid contents. This change is brought about either by the tension of the cyst diminishing as it grows larger, in consequence of which fluctuation becomes more manifest; or by the removal of the septa which had previously divided it into many chambers; or lastly, by the growth of one cyst at the expense of the others, which remain with whatever solid matter enters into the composition of the tumor, at its lower part, near to its pedicle, where they cannot readily be detected. It is due to the influence of some or all of these causes that we occasionally find the abdomen so much enlarged, and the fluctuation in all directions so uniformly distinct as to render it doubtful whether the patient suffers from *ascites* or from encysted dropsy. The grounds of diagnosis, and which in the great majority of cases suffice for the ready distinction between the two conditions, are the following: Ascites is generally preceded and accompanied by considerable disorder of the general health, usually of a febrile character; it is comparatively acute in its development, is often associated with anasarca, almost always with very scanty secretion of urine; in many cases with albuminuria, in all of which respects it differs essentially from ovarian dropsy. Examination, too, yields a different result in the two diseases. The enlargement of the abdomen is symmetrical in ascites; while in ovarian dropsy one side is often manifestly more prominent than the other. In ascites the abdomen is flattened, spreading out at

either side: in ovarian dropsy the tumor is distinctly most prominent towards the mesial line, somewhat as is the case in pregnancy, while, when the size of the tumor is very considerable, it spreads out the floating ribs, and imparts a conical form to the thorax, which is not produced by mere ascites. Percussion over the front of the abdomen almost invariably yields a dull sound in ovarian dropsy, for it scarcely ever happens that any coils of intestine are interposed between the enlarged ovary and the abdominal walls. In ascites, on the other hand, the intestines float as near the surface as the mesentery to which they are tethered will permit; and hence percussion over the front of the abdomen gives out a clear sound; or should there at first be dulness, owing to the presence of a large quantity of fluid, it suffices to press a little firmly, so as to displace some of the fluid, and bring the hand nearer to the intestines in order to elicit a clear sound, or at least a semi-resonance, which is equally characteristic. As the patient with ascites lies upon her back, percussion yields a dull sound in either lumbar region; while if she turns upon her side, resonance is at once perceived on that side which is uppermost. When to this is added that ascites seldom exists long without being attended by some obstruction of the abdominal circulation, and by an attempt at compensating for it by enlargement of the superficial abdominal veins; and lastly, that some trace of the outline of the tumor can usually, with care, be made out in cases of ovarian dropsy, I have enumerated all the customary signs of each affection.

Various causes, however, complicate a question which seems so simple, and one might almost console one's self for one's own errors of diagnosis in these cases by finding how many and how eminent are the men who have confessed to the like mistakes. Cruveilhier[1] mentions seeing a lady in whom an encysted dropsy of the ovary had been taken by two very experienced practitioners for ascites, and it was not until after a second very careful examination of the patient that they were convinced of the error of their opinion, and of the correctness of the view adopted by Cruveilhier; while Boinet confesses[2] that he on one occasion injected the peritoneum with a solution of iodine, under the impression that the case was one of ovarian dropsy. Most of the mistakes which are committed are of this latter kind, and many circumstances contribute to render this the form of error to which practitioners are most liable. Now and then, indeed, we meet with exceptions to the development of ovarian dropsy during a comparatively good state of the general health. A patient, aged forty-two, was admitted into St. Bartholomew's Hospital, in whom the formation of an ovarian tumor exactly coincided with an attack of general dropsy and albuminuria produced by exposure to cold. Greatly impaired health, and a scanty secretion of urine, which was loaded with albumen, still persisted at the time of the woman coming under my notice five months after-

[1] *Anatomie Pathologique*, vol. iii, p. 400.
[2] *Iodothérapie, etc.*, 8vo., Paris, 1855, p. 206.

wards; but the characters of the tumor were fortunately too well marked for its nature to be overlooked.

The opposite error is especially likely to be committed in those cases in which ascites, depending on some obstacle to the portal circulation, such for instance as occurs in cirrhosis of the liver, comes on without any active symptoms or any important disturbance of the general health. Such a case was that of a woman, aged thirty-four, who was received into St. Bartholomew's Hospital, suffering from urgent dyspnœa, owing to the enormous distension of the abdomen, which measured forty-four and three-quarter inches in circumference. Tapping was at once performed, and thirty-one pints of serum were evacuated with great and immediate relief to her symptoms. The patient then stated that after experiencing vague pains in her limbs, her abdomen eighteen months before began to enlarge, and as her menstruation, previously regular, had now become suspended, she at first fancied herself pregnant. After an interval of three months, however, the menses returned, and had subsequently become much more profuse than formerly. This weakened her; but until her respiration began to be interfered with by the enormous enlargement of the abdomen, no grave symptoms of ill-health had appeared. The skin was not icteroid, and a day or two after the tapping the patient expressed herself as feeling quite comfortable; her tongue was clean, her bowels were regular, her appetite was good, and she slept well. The history of the patient, and her general condition, might have misled one; but the following circumstances abundantly guarded against error:

1st. The fact that no tumor or cyst had been distinguished after the first tapping, and that on the re-accumulation of the fluid no distinct limitation of the swelling in any direction could be discovered.

2d. The existence of distinct resonance on percussion, in spite of the enormous distension of the abdomen, while at the same time there was none of that bulging outwards of the floating ribs which a solid tumor of such dimensions would occasion.

3d. The procident condition of the uterus, while that organ is commonly though not invariably drawn upwards by an ovarian tumor.

4th. The enlargement of the superficial abdominal veins, and the presence of a very obvious irregular, nodular enlargement of the liver.

The signs that in this instance kept from error may be almost entirely absent; and then, as in the painful case which I will next relate for your warning, a little oversight, a little want of vigilance and care, may suffice to lead us grievously wrong.

A young girl, aged seventeen and a half years, was sent up from the country, alleged to be suffering from ovarian dropsy, which her appearance and history confirmed. Her abdomen measured forty-one inches; it was generally dull on percussion, except in both lumbar regions, where there was semi-resonance on the right

side and a clear sound more marked and more extended on the left. Her history was, that having begun to menstruate at fifteen, the catamenia continued regular for twelve months, when they ceased in consequence of a fright at a menstrual period. Her health, however, still remained pretty good, but about five months before she came under my notice the abdomen began to enlarge, and for a month this enlargement had been going on with great rapidity, and her respiration had become impeded, while some swelling of the legs had taken place within a week. There was no enlargement of the superficial abdominal veins; the generally dull sound on percussion, with the resonance in the lumbar regions, the patient's age, her history, all tallied so exactly with the opinion said to have been expressed by her previous medical attendant, that no doubt was for a moment entertained as to her disease being ovarian dropsy. Twenty pints of clear, yellowish serum were let out with great relief, a bandage was applied to the abdomen, and no bad symptoms followed. In eleven days, the fluid having re-collected, seventeen pints were once more let out, and ℥x of a solution of iodine were thrown in through the canula, and so completely was the nature of the case taken for granted, that this was not preceded, as it ought to have been, by a repetition of careful examination of the abdomen. The injection caused some pain and alarming faintness, and until the patient's death in sixteen and a half hours great faintness was the prevailing symptom. There was but little pain, no anxiety of countenance, no restlessness, or jactitation; and though the pulse was very feeble, yet for eight hours the heart's action was good and regular, the patient dozed occasionally, and awoke sensible. After that time, however, more marked collapse came on, the surface became cold, vomiting occurred frequently, and sinking thus, she died with very little suffering, and retaining her intellect unclouded almost to the last.

Examination of the body discovered intense congestion of the peritoneum, a few adhesions between the coils of intestine in the upper part of the abdomen, and more numerous adhesions lower down, but no effusion into the abdominal cavity, nor any general deposit of lymph on either surface of the peritoneum. The uterus and its appendages were healthy, there was no tumor anywhere, but the liver was shrunken to half its natural size, and in a state of very far advanced cirrhosis.

Both of these cases are instructive, but the latter is especially so. It teaches the sleepless watchfulness which alone can guard from error, the importance of not taking anything upon trust, nor of allowing our judgment to be swayed by any previously expressed opinion as to the nature of the disease, when once a patient comes under our care, and we assume the responsibility of her management. It shows the need, too, of not taking the previous history upon any other person's authority, but of cross-examining both the patient and her friends ourselves. In this instance it was ascertained after the patient's death that her sister

had died of disease of the liver, and that the fright which was followed by suppression of the catamenia, was succeeded also by severe pain in the right hypochondrium, and by great sallowness of the complexion, which subsequently passed away. These facts would doubtless have awakened attention to the possibility of the fluid in the abdomen being dependent on some visceral disease, though the existence of advanced cirrhosis of the liver in so young a person is undoubtedly an exceptional occurrence. The case shows, moreover, that enlargement of the superficial abdominal veins is not a constant attendant on obstruction of the portal circulation, while it further proves that resonance in the lumbar region is not so trustworthy an evidence of encysted dropsy as is commonly supposed. The presence of a considerable amount of flatus in the large intestine may cause percussion to yield a clear sound, and this is especially the case on the right side, where the varying relations of the cæcum greatly modify the result which we obtain. Lastly, we may deduce the rule, that the distinct perception of the outline of the tumor is a condition indispensable to any attempt at operation, and further, I may add, that this must have been perceived, not simply on a previous occasion, but also at the very time at which the operation, be it what it may, is attempted.

In the cases which I have related, no solid tumor existed, or at least none whose situation at all corresponded with that which would be occupied by the enlarged ovary. Ascites and ovarian tumor may, however, coincide, but the tendency of any error in diagnosis in such a case will be rather to overlooking the existence of the tumor, than to misinterpreting the ascites. Sometimes, indeed, the solid tumor is not perceptible until after the removal of the fluid by tapping, while in other instances it is found, on careful examination of the abdomen, that the hand, displacing the superjacent fluid, comes down here and there upon a solid body, whose exact dimensions and form it may yet not be possible to determine. It is chiefly as influencing our prognosis that the detection of the solid tumor is of importance. The presence of a small quantity of fluid in the abdominal cavity adds little or nothing to the gravity of the prognosis of ovarian dropsy. On the other hand, the presence of a large amount of fluid in the peritoneum associated with a small solid tumor is always a matter of great moment. Such a tumor is seldom ovarian, for ovarian tumors, though when large they disorder the circulation through the abdominal vessels, seldom so far interrupt it as to produce any considerable effusion. Solid tumors so situated as to have this effect are often malignant in character, are very likely to increase, and are scarcely at all within reach of any kind of interference.

The *distended bladder* has been taken for a dropsy of the ovary, but this is an error which ought not to be committed. The exactly oval form of the tumor, its mesial situation, its tension as ascertained by external examination, the unchanged position of the

uterus, the absence of any tumor felt per vaginam, or if any be discovered, its situation in front of the uterus instead of behind it, are characteristic, even if no history of the case were obtainable. It is almost needless to remind you that in every instance where the nature of a tumor admits of doubt, the catheter should be introduced in order to obviate the possibility of this cause of error.

The mistake of dropsy of the ovary for *pregnancy* is impossible so soon as the case is submitted to a thorough examination, though it is far from rare for idle whispers to be raised prejudicial to a patient's character before she has come under medical observation. Examination per vaginam, and the discovery of the unaltered state of the os and cervix and lower segment of the uterus, as contrasted with the closure of the os, the softening of the cervix, and the expansion of the lower segment of the womb which accompany pregnancy, cannot but remove all doubt. In those cases, however, in which a mistake would be most serious in its consequences, namely, in unmarried women, we are often precluded from giving to any one the slightest hint of our doubts or suspicions, and are consequently unable to suggest the expediency of making a vaginal examination. So long, too, as an ovarian cyst does not exceed the size of the womb at the fifth month of pregnancy, it is by no means unusual for it to be elastic rather than distinctly fluctuating, while the position of the tumor is often so nearly mesial that its situation does not afford any means of discriminating between it and the gravid uterus. The absence of the mammary sympathies, and also of any sound like the uterine souffle, can both in general be ascertained, and deserve great reliance, as strong negative evidence against the existence of pregnancy.

There are still *some rare conditions* productive of enlargement of the abdomen which may be mistaken for ovarian tumors. Such, for instance, are those large accumulations of fluid which have been found in the substance of fibrous growths of the uterus,[1] and such the almost equally uncommon cases of encysted dropsy of the abdomen, where the fluid collects in the sub-peritoneal cellular tissue, or between the layers of the omentum.[2] One instance of this latter occurrence has come under my own observation, in which between four and five quarts of a dark fluid were found collected between the folds of the omentum, and during the patient's lifetime frequent discharges of a similar fluid had taken place from the umbilicus. The dropsy had during the life of the patient been supposed to be ovarian; but though malignant disease

[1] See a reference to these cases in a note at p. 220.

[2] On the subject of cysts of the abdominal cavity see Abeille, *Traité des Hydropsies et des Kystes*, 8vo., Paris, 1852, pp. 519–587; Copland's *Dictionary*, article Dropsy, and the references at p. 660; S. Lee on *Tumors of the Uterus*, p. 123; the cases of Sir B. Brodie, *Med. Gazette*, vol. i, p. 334; Dr. Thomson, *ibid.*, p. 468; Cruveilhier, *Traité d'Anatomie Pathol.*, vol. iii, p. 518; and the papers of Mr. C. Hawkins, *Med. Chir. Trans.*, vol. xviii, p. 175; and M. Chantourelle, *Archives de Méd.*, 1831, vol. xxvii, p. 218.

of both ovaries was discovered, yet neither of them contained fluid at all similar in character to that which was found in the omentum; nor, indeed, could either be detected till after the fluid in the omental cyst had been let out. I am aware of no means by which such cases are to be discriminated from ovarian dropsy; as far as I know, their nature has scarcely ever been suspected during the lifetime of the patient.

The only conditions in which large *tumors of the spleen or liver* are likely to be taken for growths of the ovary, are when they are of very long standing, have acquired a very large size, and have occurred in persons who are either incapacitated by illness from telling their own history, or who have been so unobservant as not to notice the beginning, and scarcely to attend to the progress of their disease. Still, even in these circumstances the prominence of the tumor at the upper part of the abdomen, the dulness in the hypochondriac region, and the fact that at some part, if not at all, the lower edge of the growth can be detected, will keep the moderately careful observer from error.

And here, I think, we may take leave of the diagnosis of ovarian tumor.[1] That fæces in the large intestine have been taken

[1] I know no place more fitting than the present for a brief reference to those *floating abdominal tumors* which all practitioners have occasionally met with, though much difference of opinion has prevailed with reference to their real nature.

All of these tumors bear a very close resemblance to each other, both in size, shape, and situation. They are oval in form, usually about the size of a turkey's egg, and are generally situated in the hypochondriac or lateral region, their lower margin seldom descending below the level of the iliac crest. In most instances one tumor only is present, but sometimes there are two in opposite sides, and for the most part symmetrical in all respects. They generally admit of displacement inwards towards the mesial line much more readily than outwards, and upwards to a far greater extent than downwards, so that they can sometimes be pushed up out of reach under the floating ribs, but seldom downwards into the iliac region, and never into the pelvic cavity. They are firm, though not without a certain degree of elasticity; their surface is smooth and regular; no sound can be detected in them by means of the stethoscope, and they yield a dull sound on percussion, modified only by the presence of a coil of intestine distended with air behind them, when they may yield a sort of semi-resonance. Pressure on them is painful, but the pain, which is of a peculiar, sickening character, usually passes off when they are no longer handled. Sometimes, however, they are the seat of a constant wearing pain, which comes on causelessly, and continuing for hours, days, or weeks, subsides equally without occasion, though it may be said, as a general rule, to be aggravated by exertion and mitigated by rest. They have either been accidentally found out on examination of the abdomen for some other purpose, or the pain experienced in them has led to the discovery of their presence by the patient. Their rate of increase must be slow, for though patients affected with them have for years been under my occasional observation, I have never ascertained that their size has undergone any modification. I know of one instance, too, in which a tumor of this description had existed for more than twenty years in a lady of sixty, unchanged in shape, size, or situation. This lady had been seen by the late Dr. Warren, by Sir Astley Cooper, and Sir Benjamin Brodie, and it may illustrate the obscurity which prevails with reference to their nature if I mention that each of these eminent men gave a different opinion with reference to it, one of them regarding it as connected with the mesentery, another as a floating kidney, and a third believed it to be ovarian.

I have a record of thirteen cases, of which the chief particulars are represented below in a tabular form:

for them; that fat and flatus have raised a suspicion of their presence; that the abdomen even has been opened to remove a tumor

Age.	Years married.	Seat of Tumor.	Period it had existed.	Symptoms.
26	2	Right Hypochondrium.	Accidentally discovered when under treatment for another ailment.	None.
27	4	" "	One year.	Pain and dyspepsia.
29	8½	Left Hypochondrium.	"	Pain, which came on after exertion.
30	6, sterile.	Right Hypochondrium.	Eighteen months.	Pain and dyspepsia.
35	Married.	Both hypochondria.	Left, nine months. Right, three weeks.	Pain.
38	14	Right Hypochondrium.	One year.	"
47	Married.	Left Iliac.	Seven years.	Pain, occasional.
60	Twice married, now a widow.	Right Iliac.	Twenty years.	Slight occasional pain.
38	17	Right Hypochondrium.	Six months.	Occasional pain.
30	5	" "	Three years and a half.	Dull pain.
45	2, widow.	" "	Two years following violent concussion on railway.	Slight pain in right leg.
40	20	" "	Thirteen years after birth of a child.	Dull pain.
35	9	" "	Accidentally discovered.	None.

In 10 cases, then, the tumor was seated on the right side, in 2 on the left, and in 1 on both sides, its position having in 11 out of the 13 been distinctly in the hypochondrium, twice only in the upper part of the iliac region, and in those two instances allowing of displacement upwards, but not at all in a downward direction. The connection of dyspeptic symptoms with the tumor in the right hypochondrium on two occasions may suggest the probability of its being sometimes formed by the scirrhous pylorus, an hypothesis which, in the case of a patient under the care of Dr. Burrows, was confirmed by post-mortem examination.

Some movable tumors may possibly be connected with the mesentery, and some may admit of the explanation which I have been informed that the late Dr. Abercrombie, of Edinburgh, proposed. He thought that a sort of spasmodic constriction of some of the fibres of the colon inclosed a small collection of flatus, sufficient to form a swelling distinctly perceptible by the hand of the physician, but distinguishable by its resonance on percussion from all solid tumors. I cannot say, however, that I have met with any condition clearly answering to this description, and have no doubt but that movable abdominal tumors presenting the characters above described, are almost, or quite invariably, produced by displacement of the kidney. On this hypothesis, too, one can understand the occasional sudden appearance of the swelling after a violent exertion or strain, as in the case of one of my patients, in whom it followed concussion in a railway carriage, or of a gentleman in whom it was produced by a fall from horseback. M. Cruveilhier[a] has noticed these swellings, and has observed that it is almost always the right kidney which is thus displaced, and that the accident, while very rare in the male subject, is far from being uncommon in the female. He attributes it to the pressure of tightly laced stays upon the liver. "The kidney," says he, "is then compressed between the liver, which is in front, the lower ribs, and the vertebral column, which are behind, and is squeezed, as it were, out of the sort of bed in which it lies without being adherent to it, just as a plum-stone would slip from between the fingers."

I do not know that any further light has been thrown on this accident, or on its mode of production, but a comparison of the numerous cases now on record substantiates the correctness of Cruveilhier's opinion. In the *Archives de Médecine* for 1859, vol. ii, pp. 158 and 301, M. Fritz has collected from various sources 35 cases of floating kidney. Of these 5 only occurred in the male, 30 in the female. In 19 cases the right kidney was movable, in 4 the left; and while in 7 both organs were somewhat misplaced, the mobility of the right kidney was in 5 of these instances much greater than that of the left.

[a] *Anatomie Pathologique Générale*, vol. ii, p. 723.

which was found to have no existence, proves only how large is the possibility of error, how vigilant must be our care if we will avoid a danger which the wisest have not always been so fortunate as to escape.

LECTURE XXVIII.

OVARIAN TUMORS AND DROPSY.

TREATMENT; difficulty of estimating its results. Duration of life in ovarian dropsy. Cases divisible into three classes: some must be let alone, some may be, some require interference.

PROPHYLACTIC MEASURES, and medicinal agents.

OPERATIVE PROCEEDINGS. TAPPING, when absolutely necessary. Opinions as to danger of its performance, statistics of the subject, bad results possibly overestimated, circumstances in which early tapping may be admissible. Mode of performing the operation; danger of exhaustion and of cyst inflammation; their symptoms and treatment.

THERE is some fallacy as well as much truth in almost all popular sayings. Even the adage that a "doubtful remedy is better than none," is not of universal application, for doubtful remedies are often dangerous, and if they fail to cure they frequently aggravate the disease. The danger of the disease itself is an element never to be lost sight of in our estimate of the expediency of interfering with its progress; and if the present suffering it occasions is but small, if its advance is likely to be slow, if it may be interrupted by occasional pauses, we should hesitate to advise any proceeding by which, though perfect cure may possibly be wrought, yet, on the other hand, life may be cut short suddenly. The chances of complete recovery will by few persons be felt to overbalance the risk of immediate death, and I do not think it becomes us to throw the weight of our influence into the scale.

Considerations of this kind are nowhere more in place than in an inquiry into the *treatment of ovarian tumors and dropsy*—a class of diseases which indeed tend progressively from bad to worse, which often bring with them much suffering, but in which, nevertheless, the suffering is not invariable, nor the downward tendency constantly progressive, so that we cannot limit their possible duration, or, from the date of their commencement, calculate with any approach to certainty the time which will elapse before they reach their close.

The reasons for this uncertainty are so obvious as scarcely to need that I should insist upon them here. I may, however, remind you that in many instances we are unable to fix the time at which ovarian disease began; so imperceptible are often its advances, so few the symptoms that accompany its earlier stages, that not infrequently the growth has attained a considerable size before the attention of the patient, or of her medical attendant, is

drawn to its presence. Even after it has been discovered, it is often as difficult to foretell the future progress of the disease as to determine its past duration. The cyst may long remain stationary, its flaccid walls announcing that absorption goes on more rapidly than secretion, or it may possibly disappear altogether. On the other hand, just the opposite course may be run; the barren cyst may become proliferous, or the compound cyst may suddenly, and apparently causelessly, pass into a state of active development, or evidences of malignancy may manifest themselves in a growth presumed for a long time previously to be innocent; while to all these contingencies must be added those inseparable from the various kinds of interference which the mere palliation of the evil in most instances requires. Advocates of the most opposite views with reference to the dangers attendant on ovarian disease are not without ample support for their opinions: cases are to be found of life continuing for years in very tolerable comfort, and even of the sexual functions being duly performed, and pregnancy and labor occurring in spite of it, the patient dying at length of some other perfectly different ailment. Illustrations of just an opposite kind are still more numerous, telling of the rapid development of the growth, of speedy impairment of the general health, of death occurring in one, two, or three years from the commencement of the evil, or of life being cut short even sooner in consequence of some attempt at giving temporary relief, which it was not possible any longer to delay.

The endeavor has been made, indeed, to arrive at more definite results, and the late Mr. Safford Lee[1] collected with characteristic diligence the particulars of 123 cases:

In	38	of which the disease lasted	1 year.
"	25	" "	2 "
"	17	" "	3 "
"	10	" "	4 "
"	3	" "	5 "
"	14	" "	5 to 10 years.
"	6	" "	10 " 12 "
"	5	" "	12 " 16 "
"	4	" "	20 " 25 "
"	1	" "	50 "
	123		

Now from this table it appears that 90 out of 123 cases, or 3 out of 4, or 73.9 per cent., terminated fatally within five years, and more than a third of this number within one year from the observed commencement of the disease. But, on the other hand, between the observed and the real commencement of the disease, there is, as has already been stated, a wide difference, and while the numbers doubtless understate the duration of the evil in many cases where the disease appeared to be most rapid, they probably by no means truly represent the degree to which life was often prolonged in spite of it. Even as they stand, however, the

[1] On *Tumors of the Uterus*, p. 177.

numbers show that in 16 out of 123 cases, or nearly 1 in 7, life continued for a period of from ten to fifty years; and it must not be forgotten, that when a disease has been long quiescent, the patient learns to think but little of it; she speaks of it still less; even her medical attendant is perhaps scarcely aware of its presence; and when she dies either of that or of some other affection, it is doubtful whether he who sees the end had also seen the beginning of the malady. One other point there is, concerning which there can be no doubt, and which invalidates all the statistics on the subject wherewith hitherto we have been furnished; and that is, the wide disparity between the results that different cases yield. One year and fifty years cannot both truly represent the time occupied by the same disease in running its course. We can fix the duration of uterine cancer with tolerable accuracy, and find the disease, when seated in the womb, to obey the same laws as govern it in other parts. We know, too, that the slow-growing fibrous tumors of the uterus have in themselves no tendency to destroy life, though in their course some accident may occur to compromise it, and many others to render it painful. The discrepancy between the results of different cases of ovarian dropsy, on the other hand, plainly shows, what indeed the study of its morbid anatomy has taught us, that under this name several different diseases have been included, having different tendencies, warranting a different prognosis, and calling for different modes of treatment.

In any inquiry into the treatment of the disease these facts must not be lost sight of, but we must consider it with reference to the special form of the affection with which in each separate case we have to do. The question cannot be propounded as to whether this or that plan of treatment is suitable for ovarian dropsy; but, given a certain form of ovarian disease, is this or that proceeding expedient or allowable; or is it wiser to do nothing, or to palliate; or is the attempt to do more, justifiable; and when at length the necessity for interference of *some* kind becomes absolutely unquestionable, are the risks even of palliative proceedings so considerable as to warrant a greater hazard being run for the chances of a perfect cure?

All cases of ovarian dropsy and tumor may for the purposes of therapeutics be considered as belonging to one or other of three classes, according as they are, either

1st. Cases which *may* be let alone.

2d. Cases which *must* be let alone.

3d. Cases *justifying*, or *absolutely requiring interference.*

All cases of ovarian dropsy, or of tumor undistinguishable from it, *may* be let alone in which the growth does not exceed the size of two fists, in which its position does not seriously disturb the functions of the pelvic viscera, in which it is unaccompanied by severe suffering, and, as far as can be ascertained, is not in course of rapid increase. Further, in proportion to the small size of the tumor, to the smoothness of its surface, to its elasticity when

pressed upon, and to its mobility, will be the amount of encouragement which we shall be able to afford to the patient, since there will be the more reason for hoping either that the tumor is one of those cysts of the Wolffian bodies, which never exceed certain comparatively small dimensions, or that it may possibly be a mere dropsy of the Fallopian tube, which, though not equally limited in the size to which it attains, has in it nothing of the serious character that belongs to ovarian dropsy. Even in cases, too, in which neither of these hypotheses is correct, it may still be remembered, that an ovarian cyst, while small, is far more likely to remain stationary than when it has attained a considerable size. The mere size of the tumor, however, provided it does not by its bulk disturb the general health, cannot be taken as an indication for interference. The old maxim, "Quieta non movere," is at least as applicable in medicine as in politics, and you will remember the instance which I mentioned to you,[1] where a tumor considerably larger than the adult head, remained for many years stationary; and when it did increase, was yet long before the operation of tapping became necessary.

Still, when it is said that such tumors are to be let alone, I do not wish to imply that no precautions should be observed, or that nothing can be done to retard their growth. These precautions, however, are comparatively few, and abundantly simple. They may be summed up as consisting in the endeavor to maintain the general health, and to prevent congestion of the pelvic viscera. The first indication, I conceive, implies the avoidance of all such proceedings as courses of mercury, of iodine, of iodide of potass, or of liquor potassæ, agents of whose power in retarding the development of ovarian cysts there is scarcely any evidence, while of their injurious influence on the constitution, when long continued, there is the most abundant proof. To carry out the second object, we should certainly dissuade a person affected with this disease from contracting any matrimonial engagement; though between that and the non-fulfilment of an engagement already formed, or the separation of a married woman from her husband's bed, there is a wide difference, and moral considerations enter into the question which more than counterbalance mere medical rules. Besides this, too, it is, I think, very doubtful whether in the mysterious influence of the mind over the body, disappointed affection, or the removal of a wife from her husband's bed, would not act more injuriously even on the sexual system itself, than the physical causes which alone our restrictions can control. Sexual intercourse, however, should be moderate, and inasmuch as the influence of pregnancy and labor is often, though by no means always unfavorable, giving rise in many cases to irritation of the cyst, to a more rapid increase of its growth, to inflammation of its peritoneal surface, and the formation of adhesions; or of its interior, and to consequent outpouring of pus, it is desirable that

[1] Lecture xxxvi, p. 408.

intercourse should not take place at those seasons, just before or just after a menstrual period, when conception is most likely to occur.

The condition of the bowels must always be most carefully watched, and every attention must be paid to insure the perfectly regular performance of the menstrual function. If the menstrual period is attended by any febrile disturbance, or by any increase of pain in the tumor, the patient must be kept strictly in bed, and four or six leeches must be applied over the painful spot, and repeated every second or third day so long as the pain continues; a warm poultice, or fomentations with spongiopiline being constantly employed in the intervals. As soon as the tumor has risen completely into the abdomen, a well-adapted bandage should be worn, partly for the comfort which it seldom fails to afford to the patient, partly because a cyst fills far less rapidly when moderate compression is made upon it than when no counter-pressure is employed to resist the accumulation of the fluid.

It has, I know, been alleged that the power of medicine over this disease is much more considerable than I have represented. So great, too, is the influence of a name in determining the conduct of most of us, that almost all the remedies of known efficacy in ascites have been assumed to be beneficial in ovarian dropsy. There can be no doubt, too, but that under the influence of such remedies very appreciable diminution in the size of the abdomen has taken place—a diminution, however, which I believe to be due to the absorption of the fluid, which in many cases of abdominal tumor is poured out into the peritoneal cavity, and not to any modification of the contents of the cyst.

Some ovarian tumors, it was said, *might*, others *must*, be let alone. The latter are all those cases, for the most part of rather rapid growth, whose irregular nodulated surface, and whose solid non-fluctuating mass suggests the idea that they are not mere compound cysts, but productions of a malignant character. In most of such cases, too, we find in the patient's history other grounds still more cogent than the anatomical peculiarities of the tumor for avoiding all interference. Such are the facts that the general health has failed simultaneously with the development of the tumor, and that loss of flesh and loss of strength have been early attendants on its progress, and have not first appeared when the different functions of the body had been disordered by its bulk, or when nutrition might be supposed to be impaired by the tax levied on the system for the supply of the mass. Unhappily, the cases which seem most to call for help are those in which it is least possible to afford it, while it is in precisely those which may most safely be let alone that interference has the best chance of success.

Between these two classes, however, there is a third in which present relief is called for, and in which it is in our power to afford it. It is just in these cases that we encounter the inquiry as to the comparative risks and comparative merits of different proceedings,

whether it is much more hazardous to attempt to remove the evil than to palliate it for a time with the almost absolute certainty that again and again it will return, and that on each occasion our power to palliate it will diminish? Nor is the question altogether confined to these cases. The uncertain tenure of health and life, even in instances where the evil seems quiescent, suggests the importance of discovering some proceeding which entails no greater hazard than we can conscientiously advise our patient to encounter for a reasonable prospect of obtaining so great a good, and of freeing herself from danger ever impending, like the fabled sword which hung over the guest at the banquet.

Very numerous, indeed, are the solutions which have been proposed to these inquiries. It is our duty carefully to examine their merit, and carefully to scrutinize the different surgical proceedings that have been recommended for the relief or the cure of ovarian dropsy.

The first of these proceedings which we must notice, the simplest, the least hazardous, and at the same time the most generally applicable, is the *operation of tapping*. Simple as it is, however, opinion is much divided with reference to the circumstances that warrant its performance; for while some practitioners look upon it as too dangerous to be justified by anything short of most absolute necessity, others consider it to be attended by little risk, and to be a palliative all the more valuable since it is sometimes followed by a perfect cure.

Two questions then come before us. The first of these concerns the circumstances which by unanimous consent justify the performance of tapping as a palliative in cases of ovarian dropsy. The second refers to the amount of hazard attendant on the operation, and the consequent expediency or inexpediency of having recourse to it when not actually compelled by the urgency of the patient's symptoms.

The operation is absolutely indicated in all cases where the bulk of the tumor is so considerable as seriously to interfere with the patient's health, or to occasion her very severe suffering; and this, be the supposed nature of the tumor what it may. In proportion as the contents of the tumor are fluid will the relief gained by the operation be considerable; but even though its great bulk should be solid, still the diminution obtained by letting out even some ounces may afford considerable temporary relief to the patient, and will fully justify the experiment.

The state of things which calls thus imperatively for interference varies considerably in different patients, and is far from being absolutely connected either with a certain duration of the disease, or with a certain size of the abdomen. A slowly-increasing growth will often attain to a very large size indeed before it causes serious disorder, and a tumor whose contents are entirely fluid commonly produces less distress than one even of smaller size, into the composition of which solid matter enters in large proportion. One reason of this probably is, that solid tumors more frequently press

upon the abdominal vessels, interfering with the circulation through them, producing effusion into the peritoneal cavity, and disturbing the kidneys in the performance of their function. Orthopnœa, habitual shortness of breath, even when no exertion is made, complete loss of appetite, or sickness, owing in part to the stomach being mechanically prevented from retaining food, pain referred to the liver, and obstinate constipation, with frequent colicky pains independent of the action of the bowels, a very scanty secretion of urine, and a very feeble and thready pulse, with, perhaps, irregularity of the heart's action,—such are the symptoms which, when they begin to occur, indicate the immediate necessity for tapping. Mere unwieldiness in moving about, or discomfort from the tension of the abdominal integuments, though perhaps very painful to bear, cannot be regarded as absolute indications for the operation; and time not infrequently habituates a person to a state of things which at first seemed almost intolerable. Even the circumstance that a tumor is steadily on the increase cannot be taken as necessarily calling for the operation, since ovarian cysts, though large, sometimes come to a stand-still, and to decide in favor of interference when it is possible for a short time longer to delay it, implies that we have answered to our own satisfaction the second question as to the amount of risk attendant upon simple tapping.

In the cases hitherto referred to, the dangers of the operation scarcely enter as an element into our consideration, but tapping takes its place in the same category with various other operations of necessity, such as amputation performed in consequence of injuries, which, how serious soever might be the risk attendant on them, would still be most legitimate, because the only resources at our command.

It would, however, be unreasonable to expect that an operation performed in these circumstances should be free from danger, and this danger arises chiefly from two sources. Great as the relief often is to the patient, a certain amount of shock follows the evacuation of a large quantity of fluid, and patients previously much exhausted sometimes sink in two or three days after tapping. In spite of the warning given to the patient that tapping will in this way probably shorten her days, the choice is not infrequently made to submit to a proceeding which brings at least present ease; nor have I thought myself failing in my duty if, when our art was almost powerless, I tried to secure the last boon our patients ask of us,—a euthanasia. The other danger is one of inflammation of the cyst-walls, issuing in the effusion of lymph and pus into its interior, and not infrequently associated with peritonitis which often proves fatal in the course of two or three days. This latter occurrence, too, seems to be of greater frequency after first tappings than in those cases where the operation has been frequently performed, while death from mere collapse is, as might be supposed, more likely to occur where recourse has often been had to tapping. Besides these two risks, which not unnaturally have

led practitioners to shrink from this operation, another objection has been urged to it on the ground of the increased rapidity with which, after each time of its performance, the fluid reaccumulates within the cyst. Expressed in various ways, the opinion is almost unanimous that tapping is but the beginning of the end, and patients are commonly advised, even at the expense of great inconvenience and discomfort, to put up with the present ill, and not to purchase prematurely a brief respite from suffering at so high a price.

The result of the general impression as to the danger of tapping has been not only to postpone its performance in all cases to as late a period as possible, but also to lead to the endeavor to devise some other proceedings, which, if not in themselves less hazardous, should at least afford the chances of a greater good, and offer, by the high prize which they hold out to the fortunate few, some amends for the hazards that all must run, and in the encounter with which many, perhaps most, must fail. Such endeavors are but the expression of a feeling deeply rooted in the breasts of all, and I see nothing to reprobate either in the surgeon who advises, or in the patient who encounters some great present risk, when in the one scale is placed the expectation of perfect health,—death, indeed, in the other; but still a death which does but anticipate, by a few months, the certain issue of her present suffering existence.

To judge at all fairly, however, on such a question we must not overcharge either side of the picture; and that which it now concerns us to determine is whether the colors in which the results of tapping have been drawn are faithful, or whether they are not somewhat darker than the facts of the case altogether warrant.

The chief, indeed almost the only numerical data of which we are possessed bearing on this subject, are derived from a table of 20 cases compiled by Mr. Southam,[1] of 46 collected by the late Mr. S. Lee,[2] and of 64, the results of which are given by Professor Kiwisch.[3]

Of these 130 cases, 22 terminated fatally within a few hours or days after tapping, and 25 more in the following six months, or, in other words, 34.7 per cent. of the cases ended in the patient's death in the course of half a year after the performance of tapping. In 114 of the 130, death is stated to have taken place

In 22	within a few hours, or in less than ten days after tapping.	
" 25	"	six months.
" 22	"	one year.
" 21	"	two years.
" 11	"	three "
" 13	after a period exceeding three, and sometimes amounting to several years.	
114		

[1] *Med. Gazette*, vol. xxxiii, p. 237, Nov. 24, 1843.
[2] *Op. cit.*, p. 176.
[3] *Op. cit.*, vol. ii, p. 115.

In 109 of these cases we are further informed how often the patients had been tapped.

It appears that	46	died after	the first tapping.
"	10	"	second "
"	25	"	from three to six tappings.
"	15	"	seven to twelve "
"	13	"	more than twelve "
	109		

The greater absolute mortality attendant upon first tappings of course does not represent an equal amount of greater relative danger. Still, when it appears that only 49 of the total 130 cases were instances of the first performance of tapping, and further, that all the 22 patients who died within a period of ten days from the operation had undergone it for the first time, we are, I think, compelled to admit that the first paracentesis is accompanied by perils which are greatly lessened on its repetition. Of 38 patients of mine who underwent the operation of paracentesis abdominis on account of ovarian dropsy, two died of inflammation of the cyst within a few days after its first performance, one sank exhausted thirty-six hours after the second tapping, and a fourth died of exhaustion on the sixth day after the tenth tapping. The others all survived the operation, which in one instance was not repeated on account of the large amount of solid matter that entered into the composition of the tumor, and the serious symptoms which had followed its first performance. In one patient the fluid has never re-collected, and when I last saw her, after the lapse of three years, during which time she had given birth to her fifth child, all traces of the tumor had disappeared, and recovery might be looked on as complete. In a second the cyst, having refilled, spontaneously subsided, and to the best of my knowledge the patient continues free from disease. Three died subsequently after attempts at the extirpation of the cyst, four sank under the progress of the disease, in the course of which tapping was had recourse to more than once, one died of apoplexy, and the remaining patients were still living when I last heard of them, tapping in many having been subsequently repeated on several occasions, and the injection of a solution of iodine having in eight instances been resorted to with results concerning which I shall have more to say hereafter.

Unfavorable, however, as are the conclusions to which we are irresistibly led by facts such as those which have just been mentioned with reference to the ultimate issue of tapping, it is yet very questionable whether they represent the whole of the truth concerning this matter. Some of the data from which the tables were constructed were not collected originally with the view of illustrating the operation of tapping, while the majority of the others are deduced from observations in hospitals, and must therefore, for reasons obvious to all, yield a very high average of unsuccessful results. The cases that seek admission to those institutions are

almost always the least hopeful, generally the most far advanced, not infrequently those of persons who have sought out a place where death may come to them with less suffering than if they awaited it in their own homes. If relieved, such patients quit the hospital, and are often lost sight of; so that while the failures are known, the instances are frequently undiscovered in which life has been prolonged or rendered comparatively comfortable. Almost in proportion as experience concerning this operation is derived from hospital practice, or from observation in private, does the estimate of its danger appear to be increased or lessened, a circumstance which seems to show that the hazards of the operation depend at least as much on the conditions that surround the patient, as on anything inherent in the proceeding itself.[1]

It is, moreover, a question quite open to debate, whether the period at which the operation is generally performed has not contributed largely to its fatal issue? The delay, commonly continued until the different functions are seriously disordered, and the patient's sufferings from mere mechanical causes have become urgent, may on the whole be expedient; but it can scarcely be doubted that it must lessen the prospects of recovery when at length the operation is resorted to. Besides, the favorable results which are said to have followed the early performance of tapping in some of those instances where tight bandaging was associated with it, renders it probable (due allowance being made for the exaggeration by which many of the published reports of cases where this proceeding was resorted to are vitiated) that the mere act of tapping in certain selected cases of ovarian dropsy is unattended by any considerable hazard.

The whole of this subject needs a much more searching investigation than it hitherto has received; but in default of this, I will venture to give my own impressions, and I do so as mere impressions, which further experience may modify or completely change. My present belief, however, is that the dangers of the operation of tapping have on the whole been over-estimated; and further, that while in cases where the amount of solid matter in the growth is considerable, the rule which prescribes the postponement of the operation to the latest possible period is a sound one, it will probably be more expedient in the case of simple ovarian cysts to tap early, before the growth has acquired a large size, and

[1] In the *American Journal of Medical Sciences*, vol. xix, New Series, April, 1850, p. 334, are some observations on the mortality attendant on tapping by Dr. W. Atlee, showing that, even tried by such evidence as that adduced by Mr. S. Lee, the tendency of the operation is, on the whole, to prolong life, not to shorten it. M. Velpeau, too, in a discussion at the *Académie de Médecine* (*Journal Hebdomadaire*, Nov. 28, 1856), demurs to the accuracy of the generally received opinion of the great mortality arising from simple tapping. He admits that in one year he lost four patients after tapping; but these were exceptional cases of large compound cysts, which it was found possible to empty only very partially. With these exceptions he has performed the operation 312 times, on about 98 patients, without any serious results either immediate or remote, and *many* of the patients (an unfortunately vague expression, which much detracts from the value of his statement), survived its first performance ten, fifteen, or twenty years.

before the constitutional powers of the patient have seriously suffered. The early tapping, too, will most likely become more extensively resorted to if experience should confirm the safety of injections of iodine solutions into the cavity of the cyst.

The operation of tapping, as it was generally practised until within the past few years, whether for ascites or for ovarian dropsy, used to appear a very formidable proceeding. The patient, seated on the edge of the bed or of a sofa, was supported in that position by a couple of assistants, while a bandage was placed around her abdomen, which was tightened in proportion as the fluid escaped, and was adjusted and firmly fastened before she was replaced in her bed. In spite of these precautions, however, very distressing faintness was often induced by the operation, and actual syncope was not very uncommon. It had, indeed, been customary in some exceptional cases, as, for instance, when the patient was very feeble, to tap in the recumbent posture; but to the best of my knowledge, Dr. Simpson[1] was the first person who publicly recommended the general performance of the operation in this posture, and it is now generally adopted by all surgeons.

The selection of this attitude avoids all the fuss and preparation which are inseparable from tapping the patient in a sitting posture, and which are so suggestive of the idea that some formidable operation is about to be performed. Nothing more is necessary than to bring the patient to the edge of the bed, so as to allow of her abdomen projecting somewhat beyond it. The bladder should then be emptied by the catheter (a precaution for which the voluntary efforts of the patient are but a very imperfect substitute), and it having been clearly ascertained that fluctuation is distinct, and that no great thickness of solid matter is situated at the point selected for puncture, the skin may be divided for a quarter of an inch or less with a lancet, and the trocar introduced. It has in some rare instances happened that a large venous trunk ramifying on the surface of the cyst has been wounded by the trocar, and that the hemorrhage has had a fatal issue.[2] Such an accident, however, is scarcely to be guarded against by any foresight, while the risk of wounding the epigastric artery is pretty certainly avoided by the selection of the linea alba instead of the linea semilunaris as the situation of the puncture. If there were obviously considerable thickness of solid matter in the former situation, it would no doubt be our duty to puncture in the linea semilunaris, or at some other part where there seemed to be a less thickness of intervening substance. It is, however, quite as easy to empty the cyst through a puncture made in the former situation as in the latter, if the patient incline a little more over towards her face, and its greater safety renders it therefore generally preferable. All pressure of the abdomen in order to get rid of the fluid as

[1] *Ed. Med. Journal*, Oct., 1852; and *Obstetric Works*, vol. i, p. 239.

[2] A remarkable instance of fatal hemorrhage from the wound of a vessel of the omentum which adhered to a large ovarian cyst is related by Scanzoni, *op. cit.*, p. 456.

completely as possible appears to me inexpedient; and I think I have seen inflammation of the cyst excited by such manipulations when rather roughly performed. The application of a flannel bandage afterwards, though not in general necessary, is usually a comfort to the patient; and in cases where any considerable portion of the growth is solid, can scarcely be dispensed with, since, unless supported by external pressure, the mass is apt to fall from side to side with every movement of the body in a manner to occasion much distress.

I have always been accustomed to keep my patient in bed for a day before tapping, and for three or four days afterwards, and to select for the operation a time as distant as possible from a menstrual period. These precautions, indeed, may not in every case be necessary; but, in spite of histories such as that of the patient who every three weeks used to come by omnibus a distance of some five or six miles to Paris, and, having been tapped, immediately returned by the same conveyance, I believe them to be always expedient. In every instance of first tapping, where we can have no data to guide us as to the probable results of the operation, it is scarcely possible to err on the side of caution.

The dangers attendant on the operation of tapping are twofold: that of exhaustion on the one hand, of cyst-inflammation on the other. The previous state of the patient's health has, as might be expected, much to do with the former occurrence, but nothing seems to furnish a guarantee against the latter. It sometimes happens that cyst-inflammation runs its course with scarcely any symptoms other than those of exhaustion; or, rather, I imagine that in patients previously much debilitated, a diseased state of the blood is apt to supervene, and death takes place from pyæmia, of which the cyst-inflammation is the consequence, not the cause. In other instances, however, the sinking of the patient is independent of any recent morbid process, but the slight shock of the operation suffices to disarrange the frail machinery, and to bring it to a stand-still. It is well to bear this risk in mind in all cases where the patient is very weak, and to dissuade from tapping, unless most urgently called for by the difficulty of respiration, or the inability to retain food on the stomach, which the mere mechanical distension of the abdomen sometimes produces. The precaution of letting the fluid out very slowly, of lowering the head and shoulders as it escapes, and of only partially emptying the cyst, are the means by which the danger from exhaustion is best guarded against, while, after the operation is over, careful watching and judicious nursing are more needed than what is strictly called medical treatment.

The cyst-inflammation is a still more serious accident, and all the more from its occurring when least expected, though it is certainly much less likely to attack simple serous cysts than growths of a more compound character, and those especially which partake of the nature of alveolar carcinoma. Its symptoms are seldom very marked at the outset, and the pain which attends it is by no

means proportionate to the danger of the attack. Tenderness on pressure over the tumor is indeed always evident, and sometimes, when the inflammation has extended to the peritoneum, there is likewise severe pain independent of pressure; but a quickened pulse, a general febrile condition, unpreceded, however, by shivering, and sickness, are the signs which should at once excite our apprehension. Of all the symptoms, indeed, vomiting and an irritability of stomach, which rejects all medicine, all food, all drink, though the thirst is usually considerable, are of the greatest moment, since they are almost pathognomonic of this affection. It seldom comes on within the first thirty-six hours, often not until the third day after tapping; while the rate of its progress in fatal cases is variable; death sometimes taking place in three days from its commencement, in other instances not till after the lapse of a week. Whether quick or slow, however, in its advance, symptoms of an acute character are at no time well marked; the pulse seldom has much power, the intense pain often attendant on peritonitis is absent, the bowels, though constipated, answer tolerably readily to medicine, and death usually takes place under the symptoms of depression which accompany pyæmia.

When allowed to go on unchecked for twenty-four or thirty-six hours, the cyst-inflammation is I believe an almost hopeless affection, though if treated quite at the outset, and in women not exhausted by the previous ovarian disease, it yields tolerably readily to treatment. Depletion is the great remedy on which I rely, and local depletion usually answers every end; though, on one occasion, when the symptoms set in with much severity, and indeed more nearly resembled those of acute peritonitis than of mere inflammation of the cyst, I abstracted twelve ounces of blood from the arm with great benefit. Twelve or eighteen leeches, however, applied over the tender part, and followed by a warm poultice frequently renewed, or by perpetual fomentation by means of the spongiopiline, often remove the pain, abate the fever, and stop the sickness. So long as the last-named symptom continues, no amount of improvement in other respects can be considered satisfactory, and whether the tenderness seemed to call for it or not, I should repeat the depletion if the sickness had not ceased, or, at least, were not greatly mitigated. A single large dose of calomel, as ten grains given in powder, sometimes arrests the irritability of the stomach, and obtains the action of the bowels with the smallest amount of general disturbance. The less, however, that the irritable stomach is teased with medicines the better, and iced water in small quantities, or little pieces of ice given to the patient to suck, are by far the best means of relieving the sickness and of quenching the thirst. When the more serious symptoms are passing off, a few spoonfuls of cold beef-tea, or of cold chicken broth, will be found to be the most appropriate food, and that which the stomach will best support.

To see the patient early, to watch her carefully, so as to be ready

with a timely repetition of the depletion if the symptoms do not yield to its first performance, such are the essentials for saving the patient from this disease, in the management of which no time is afforded for elaborate treatment, nor any chance given for retrieving lost opportunities.

LECTURE XXIX.

OVARIAN TUMORS AND DROPSY.

TREATMENT continued. Measures proposed for the radical cure of ovarian dropsy. Tapping and pressure. Subcutaneous puncture of the cyst. Tapping per vaginam. Tapping followed by some contrivance for keeping the wound permanently open; incision and partial excision of the cyst. Tapping, with injection of iodine;—estimate of its advantages and dangers. Enumeration of points concerning which further information is needed.

ALTHOUGH in the last lecture I assigned some reasons for doubting whether the perils attendant on tapping in ovarian dropsy had not been somewhat overrated, it must yet be allowed that the operation very rarely indeed proves curative, that the fluid generally re-collects, and that a reprieve, and commonly but a very brief reprieve, is all that it affords to the patient.

Hence have arisen various modifications of the operation of tapping, each of which has had for its object the favoring the contraction of the cyst, and the retarding, if not the preventing, the reaccumulation of the fluid.

These consist of:

1st. The employment of tight bandaging after the evacuation of the contents of the cyst.

2d. The subcutaneous puncture or incision of the cyst, with the view of allowing of the escape of its contents into the peritoneal cavity, and of thus imitating the occurrences which take place when the cyst bursts spontaneously.

3d. The puncture of the cyst per vaginam, in order to insure its more thorough evacuation, and thereby to increase the chances of its permanent contraction.

4th. The keeping the cyst constantly empty, either by allowing a tube to remain permanently in its cavity, or by rendering the opening into it fistulous.

5th. The employment of medicated injections into the cavity of the cyst, of which the solutions of iodine appear to be the least hazardous as well as the most frequently successful.

Each of these proceedings must be considered in succession.

I. *Tight bandaging after the evacuation of the contents of the cyst.*

The probable utility of tight bandaging as a means of preventing the reaccumulation of the fluid of an ovarian dropsy after

tapping was suggested by Mr. Benjamin Bell;[1] and the late Dr. Hamilton,[2] of Edinburgh, was accustomed to apply a bandage moderately tight round the abdomen as an adjunct to that plan of percussion of the cyst from which he believed that in some instances he had obtained very remarkable results. Mr. Baker Brown,[3] however, was the first who proposed its systematic employment as a means of preventing the growth of ovarian cysts or their refilling after tapping. In his original communications on the subject, he proposed to combine the free use of mercurials and of active diuretics with the local treatment, but subsequently abandoned their use, and has since restricted himself to the application of firm pressure over the tumor. His mode of applying it will be best described in his own words.[4]

"First of all, compresses of linen or lint should be so arranged as to present a convex surface, adapted as nicely as possible to the concavity of the pelvis. Over these compresses straps of adhesive plaster should be applied, so as to embrace the spine, meeting and crossing in front, and be extended from the vertebral articulation of the eighth rib to the sacrum. Over this strapping either a broad flannel roller, or, still better, a band with strings and loops which tie in front, may be applied; or a well-made bandage, which, by lacing in front, may be gradually tightened, as made at my suggestion by Mr. Spratt, 2 Brook Street. These bandages must be prevented from slipping upwards by a strap around each thigh. Both the compresses and the bandages will require watching and adjusting from time to time, lest by unequal pressure the bowels or bladder be subjected to inconvenience. Also the crest of the ilium should be guarded with thick buffalo skin or amadou plaster."

This proceeding is recommended as especially applicable for cases of simple ovarian cysts, free from adhesions, with clear and not albuminous contents, and when time and the condition of the patient admit of its persevering employment. Such, however, are the very cases in which there is the greatest probability of the spontaneous cure of the disease, of which two instances after a single tapping have come under my own observation. If to this fact we likewise add the small number of the reported cures effected by this means, and the circumstance that the reality, or at any rate the permanence, of some of them is more than doubtful, we can, I think, come to no other conclusion than that the *curative* power of compression of the cyst, either before or after the evacuation of its contents, is not at all established.

At the same time, however, there can be no doubt but that the enlargement or the refilling of an ovarian cyst may be much retarded by the patient constantly wearing a well-adjusted bandage,

[1] *System of Surgery*, vol. v, p. 246.
[2] *Practical Observations on Midwifery*, 8vo., 2d ed., Edinburgh, 1840, p. 62.
[3] At first in the *Lancet*, and afterwards in his work on *Diseases of Women*, &c. 8vo., 1854, p. 213.
[4] *Op. cit.*, p. 212.

though it is obvious that no kind of compress and bandage, how well soever they may be adjusted, can do more than interfere with its rising above the pelvic brim, that they cannot press upon it at all until it has acquired a certain magnitude, which, if not considerable, is yet quite sufficient to render the mere mechanical obliteration of its cavity almost or altogether impossible. In some instances it is probable that inflammation of the cyst may be excited by very firm pressure, and that thus adhesion between its walls and a permanent cure may be effected; but such cases must be exceptional, are probably very rare, and no such result can be calculated on as at all likely to take place from mere compression.

II. It has been suggested that an attempt should be made by the *subcutaneous puncture of the dropsical ovarium* to imitate nature's own proceedings when the cyst gives way, and pours out its contents into the peritoneal cavity.

This is, however, a suggestion on theoretical grounds, rather than a mode of treatment which has been brought to the test of actual experiment.[1] Its expediency turns in part on the answer (at present by no means an encouraging one) to be given to the inquiry as to the danger to life attendant on the spontaneous rupture of ovarian cysts. But it must also not be forgotten that while very often fatal, the accident has in a large proportion of the cases where the patients survived, been followed by the speedy re-collection of the fluid. Moreover, by the subcutaneous puncture of the cyst we should empty into the peritoneal cavity fluid of the nature of which, and the probability of its exciting serious inflammation, we must be almost entirely ignorant. The direct puncture of the cyst through the abdominal walls in order to ascertain this point, would at once deprive the operation of what has been alleged as its chief recommendation, namely the avoidance of any communication between the interior of the cyst and the external air.

III. *The puncture of the cyst through the vagina* instead of through the abdominal walls, has been advocated as a means of insuring the more complete evacuation of the fluid, and consequently of increasing the probabilities of a permanent cure.

The question of the advantages of this proceeding turns, I apprehend, very much on the view taken of the expediency of early tapping. In the case of an ovarian cyst which, though still small, though smooth, elastic, and, as far as can be ascertained, simple in its character, is yet obviously increasing, tapping per vaginam appears to me to have the advantages of completely emptying the cyst, of excluding the admission of air, and of wounding the peritoneum in a situation where, as far as I have seen, wounds are less often resented than when inflicted higher

[1] Dr. Tilt, indeed, *Lancet*, Aug. 5, 1848, p. 146, mentions an instance in which it was adopted with success under the direction of M. Récamier, but I am not aware of any other case in which this proceeding was attempted.

in the abdominal cavity. On the other hand, for the following reasons, I do not think the proceeding expedient in cases where the tumor has attained any considerable size.

1st. Because the cyst, when large, sometimes prevents the bladder from rising out of the pelvic cavity. The organ consequently becomes much altered in shape, and it is spread out laterally in such a way as to expose it with no very great unskilfulness on the part of the operator to the risk of injury by the trocar.

2d. In the case of all compound cysts, the larger are commonly those which are distinguishable in the abdominal cavity, the smaller cysts and the greater proportion of solid matter are to be found near its pedicle. Hence a puncture per vaginam is likely, in these circumstances, to prove less efficacious than tapping the cyst through the abdominal walls.

3d. The risk of hemorrhage from wounding some large vessel is greater when the puncture is made near the pedicle of the tumor. Except in those cases, therefore, where the cyst is very small, or where it is proposed to follow up the puncture by some further proceeding, it is not desirable to deviate from the ordinary mode of tapping.

IV. It has been recommended to *keep the cyst constantly empty*, either by means of a tube retained permanently in its cavity, or by rendering the opening into it fistulous.

As one of the great drawbacks from the simple puncture of an ovarian cyst consists in the rapidity with which the fluid reaccumulates, so nothing would seem a more obvious means of preventing this evil than keeping the opening permanent. The idea, indeed is as old as Celsus,[1] who gives very detailed directions for fixing a leaden or copper tube in the wound, and, after partly evacuating the fluid, closing its orifice, and then allowing the daily escape of about half a pint at a time till it is entirely drained away. The directions of Celsus apply, indeed, to cases of ascites, for the distinction between it and encysted dropsy was not then understood; and to this circumstance it is probably in some measure to be attributed that like many other suggestions of the old writers it remained unnoticed. In the middle of the eighteenth century, however, the celebrated French surgeon, Le Dran,[2] adopted a somewhat similar proceeding. His operation, indeed, was a much more formidable one than that of Celsus, inasmuch as he enlarged the opening into the ovarian sac to the extent of four inches, then introduced into it a leaden tube of considerable size, and at length, after a hazardous suppuration had continued for some time, the

[1] *De Médicinâ*, lib. vii, cap. xv. See page 362 of Milligan's edition, Edinburgh, 1831. My attention was called to this passage by Fock's extremely able paper on the operative treatment of ovarian cysts, in *Monatschrift f. Geburtskunde*, vol. vii, p. 332, which contains a good critique on the comparative merits of various proceedings.

[2] *Memoires de l'Académie Royale de Chirurgie*, tome vi, 12mo., Paris, 1853, pp. 51 and 73.

patient recovered, though in all cases but one a permanently fistulous opening into the cyst was left behind. Isolated instances are to be found from that time in the medical journals, in which, purposely or by accident, the opening into an ovarian cyst had remained unclosed, and the consequent suppuration had been followed by the contraction, or even by the complete obliteration of its cavity. It is, however, only within the past twenty years that any systematic attempts have been made to carry this idea into practice, as a means of effecting the radical cure of ovarian dropsy in cases not amenable to other modes of treatment, or in which their employment is shrunk from as being too hazardous.

There are three different modes by which it has been endeavored to obtain the contraction or obliteration of the cyst.

1st. By leaving a tube in the aperture formed after tapping through the abdominal walls, or by stitching the edge of the cyst wound to that of the integuments so as to keep the opening permanently fistulous.

2d. By tapping per vaginam, and securing a tube in the opening.

3d. By excising a portion of cyst-wall, either with or without subsequent closure of the external wound.

All these proceedings have this in common: that the inflammation, and more or less complete destruction of the cyst, or at least of its secreting membrane, is the condition of their success, while their common danger arises from the difficulty of restraining that inflammation within safe bounds. None of them have been resorted to sufficiently often to furnish any trustworthy body of statistics illustrative of their results; but the cases related by Mr. Baker Brown,[1] who is an advocate of their performance, plainly show the nature and the amount of the hazard to which the patient is exposed. My own experience of the first of these operations is derived from two cases, in both of which an exploratory incision had been made with the intention, had not the unexpected presence of adhesions prevented it, of extirpating the cyst. The cases had a fatal issue, which took place in one instance in the course of ninety-six hours, the patient dying apparently exhausted by the profuse sero-purulent discharge. No tube was introduced either in this or in the other case; but the edges of the cyst were simply stitched to those of the integuments in the first case, while in the second the opening remained fistulous of its own accord. In that instance the cyst was multilocular, with a considerable amount of solid matter. Life was prolonged for seventeen days, during which the symptoms were those of exhaustion, gradually increasing, but unattended by any apparent suffering. The discharge from the cyst was horribly offensive, and the washing it out on several occasions with tepid water had no influence in modifying this condition. After death the same kind of morbid appearances was observed in both cases, namely, cyst-inflammation,

[1] *Op. cit.*, pp. 227 and 237.

with great softening of its wall, a deposit of lymph on its interior, and some peritonitis, which, however, in the first case was not of recent date. In neither instance was there more than a very small quantity of pus within the cyst, and I suppose that if the opening be moderately free, the pressure of the surrounding viscera will keep the sac nearly empty. It has, indeed, been proposed, in order to obviate all risk of the accumulation of the contents of the cyst within its cavity, that the patient should, as far as possible, observe the prone position, or that the incision into the cyst should be made in the linea semilunaris, a practice adopted by Mr. Brown, or in the lateral region in the situation of a line drawn from the last rib to the iliac crest, as very strenuously urged by the late Dr. Bühring, of Berlin.[1]

The danger of the proceeding does not appear to be of a kind which any modification in the seat of the opening would remove, or perhaps even much lessen. Still this point is one not altogether to be lost sight of, since to the circumstance of the more eligible situation of the opening in cases where the puncture is made per vaginam must be attributed, in part, the more favorable results which have followed that operation.

The great advocate of the puncture per vaginam was the late Professor Kiwisch,[2] whose colleague and successor, Professor Scanzoni, of Würzburg, speaks of the proceeding in terms scarcely less eulogistic. The former, indeed, gives no data from which the exact proportion of successes to failures can be arrived at (an omission which in many other instances detracts from the value of his statements), but Professor Scanzoni[3] gives a very clear account of the results which he has obtained, and they are wonderfully favorable. He says that in 8 out of 14 cases a perfect cure followed the operation; that in 2 the fluid re-collected in the course of a few weeks; that 1 died of typhus fever two months afterwards, and that 3 patients were lost sight of; but that in no instance did death take place from the immediate effects of the operation. At the same time, however, he admits the possibility of such an occurrence, and mentions the case of a young woman, aged nineteen, who died of extensive peritonitis a few days after the performance of this operation on her by Professor Kiwisch. For some reason, too, which he does not assign, even this amount of supposed success has apparently been insufficient to induce Scanzoni to persevere in this proceeding, since the third edition of his valuable work on *Diseases of Women*, published at the end of 1863, contains no reference to any fresh cases, but a mere textual reprint[4] of the facts contained in the second edition, which appeared six years before.

It always appeared to me that an unnecessary degree of violence

[1] *Die Heilung der Eierstockgeschwülste*, 8vo., Berlin, 1848.

[2] At first in the *Prager Vierteljahrschrift*, vol. x. p. 87; and afterwards in his work, to which reference has so often been made. See vol. ii, p. 102.

[3] *Op. cit.*, p. 406.

[4] *Op. cit.*, 3d ed., p. 462.

was inflicted on the cyst by the operation as practised by Kiwisch. He tapped the cyst per vaginam once in order to ascertain that the cyst was a simple one, a proceeding which, though it involves a delay of some weeks, is certainly expedient in every case of ovarian dropsy, since now and then the fluid does not re-collect, and it is always desirable to give the patient that chance, even though it be but slender. So soon as the fluid had re-collected sufficiently to allow of the repetition of the puncture, the patient being placed in a semi-recumbent posture, her feet resting on two stools, and her knees separated by assistants, a small canula, curved so as to correspond with the axis of the pelvis, was carried along the fingers and introduced through the roof of the vagina into the cyst. When but a small quantity of fluid had escaped, a grooved director, curved so as to correspond with the canula, was introduced through it, and the canula then withdrawn. A narrow probe pointed bistoury was then carried along the director, and the wound enlarged so as to admit the index finger to examine the interior of the cyst, and to allow of the ready escape of its contents. A metal tube of the thickness of the thumb, terminating in a rounded, slightly bulbous extremity, was next introduced into the cyst, and retained there by a T bandage. Professor Scanzoni adopts a similar plan, though he employs a straight trocar instead of one curved like that of Kiwisch, and leaves the silver canula in the wound, which he does not enlarge, unless the contents of the cyst are too thick to flow out readily, in which case he enlarges the opening by a long-handled knife with a blade an inch and a half long, which he introduces through the canula for this purpose.

In the three cases in which I performed this operation, and which were carefully selected as suitable for it, I employed a trocar and canula having a curve like that of Kiwisch's instrument, and nearly as big round as the little finger. Through the canula a long elastic tube of the size of a No. 12 catheter was introduced, and the canula was withdrawn over it, while the tube was easily retained in the cyst by carrying it through a little silver collar in which it was fixed by a screw, the collar itself being attached to a framework such as used to be employed for retaining the uterine supporter in its place, and secured in a similar manner by tapes passing round the pelvis and thighs of the patient.

My belief is, that the operation thus modified in its details is attended by less discomfort, and also by a smaller amount of risk, than when an incision is made into the cyst and a heavy metallic tube afterwards fixed in the opening. Be this as it may, however, the proceeding has appeared to me to be attended by much more hazard than would be inferred from the language of Kiwisch or Scanzoni. The death of one of my patients was, indeed, not due to causes necessarily connected with the operation; but in the other two, who eventually recovered, the symptoms of inflammation beginning in the cyst and extending to the peritoneum were so formidable that their life was for some thirty-six hours in most

imminent danger, and most active local depletion was needed to subdue the mischief. Scanzoni, indeed, says that in some of his cases no symptoms of reaction followed the operation, nor any signs of local inflammation, but the tumor gradually diminished in size, and in the course of a few days all discharge had ceased, so that the canula was sometimes withdrawn as early as the eighth or tenth day, or even sooner. Both he and Kiwisch, however, speak of the general occurrence of severe cyst-inflammation, during the continuance of which a thin or sanious discharge is poured out, and the local tenderness is extreme. Kiwisch speaks of the gradual subsidence of these symptoms in from ten to twenty days, and of the discharge then gradually assuming a puriform character, but not finally ceasing until from five to seven weeks, previous to which it is not prudent permanently to withdraw the tube. During this time the cyst should be often syringed out gently with tepid water, and I believe the direction that this should be done twice a day is very judicious. I may also add that if an elastic tube be employed, that will require to be changed every five or six days, and I have been compelled by the contraction of the opening to dilate it by means of a sponge tent introduced for a few hours, before it would readmit a tube as large as that which had previously been placed there.

The one great peril of this operation seems to be the cyst-inflammation, and this surmounted, the risk of the hectic symptoms occurring, of pyæmia and its consequences, does certainly seem to be much smaller than when the puncture is made in the abdominal walls. The most energetic antiphlogistic and depletory treatment afford the only chance of subduing the cyst-inflammation; and if very formidable, and not yielding at once to treatment, it would of course be our duty to withdraw the tube and to postpone the attempt at curing the disease to the more pressing necessity of preserving the patient's life.

I ought to add that the results of the operation were, on the whole, satisfactory in the two patients who survived its performance. I lost sight of one, however, within two months after her discharge from the hospital, though up to that time the fluid had not re-collected. The other patient continues now, after the lapse of twelve years, in very tolerable health, and stands all day to serve in a confectioner's shop. Her case was one of fat cyst of the ovary, consequently not one in which its complete obliteration was likely to occur. Nor, indeed, did this happen, but an opening into the cyst remained fistulous, and from ℥iij to ℥vi of purulent matter escaped thus almost every day for several years, while if the discharge for a day or two became very scanty, headache occurred, and the patient felt various discomforts, which again ceased on the reappearance of the wonted secretion. About four years since, however, all discharge ceased, and an ill-defined solid mass, the size of an orange, behind the uterus, is now the only evidence of her previous disease.

Whatever may be thought of the advantages of this operation,

it is not possible to adopt it in a very large number of cases, since the ovarian cyst often rises at a comparatively early period out of the pelvic cavity. In many others, also, it is clearly inexpedient, since in none but simple cysts is cure by this method possible. In the case of a small simple cyst, however, it appears to me more than doubtful whether we are justified in exposing a patient to a danger so very formidable as that of the cyst-inflammation which this operation almost invariably provokes. At any rate, we cannot, I think, rest satisfied with a proceeding, the indications for which must be furnished by some purely exceptional conditions, but must carry our inquiries further after some measures more certain, or more safe.

The dangers which attend on the incision of ovarian cysts, or on any attempt to keep the puncture made in tapping permanently fistulous, accompany in a still greater degree the *excision of a portion of the cyst-wall.* No instance of the performance of this operation has come under my own notice, but several cases are reported in the medical journals both of its successful and its non-successful employment. In some instances it was had recourse to in consequence of unexpected adhesions preventing the complete removal of the tumor, as in the patients operated on by Martini,[1] Bühring,[2] Poland,[3] Prince,[4] and Atlee,[5] of whom 4 died and 3 recovered. But it has also been selected in cases of thin-walled cysts, uncomplicated with adhesions, and existing in patients whose health was but little impaired, on the supposition that partial excision might be found to be a less hazardous operation than total extirpation of a cyst. In such or such-like conditions, the operation has been performed by Mr. Wilson, of Bristol,[6] Mr. Brown, of London,[7] and Mr. Crouch;[8] and of these 6 cases, 2 terminated fatally, 4 had a favorable issue. One of the patients died from hemorrhage, the other from exhaustion and the effusion of purulent matter from the cyst into the peritoneal cavity; while so alarming were the symptoms of inflammation in one of Mr. Brown's cases, that it was considered necessary to bleed the patient from the arm four times in the first forty-eight hours after the operation.

The existence of adhesions such as prevent the complete extirpation of an ovarian cyst may possibly justify the incision into it, and the allowing the escape of its contents, though it is doubtful whether the risks of this proceeding do not outweigh the probabilities of success. The excision of a portion of the cyst, and the return of the remainder into the abdominal cavity, rest for their

[1] *Rust's Magazin*, vol. xv, p. 436.
[2] *Op. cit.*, cases vii and viii, pp. 37 and 43.
[3] *Guy's Hospital Reports*, 3d series, vol. i, p. 63.
[4] *American Journal*, July 1850, vol. xlv, p. 267.
[5] *Ibid.*, April 1855, p. 387. Nos. 9, 12, and 13, in his table.
[6] *Provincial Medical Journal*, 1851, p. 33. [7] *Op. cit.*, p. 235.
[8] *Association Medical Journal*, p. 60. In this, unlike the others, the cyst-wall was of very considerable thickness. It is worth notice, too, that no fewer than seventeen small arteries required ligature.

justification on the assumption that the fluid, unchanged by the grave injury inflicted on the cyst, will be absorbed by the peritoneum,—that the cyst itself will continue for but a short time to secrete, and will then become altered in character, and probably calcified. We need, however, some guarantee of the probability of this occurrence usually taking place, some evidence that the excision of a large portion of the cyst is not likely to be followed by very acute inflammation of that which is left behind, that the secretion from it will not become sanious or purulent, and consequently will not be likely to excite violent peritonitis. At present we have no grounds for such expectations, and consequently no encouragement to imitate this proceeding,[1] which seems, indeed, now to have fallen into well-merited disuse.

V. The *employment of iodine injections* into the cavity of the cyst with the view of preventing the reaccumulation of the fluid.

In many of the cases to which reference has hitherto been made, injections into the cyst were employed either for the purpose of more completely evacuating its contents, or with the view of exciting such a measure of active inflammation of its walls as should lead more quickly or more surely to the obliteration of its cavity. In all these instances the injections were but subsidiary measures, neither much relied on by the operators, nor to which any great share in producing the patient's recovery (where recovery did take place) could be attributed. Of late years, however, the attempt has been made to destroy the secreting power of the cyst by the injection into it of a solution of iodine, a practice suggested by the success of a similar mode of treating hydrocele first adopted by Sir Ranald Martin and M. Velpeau. The first reported cases of the employment of iodine injections in ovarian cysts were published by M. Thomas in 1851;[2] though M. Boinet,[3] who is so strong an advocate of the measure, first put it in practice in the year 1848. Since that time it has been repeatedly had recourse to both in this country and on the continent, and the results hitherto obtained lead to the hope that in a very large proportion of cases it will be found to check the reaccumulation of the fluid, and in many instances to prevent it completely, while it appears to be attended by less serious danger than any other operation for the radical cure of ovarian dropsy. Some of the advocates of its employment, indeed, represent the injection of iodine as being less hazardous than tapping unaccompanied by it; but we may hesitate to accept this conclusion till the statements concerning it are more definite than the alleged results of "twenty *or* thirty" cases.[4] The

[1] A judgment still more unfavorable to this proceeding has been passed by Fock, in his able critique, pp. 362–367; and in even more unqualified terms by Scanzoni, *op. cit.*, p. 470.

[2] *Revue Méd. Chir.*, Feb., 1851; and Schmidt's *Jahrb.*, 1851, No. vi, p. 327.

[3] *Iodothérapie*, &c., 8vo., Paris, 1855, p. 429.

[4] Dr. Simpson, in *Lancet*, March 21, 1857, says that only one death occurred in twenty *or* thirty cases in which he had used the injections of iodine. Singularly enough, this statement appears in a paper devoted to a defence of statistics. His Lecture in the *Medical Times* for Jan. 28, 1860, is equally vague, for he speaks there of forty *or* fifty.

only statistics with which we are yet furnished sufficient in number and in apparent exactness to warrant any conclusion being drawn from them, are those of M. Boinet,[1] who has published the results of 45 operations on 44 patients, one having had two cysts, which were tapped and injected at different times:

Age of Patients.	Cases.	Cures.	Failures.	Deaths.
From 15 to 20 years,	2	1	1	0
" 20 " 30 "	7	5	1	1
" 30 " 40 "	17	16	0	1
" 40 " 50 "	11	6	2	3
" 50 " 60 "	5	2	0	3
" 60 " 78 "	3	1	1	1
	45	31	5	9

In 34 of the cases the cysts were simple; in 11 compound. All the successes occurred where the cyst was simple; but 3 deaths also followed the injection of simple cysts. All the operations on compound cysts failed; and 6 of them were followed by the patients' death; though certainly in many of these cases death would have taken place as soon, possibly even sooner, if interference had not been resorted to. In 19 of the 45 cases the puncture and injection were employed only once, and in 16 of the number a permanent cure was obtained.

19	injected	once,	16	were cured,	2	failures,	1 death.
7	"	twice,	5	"	1	"	1 "
6	"	thrice,	4	"	1	"	1 "
4[2]	"	four,	2	"	1	"	1 "
4	"	six,	2	"	0	"	2 "
2	"	seventeen,	1	"	0	"	1 "
2	"	nine,	0	"	0	"	2 "

The whole of M. Boinet's paper deserves an attentive perusal; for even after every allowance has been made for the over-estimate of success into which the advocate of any peculiar mode of treatment is almost sure to fall, these results still remain far more favorable than have been obtained by any other mode devised for the radical cure of ovarian dropsy.

The experience of others, too, confirms in a great measure Boinet's statements, for M. Cazeaux[3] professes to have had 48 cures out of 62 injections of single ovarian cysts, 11 cases in which the advance of disease was retarded, and only 3 deaths. M. Velpeau, too, in the discussion at the Academy of Medicine in Paris, in the year 1856,[4] estimated the operations which had been made down to that time at 130, of which only 30 terminated fatally, 64 were permanent cures, while the fluid reaccumulated in 36. In 20 of the 30 fatal cases, however, the opening into the cyst had been maintained fistulous, and to this proceeding, which

[1] *Gazette Hebdomadaire*, Nov. 21, 1856, p. 828.

[2] In one of these cases, though the tumor was punctured four times, it was injected only thrice, and in another only twice.

[3] As quoted by Schuh. See *Canstatts Jahresbericht* for 1859, 8vo., iv, Würzburg, 1860, p. 351.

[4] *Bulletin de l'Académie de Médecine*, 1856.

he characterizes as bad and detestable, M. Velpeau is disposed to attribute the patient's death, rather than to the mere employment of the iodine injections. The elaborate work of Günther,[1] contains the statistics of these injections down to the year 1859, and though the results are far less favorable than those of Boinet, Cazeaux, or of Dr. Simpson, they yet are in the main very encouraging. Out of 158 cases, there were,

32 recoveries.
48 relapses.
13 in which no result was observed.
59 deaths.
6 results not stated.

In other words, of the cases whose results were known, 21 per cent. had a favorable issue, 38.8 terminated in the patient's death. These figures do not yield data such as to enable us to judge of the suitability of the different cases for the injection; of the danger which those patients ran who merely survived, or those who were actually cured, nor of the degree to which, in the instances where death took place, the fatal event was directly caused, or notably hastened, by the injection. These, however, are the very points concerning which we need accurate information before we can at all justly appreciate the indications, or contraindications, for this or for any other operation.

Forty or fifty cases of injection of iodine into ovarian cysts, followed by only one death, is a result more favorable than any one, save Dr. Simpson, has ever attained; but, at the same time, the dangers of the proceeding appear to be dependent, to a considerable degree, on causes within the control of the operator. In the earlier cases the use of the injection was associated with the attempt to keep the cyst-wound open, and this proceeding no doubt had a considerable share in bringing about the fatal issue. The allowing the solution to remain in the cyst, possibly also the employment of too strong a solution, are also important elements to be taken into account in estimating the risks of iodine injections. M. Boinet was accustomed to employ a mixture of equal parts of distilled water, and the tincture of iodine of the Paris Pharmacopœia, which contains more than twice as much iodine as the compound tincture of the London Pharmacopœia; the proportion being 1 part to 12½ in the former, 1 to 29 in the latter. From ℥iv to ℥viii or ℥x of this mixture, to which some iodide of potass has been added to insure the complete solution of the iodine, are thrown into the cyst, and after being allowed to remain there for from seven to ten minutes, are withdrawn through the canula. Although, in many instances, a considerable quantity of the tincture of iodine has remained behind in the cyst without any bad symptoms resulting, M. Boinet always prefers allowing of its escape after the lapse of some minutes. No one can read

[1] *Lehre der Blutigen Operationen*, folio, 38 Lieferung, Leipzig, 1859, p. 186.

the particulars of M. Teale's cases,[1] of which one proved fatal, while the other two patients remained unconscious for fifteen and fourteen hours respectively, without feeling that the hazard is greatly increased by allowing the fluid to remain. The same symptoms of most formidable depression are also noticed in the report of a case under the care of Mr. Brown in St. Mary's Hospital.[2] That gentleman appears usually to allow the solution of iodine to remain in the cyst, and to combat the formidable symptoms which result from the practice by the liberal administration of wine and brandy. Among my patients at St. Bartholomew's Hospital, in whom the injection has never been allowed to remain more than ten minutes in the cyst, serious depression only once followed its employment; and I very much doubt the propriety of adding to the patient's risks those of poisoning by iodine, when there seems good reason for the belief that the peculiar curative influence of the agent is exerted even after a very short contact with the cyst-walls.

The nature of this influence is still but little understood. It is clear that cyst inflammation is not a necessary condition for success; for in several instances where no reaccumulation of fluid has taken place no pain has followed the operation, nor any constitutional disturbance, but the cyst once emptied has not refilled, and recovery has not been purchased by the suffering or the peril which seem inseparable from all other modes of cure of ovarian dropsy. We have at present no account of the appearances found on dissection after the successful employment of this proceeding in ovarian disease. Observation, however, has already taught us that the radical cure of hydrocele by no means of necessity implies the formation of adhesions between the opposite surfaces of the sac. Such adhesions, too, appear to occur less often after the use of iodine injections than after any of the other usual surgical proceedings for the cure of hydrocele,[3] and if the opposite surfaces of the comparatively small cyst in that case fail to become adherent, it is little likely that union should take place between the sides of a large sac which has been distended by many quarts of fluid. It is possible that something is lost of that security against relapse, which enhances so much the value of any cure; it is certain, however, that much is gained in safety if we can avoid the risks of a disease so formidable, so difficult to control, as cyst-inflammation.

Even after all precautions have been taken, and when the injection is employed in cases apparently best suited for it, unexpected death sometimes takes place, as in instances recorded by Löwenhardt[4] and Legrand.[5] Löwenhardt's patient died, apparently from mere shock, fourteen hours after a first tapping and injection. The

[1] Reported by Mr. Hardwick in *Medical Times*, Jan. 31 and Feb. 7, 1857.

[2] *Lancet*, March 21, 1857, p. 290.

[3] See the observations of M. Hutin on the cure of hydrocele, quoted by M. Boinet, *op. cit.*, p. 270.

[4] *Monatschrift für Geburtskunde*, vol. xvi, p. 241.

[5] *Gazette des Hôpitaux*, July 9, 1861, p. 320, and Oct. 12, 1861, p. 479.

injection was accompanied with intense pain, and followed by great depression, but no trace of peritonitis or of cyst-inflammation was found on examining the body after death. Both of Legrand's patients died of peritonitis. In one, tapping and the injection of iodine had been resorted to six months before, without the slightest symptom of local discomfort or constitutional disturbance. In the other, tapping with iodine injection had been resorted to nine times; on the last occasion, four years previously, the disease had seemed to be brought to a standstill, but, after the lapse of that time, a fresh puncture and injection became necessary. On its repetition, three months later, or in other words, on occasion of the eleventh puncture and injection, violent peritonitic symptoms came on, under which the patient sank in the course of twenty-seven hours.

My own experience, which extends but to ten cases, is too limited to be of much value, but I have thrown its results into a tabular form for convenience of reference.

The first thing, perhaps, which strikes one in looking over the table, is the fact that in no instance did the injection[1] have a fatal result, except in that case in which it escaped into the abdominal cavity, while three times no constitutional disturbance whatever was produced by the proceeding; and, further, it is worth notice that no connection seemed to subsist between the severity of the symptoms that were produced in some cases, and the permanent cure of the patient. This uncertainty with reference to the severity of the symptoms following the injection, has also been remarked upon by Schuh,[2] who says, that "the primary effects of iodine injections are very variable, and cannot at all be estimated beforehand. Even in the same patient an injection will sometimes give rise to no sign of either local or constitutional reaction, while another will be followed by a storm of perilous symptoms." Cyst-inflammation, indeed, appeared to be excited on several occasions, though it yielded tolerably readily to moderate depletion. Its signs were in most instances partly masked, partly exaggerated by the symptoms of iodism, as those phenomena have been termed which are produced by the absorption of large quantities of iodine into the blood. Great abdominal pain, usually, however, speedily abating, extreme depression, cold extremities, a very frequent and very feeble pulse, which sometimes becomes altogether imperceptible at the wrist for a few hours, a sense of sickness, often accompanied by actual vomiting, drowsiness without sleep, thirst, and a metallic taste in the mouth, are the symptoms which occasionally follow immediately, or within the course of a few hours

[1] The injection which I have been accustomed to employ is a solution prepared at the time, as recommended by M. Guibourt of Paris (see Boinet, *op. cit.*, p. 101), and which consists of 5 parts of iodine, 5 of iodide of potassa, 50 of spirit, and 100 of water. The quantity of iodine which this mixture contains does not differ materially from that which would be present in a mixture of equal parts of compound tincture of iodine of the London Pharmacopœia, and distilled water.

[2] As reported in Canstatt's *Jahresbericht*, vol. iv, Würzburg, 1861, p. 401.

TABLE SHOWING THE RESULT OF IODINE INJECTIONS IN TEN CASES OF OVARIAN DROPSY.

No.	Age.	Civil State.	Duration of Disease.	Previous Tappings.	Ovary affected.	Nature of Cyst.	Quantity evacuated before injection.	Immediate effects.	Progress.	Results.
1	26 years.	Single.	4 years.	Four. Cyst ruptured into abdomen twice.	Right.	Single.	5 pints.	Cyst inflammation. Iodism.	Tapped in 18 months. Married in 2 years. Had 3 pregnancies. Once went full time. Tapped 20 times in 7 years.	Possible retardation of disease.
2	39 "	Married.	2 "	None.	Right.	Single.	11 "	Active inflammatory symptoms.	Symptoms yielded to depletion readily. At end of 2 years fluid not re-collected.	Cure.
3	29 "	Single.	1 "	One.	Both.	Multilocular partly solid.	8 "	Iodism, extreme depression.	Gradually rallied; but fluid re-collected, and has been thrice tapped in ensuing 12 months.	No benefit.
4	22 "	Single.	2 "	One.	Right.	Supposed single.	8 "	No symptom.	For 2 years continued perfectly well; in 2¼ years tumor formed, with a distinct mass, possibly the remains of former cyst on its wall. Tapped again, and injected, but fluid immediately re-collected.	Cure of the first cyst and consequent retardation of disease; died 6 years from first symptom.
5	31 "	Married.	2 "	One.	Right.	Supposed single.	5½ "	Inflammatory symptoms.	The symptoms yielded readily. At end of 18 months cyst not refilled, but on its wall two masses were felt, the size of an orange.	Cure of first cyst; disease retarded.
6	21 "	Single.	4 "	One.	Left.	Single.	3½ "	Immediate intense pain; operation discontinued.	A watery solution of iodine was employed. The cyst was successfully removed some months after by Mr. Humphry of Cambridge. It was quite unadherent.	None; operation unfinished.
7	35 "	Married.	4 "	Once, and twice emptied itself at umbilicus.	Left.	Malignant.	16 pints on each of three occasions in course of 3 months.	No symptom.	The quantity of pus in the fluid was much diminished after first injection, and amendment after it seemed considerable. The other two had no effect. Death from exhaustion and phlegmasia dolens 21 days after 3d injection.	Slight improvement.
8	17 "	Single.	6 months.	Three.	Right.	Compound. Much solid matter.	9½ pints on occasion of first injection; 5½ on two subsequent occasions.	No symptom.	Between 1st and 2d tapping, interval 5½ months; between 2d and 3d, 1½ month; between 3d and 4th, 3¼ months; iodine then injected; between 4th and 5th, 8 months; between 5th and 6th, 20½ months.	Marked retardation of disease; died 4 years from first symptom.
9	28 "	Single.	6 "	None.	Left.	Single.	8 pints fluid blood. Stamina.	Some pain; much sickness for 24 hours, and slight febrile disturbance.	Fluid speedily re-collected. Cyst successfully removed 6 months after by Mr. S. Wells. Married 9 months after; now in 5th month of pregnancy.	No benefit.
10	23 "	Single.	2½ years.	Two. Attempt at injection after 2d discontinued on account of pain, but followed by symptoms of peritonitis.	Right.	Single.	4½ pints.	Great pain; depression.	Died of collapse and peritonitis, from escape of the fluid in great measure into peritoneum, though it flowed out again through canula.	Death.

after the injection of the cyst, and suggest a peril even more imminent than in all probability really attends them. Coupled with this condition, which usually loses its more formidable features in the course of twenty-four hours, there is a very scanty secretion of dark claret-colored urine, loaded with iodine; and a diminution of the amount of iodine, an increase in the quantity of urine, and an abatement of the symptoms take place simultaneously. In the case where the symptoms of iodism were most alarming, an aqueous solution of iodine was employed, and one of the benefits of the admixture of a certain quantity of spirit with the fluid appears to be that it retards the absorption of the iodine. I found traces of iodine, however, in the urine fourteen days after the injection of the solution that I usually employed, and which contained a third part of spirit, and this although the fluid was allowed to remain in the cyst only for ten minutes.

The observation of these facts rendered me very decidedly opposed to the practice either of employing very strong solutions of iodine, or of allowing the injection to remain permanently in the cyst,—a practice to which the formidable symptoms and the fatal results which have occurred in some English cases appear to me in great measure attributable. The uncertainty as to the cases which will bear the iodine injection well, as distinguished from those in which cyst inflammation or profound iodism will be excited by it, is a drawback from its value which this operation shares with every other proceeding for the cure, or even for the temporary relief, of ovarian dropsy.

It is hard to say how long a lapse of time is necessary to establish the permanence of a supposed cure of this disease. At the end of two years after the injection of a cyst with the solution of iodine no re-collection of fluid had taken place in one case, and it is perhaps fair to regard that as an instance of its cure. In two other cases, however, the obliteration of the first cyst was followed at the end of eighteen months in the one, and of two years in the other, by the development of others, which showed that the tumor was not of that simple kind which it had at first been supposed to be. Such occurrences illustrate, indeed, the incompleteness of the success obtained by this proceeding as compared with the really radical cure effected by the extirpation of the ovary. But, on the other hand, even they are not without an encouraging feature, since they show that the presence of solid matter in the tumor does not contraindicate the injection, nor the compound character of the cyst always render the operation dangerous, but that from it we may expect retardation of the disease in cases where yet we must abandon the hope of effecting a permanent cure.

The real value of this proceeding still remains to be definitely determined by larger trials than have yet been made, and it seems almost idle to bring forward an array of names to settle a question which as yet is not ripe for a decision. In this country, Dr. Simpson is the only person who has often had recourse to iodine injec-

tions in ovarian dropsy, and I have already mentioned the extremely favorable conclusions at which he has arrived.

The cessation of my connection with an hospital has deprived me of the opportunity of carrying my personal investigations any further; and it is, I think, to be regretted that attention has during the past few years been so exclusively turned in this country to the question of ovariotomy that no attempts have been made to determine more accurately the indication for the use of these injections, and the means by which their danger may be lessened. In France and Germany, too, though still resorted to, their value has not been subjected to that searching examination which could alone test their real worth, and disappointment at finding the early estimates of success exaggerated seems likely to lead to a measure of undeserved neglect.

Professor Scanzoni, however, while still keenly alive to the risks which he dwelt on in the former edition of his book,[1] published eight years ago, has given the operation a renewed trial; and all the three cases in which he has employed it have had a good result. He has taken the following precautions, to which some of the success is doubtless due. The cyst was first emptied as completely as possible, and then, before the injection was employed, a most careful examination was made to determine whether the cyst was a simple one, and if it appeared not to be, the injection was not employed. If it were proceeded with, an elastic catheter, exactly fitting the canula, was carried down to the bottom of the cyst, and from one ounce to three of pure tincture of iodine were injected through it. In the course of a few minutes the whole of the fluid was carefully withdrawn by means of a syringe, and after the closure of the wound the abdomen was kept covered with cloths wrung out of iced water so long as the pain produced by the injection, and which usually was severe, continued. In the first of his three patients the cyst refilled in six weeks after the first injection. Its repetition at the end of that time was followed by extensive peritonitis, from which the patient recovered, and continued quite well at the end of a year. In the second case a single puncture and injection were followed by a cure which was substantiated at the end of ten months. In the third case two tumors existed, possibly affecting both ovaries. In the one which was injected, no re-collection of fluid had taken place at the end of four months; but the other tumor, which had at first seemed solid, was becoming softer, and it appeared probable that it would before long be in a state to admit of tapping and injection.

We need, for the just estimate of the value of iodine injections, an answer to the following questions. I commend them especially to those gentlemen who seem to consider that a clamorous denunciation of ovariotomy, unaccompanied by any effort to increase our knowledge of the pathology of ovarian diseases, or to add to our

[1] *Op. cit.*, 3d ed., 1864, p. 468.

therapeutical resources, befits the solemn engagements under which we stand to our own profession and to our fellow-creatures.

It needs to be ascertained—

1st. How far these injections may be safely employed in cases of compound cysts, and what effect they have in retarding the development of the principal cyst? and whether the character of the fluid, as, for instance, its being pellucid, and but slightly viscid, indicates the use of the injection even in cases of multilocular cysts?

2d. How far the caution suggested by Professor Simpson, of never employing the injection after a first tapping, diminishes its risk?

3d. Whether a watery solution of iodine, or one containing spirit, is the safer, and whether the employment of a large quantity of a weak solution, or of a small quantity of a strong solution, is attended by the greater hazard?

4th. What means afford the best guarantee against the escape of the injection into the abdominal cavity?

5th. How long it is expedient to allow the injection to remain in the cyst, and whether its complete removal by an exhausting syringe on the principle of Bowditch's furnishes an important safeguard against the occurrence of iodism, cyst-inflammation, or peritonitis?

6th. What relation subsists between the amount of pain at the time of the injection and the occurrence of dangerous peritonitis or cyst-inflammation afterwards; and consequently how far is pain to be taken as an indication for desisting from the injection?

7th. What are the best means of preventing or controlling dangerous symptoms after the injection?

8th. In the event of the failure of a first injection, what is to be expected from its repetition; and if repeated, is it desirable that the next tapping should be hastened, or that interference should be postponed until the patient's general condition indicates its necessity?

The grand objection to most proceedings hitherto devised for cure of ovarian dropsy is not only that they often fail to accomplish that object, but still more that they frequently destroy the patient who submits to them. A comparatively low average of successes may be more than counterbalanced by an equally low rate of mortality; but a very high probability of perfect cure is needed to outweigh a great risk of life. It will, I apprehend, be found that the comparative safety of the iodine injection will be its great recommendation. For my own part, I confess that I shrink from playing a game with heavy odds against success when human life is the stake.

How far this objection applies to the last great remedy, the removal of the diseased organ, must be the subject of inquiry at the next lecture.

LECTURE XXX.

OVARIAN TUMORS AND DROPSY.

TREATMENT, continued. EXTIRPATION OF THE DISEASED OVARIES. History of the operation, its two varieties, the major and the minor. General results of the operation; its mortality; date and cause of death.

Circumstances modifying its hazards;—existence of adhesions, age of patient, extent of incision, character of tumor.

Unfavorable opinion formerly pronounced, and why; its results and those of Cæsarean section compared, but operation to be judged by its own merits, not by comparison with operations for other purposes. Reasons assigned for reconsidering that opinion. Attempt to estimate conditions in which ovariotomy is justifiable.

IT still remains for us, last of all, to examine *the great radical cure of ovarian dropsy, the extirpation of the diseased organ.*

I have felt much at a loss, now that I am called on to reconsider the opinions which, not without much careful thought, I arrived at and ventured to express seven years ago, as to the way in which I can most fairly state the changes that these opinions have undergone. I believe that, on the whole, it will be the better plan to retain my former statements and the grounds on which my conclusions were based entirely unchanged, and afterwards to try to indicate how and why I have now arrived at different conclusions. I do this because I think that my former opinions coincided very nearly with those which are still entertained by many men for whom I feel very high respect, and from whom I cannot differ without a sense of misgiving lest, after all, I should be mistaken.

The history of the operation has been so often related, that I need not occupy much time in repeating its details. Performed for the first time in the year 1809 by Dr. Macdowell, of Kentucky, and repeated by him five times in the subsequent ten years, it yet did not attract much attention nor find many imitators, even among his countrymen, for nearly five-and twenty years. Neither on the continent nor in this country were the results of the few instances of its performance at all encouraging; and down to the year 1840 it had been attempted in its original form, which consisted in the making a long incision from the sternum to the symphysis pubis, only twenty-five times.[1] In 14 of these cases,[2] the

[1] The diligence of M. Fock, *loc. cit.*, p. 367, has discovered the mention of a case where, more than 150 years ago, the cyst was drawn through the wound made in tapping, by a sort of unintentional anticipation of Mr. Jeaffreson's operation; and he refers also to a similar occurrence having happened to the late Mr. Howship. These, however, are not instances of the intentional extirpation of the diseased ovarium, and cannot be taken into our consideration here, any more than L'Aumonier's case (*Mémoires de la Société Royale de Médecine*, 1782, 4to., p. 296), in which, with a barbarous surgery, he removed the ovary distended with pus in consequence of inflammation after delivery.

[2] A notice of these earlier cases of the operation by the large incision will be found in the *British and Foreign Medical Review*, Oct., 1843; and three cases not noticed there are referred to in the Report on Midwifery, &c., for 1842–3, published in the same journal for April, 1844.

ovary was removed, 9 patients survived the operation, 5 sank under its effects; in 11 either no tumor was discovered, or adhesions prevented its removal; and of these patients, 8 survived the exposure of the abdominal cavity, 3 were destroyed. Matters stood thus when Mr. Clay and Mr. Walne, by the publication of several cases, a good proportion of which had had a favorable issue, excited the attention of the profession to the subject; and though it was some time before the operation was generally regarded as a legitimate proceeding, and though it is still denounced by some surgeons in unmeasured terms, we yet can reckon now some 200 cases in which it has been resorted to, and are therefore in a position to form some opinion of its advantages and its dangers. The operations, indeed, have not all exactly resembled those first performed, for in the year 1833, Mr. Jeaffreson, of Framlingham, in Suffolk, endeavored to lessen the formidable character of the proceeding by tapping the cyst, and then withdrawing it through as small an opening as possible. This has been called the operation by the *small* incision, in contradistinction to the other, or operation by the *large* incision. The advocates of each of these proceedings are very strenuous in insisting upon the merits of that of which they approve, and, as we shall presently see, each has its peculiar advantages. In many respects, however, they stand upon common ground, and we may class them together for the present while we seek to ascertain what rate of mortality is to be apprehended, and what measure of success may be hoped for from the attempt to extirpate the dropsical ovary.

Several writers have collected, with much diligence, the statistics of this operation, of which there are now more than 200 instances on record. This last is the number arrived at by Fock, in his very valuable paper on the subject;[1] and though the past eighteen months have furnished a few additional cases both of success and

[1] The first of these tables, and the foundation of all subsequent ones, was published by Dr. W. T. Atlee in the *American Journal* for April, 1845, and was copied, without quite adequate acknowledgment, by Mr. S. Lee, in his very useful work on uterine tumors. Had he lived, the omission would have been rectified, but justice to Dr. Atlee compels me to refer to it here. Dr. Robert Lee has collected in his *Clinical Reports*, &c., the particulars of 162 cases in which ovariotomy was either attempted or actually performed in this country; while Kiwisch's table, in vol. ii, of his *Klinische Vorträge*, supplies some additional cases, chiefly contributed by continental practitioners. In the *American Journal* for April, 1850, Dr. Atlee gives the general results of 179 cases, though not with the same detailed references as in his former table; and in the same journal for April, 1855, he contributes a synopsis of 30 cases of ovariotomy occurring in his own practice. Mr. Clay, of Manchester, who has performed the operation more frequently than any other person, published in the *British Record of Obstetric Medicine* the particulars of 40 cases that came under his own care, and his papers on this subject were collected and published by him at Manchester in 1848. In March, 1856 he sent a letter to Dr. Simpson, which appeared in *Ed. Med. Journal* for that month, in which he briefly states the results of 29 additional cases. From all these sources, as well as from others either overlooked by former writers, or which have occurred subsequently to their investigations, Dr. Fock has collected a total of 292 cases, on which he bases his conclusions, and I have availed myself of his labors.

of failure, it is yet so convenient to deal with round numbers that I prefer adopting his figures as they stand. Now these 200 cases of actual extirpation of the ovary yield 111 recoveries to 89 deaths; or, in other words, the mortality is 44½ per cent., or not very far short of half the number of persons in whom the operation is completed die from its effects. But, besides these, there are 92 cases in which the operation could not be completed on account of the presence of adhesions, or of the tumor having some other situation or other attachments than was supposed beforehand, or in which some even greater diagnostic error was committed, and the very existence of the tumor was found to be a mistake. Of these 92 patients, 31 died, or 33.6 per cent., or 1 in every 3; but 9 of those who survived after passing through great perils, are reported to have been more or less completely cured of the disease. Putting all the cases together, it seems that of 292 recorded instances of the operation being attempted, 120 ended in death, and 92 in failure; or, in other words, the chances are two to one that the operation will be accomplished; but, if it succeeds, they are nearly equal that the patient will die, and, if it fails, the prospect of her surviving the fruitless interference is only double that of her sinking in consequence of it.

The belief was expressed by the advocates of the operation that the mortality attendant on its performance was in course of diminution, and that with the perfecting of our diagnostic skill the proportion of unfinished operations was also lessening. "The rate of mortality," says Dr. Atlee, in the year 1850, "has very much diminished since the publication of my table in 1845. Then there was 1 death in every $2\frac{2}{3}\frac{5}{8}$ cases of gastrotomy, or 37.62 deaths in every 100 cases. Since the publication of that table 78 cases have occurred, in which there was 1 death in every $3\frac{5}{7}$ cases, or 26.92 deaths in every 100 cases. There has also been a diminution in the proportion of unfinished operations . . . . hence diagnosis has also improved."[1] Unfortunately, as we have seen, it needs but to increase the number of observations in order to do away with the correctness of this very natural, though too sanguine expectation. One death in every $2\frac{2}{8}\frac{3}{9}$ of those cases in which the operation was completed, or 1 in $3\frac{4}{1}\frac{}{5}$ of all cases, those included in which the operation was abandoned, such are the results of the most recent data; while the number of instances in which the ovary could not be extirpated has risen from 1 in $5\frac{9}{3}\frac{}{4}$, at which Dr. Atlee estimated it in 1850, to 1 in $3\frac{4}{2}\frac{}{3}$ six years afterwards, according to the calculation of Dr. Fock. This last category of cases, too, would, I doubt not, be swelled far beyond its present dimensions, if every instance in which an exploratory incision sufficed but to discover the impossibility of any further proceeding, were placed upon record. Besides the cases 88, 101, and 103, in Dr. Lee's list, the first of which occurred during my connection with the Middlesex

[1] *American Journal*, April, 1850.

Hospital, while the other two were patients of my own, I have had two other cases at St. Bartholomew's Hospital, in which the attempt was made, with my full concurrence, to remove the ovary, but was made unsuccessfully. One of the patients, a girl of twenty-two, survived the operation four months, but after having struggled through an attack of cyst-inflammation, that followed within thirty-six hours after it was attempted, she sank into a state of hectic, which, after death, seemed to be accounted for by the extension of the inflammation to another cyst that was found distended by more than a quart of pus. The other case was that of a married woman, forty-seven years old, in whom the disease had been of very rapid development, but the cyst was apparently single, while the absence of any history of peritonitis, and the extreme mobility of the tumor, seemed to warrant the tolerably confident expectation that no important adhesions existed to interfere with its removal. This hope was found, however, to be illusory, and death took place from cyst-inflammation with all the symptoms of pyæmia seventeen days after the operation. The examination after death illustrated a source of difficulty which no wisdom could have foreseen. There were, indeed, adhesions to the abdominal peritoneum, and these it may be conceded (though I am by no means convinced of the fact) that the well-skilled tact of some one else might have detected. But the upper and posterior wall of the cyst adhered to the intestines, while from its upper part there passed off a pyriform prolongation, which reached up as high as the eighth rib, and, dividing into three separate branches or diverticula, adhered to the intestines, to the pancreas, and to the capsule of the left kidney. It happens, then, that my personal experience of ovariotomy is made up of the observation of five cases, in every one of which the operation was undertaken, after much consideration, with the approval and under the direction of surgeons of large experience and undoubted skill, but who, in every instance, were baffled in their attempt. Two of these cases are now published for the first time, and go to swell the list of unsuccessful operations. They were not withheld before except as the mention of many an unsuccessful operation is withheld, because it teaches no new fact, and serves only to illustrate some well-known danger. I have no doubt, however, but that very many other cases of the same kind must have occurred, which are still unpublished just as mine were; but which, could they be collected, would bring out the dark side of the operation, not so much perhaps in proving the mortality from completed ovariotomy to be so much greater than the present estimates, as in showing failures to accomplish it to be much more common, and those failures to be much oftener attended by danger and followed by death.

Some details as to the circumstances in which death takes place from this operation, and the conditions which favor its occurrence, may help us to a more correct estimate of its value.

In 68 cases the date at which death occurred is mentioned.

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rhage appears to be much greater in the latter than in the former case, 13 out of 59 having died from it after extirpation of the ovary; only 14 out of 147 from hemorrhage alone after the Cæsarean section. Shock, however, which forms a very important element among the various dangers which attend the latter operation, has scarcely any share in the production of death from ovariotomy, though the somewhat vague term exhaustion probably includes some instances in which death took place from the direct result of shock to the nervous system. It is likely that care and improvements in surgery may somewhat lessen the dangers of hemorrhage, but the great frequency of inflammation, both after this operation as well as after the Cæsarean section, certainly makes it questionable whether the laying open the abdominal cavity can be looked on as so innocent a proceeding as some writers believe when they speak of exploratory incisions as all but devoid of hazard.

The presence or absence of adhesions, the size of the incision, the state of the patient, and the character of the tumor, have all been referred to as modifying the dangers of the operation, and consequently as deserving of consideration in the selection of cases for which it is suitable.[1]

In 91 cases adhesions more or less considerable existed; in 54 there were none. Of the former, 44, or 48.3 per cent. died; 17, or 31.2 per cent. of the latter. I cannot state the exact number of instances in which out of these 91 cases the operation was left unfinished on account of adhesions. Another series of facts, however, will serve to illustrate this point. The tables of Dr. R. Lee, and of M. Fock, contain mention of 92 uncompleted operations; in 71 of these 92 cases the adhesions of the tumor were the only reasons for the discontinuance of the attempts at its extirpation. In many of these cases the wound was at once closed after the evacuation of the contents of the cyst, and with the infliction of the least possible amount of violence upon it; but nevertheless, more than a third of these patients, or 35.2 per cent. died. The diagnostic difficulty does not seem as yet to have been diminished by all the attention which has been bestowed upon it, and the well-skilled tact of those who have oftenest performed ovariotomy appears in this respect to give to its possessor but little superiority over the novice. All the measures which have been proposed for ascertaining the freedom of an ovarian tumor from adhesions afford little if any information, except as far as the relation of the cyst to the abdominal parietes is concerned. The adhesions to the abdominal peritoneum, however, are by no means the most important, and their division is often attended with but little difficulty or danger, while connections between the cyst and the various viscera are frequently altogether undiscoverable beforehand, and attempts at dividing them are always hazardous, very

[1] Some of these numbers are taken from Dr. Atlee's paper, in *American Journal*, April, 1850, with the addition of all cases that have been recorded subsequently.

often impracticable. To the best of my knowledge there is no other operation in surgery concerning which the chances are nearly one in three that some unforeseen difficulty will prevent its completion, or that a third of the abortive attempts at its performance will end in the patient's death.

It has been suggested that the results of ovariotomy are partly governed by the age of the patient, and the activity of the sexual powers, its dangers lessening with advancing years. In the *Bulletin de la Société de Chirurgie*[1] is a table constructed from data furnished by Dr. Lee's paper on ovarian disease, and which seems to support this opinion. It is as follows:

From 18 to 30 years,				40	operations,	19	deaths.
"	30 " 40	"		41	"	13	"
"	40 " 50	"		17	"	4	"
"	50 " 60	"		13	"	2	"
				111		38	

A few facts more, however, refute these conclusions and suggest others, which in their turn further observation may prove erroneous. I have obtained from other sources 91 more cases, with a total of 41 more deaths, and these added to the other numbers yield—

From 18 to 30 years,			69	operations,	31	deaths,	mortality	44.9	per cent.
"	30 " 40	"	69	"	22	"	"	31.8	"
"	40 " 50	"	37	"	16	"	"	43.2	"
"	50 " 60	"	23	"	9	"	"	39.1	"
"	60 " 68	"	4	"	1	"	"	25.0	"
			202		79				

One fact, indeed, which the other table indicates this also corroborates, namely, the special risk attendant upon the operation in very young women. Time will show the value of iodine injections; should they prove to be as safe and as successful as their advocates believe, it is very satisfactory to know that precisely in these very patients are simple cysts most frequent, and consequently iodine injections are most applicable.

It has been alleged that the success or failure of the operation has depended to a considerable extent on the size of the incision made into the peritoneum, and that while to open the abdomen from the ensiform cartilage to the pubis is a very dangerous proceeding, the withdrawal of the punctured cyst through a small incision is attended by so much less hazard as to render it unfair to place the two operations in the same category. This difference between the two operations appears, indeed, to be very clearly marked in the statements of those who first directed attention to this subject. The late Mr. S. Lee, states[2] "that in 85 cases where the major operation was performed, 50 were cured, 35 died, making the mortality 1 to 2½; in 23, where the minor operation was performed, 19 were cured and 4 died, making the mortality 1 in 6."

[1] *Bulletin de la Société de Chirurgie*, vol. iii, p. 42. [2] *Op. cit.*, p. 211.

The result of further observation has been to reduce the discrepancy between the two operations within narrower and narrower limits; not by proving the major operation to be less hazardous than was supposed, but by showing that the dangers of the minor operation had been underrated. Some three years and a half later Dr. Atlee[1] having collected 133 cases of the major and 28 of the minor operation, found the mortality from the former to be 46, or 1 in $2\frac{14}{46}$; from the latter 8, or 1 in $3\frac{1}{2}$. I have since collected 18 cases of the major, 23 of the minor operation, referring to the latter all cases in which the incision did not exceed six inches in length, making the total 151 of the former, and 51 of the latter, from which the respective deaths have been 59 and 20, or one in $2\frac{33}{59}$, and 1 in $2\frac{11}{20}$.

The explanation of this difference between the earlier and the more recent statistics on this subject is doubtless furnished by the fact that the first operations were performed in cases of very thin-walled cysts, free from solid matter and uncomplicated with adhesions, which, therefore, admitted of being drawn through a very small opening. An incision of two inches in length, however, was found to be adequate only in a small minority of cases; but so soon as the incision was made somewhat larger, though the principle of tapping the cyst and removing it through as small an opening as possible was adhered to, yet a much greater amount of interference than before became practicable, adhesions were sought for and divided, the hand, where it seemed necessary, was introduced into the abdomen, and the two operations have now come to be almost on a level in point of danger. It is not the division of the peritoneum three or four inches more or less that determines the fate of the patient, but the greater or less degree of meddling which has been necessary to the completion of the operation. This last fact, too, receives a further illustration from the influences which the character of the tumor exercises upon the fate of the patient. Operations on the thin-walled simple cysts, which are most easily removed, are attended by the smallest danger, while the hazards attendant on the extirpation of multilocular cysts and solid tumors are far greater. This fact is very well illustrated by a table drawn up by Mr. Humphry, of Cambridge,[2] in which he divides the different tumors of the ovary into three classes, and shows the results of operations for their removal to have been as follows:

	Recovered.	Died.
Simple cysts,	16	6
Cysts with after-growths—multilocular cysts, some described as cysts with solid matter, and two containing hair and teeth,	13	9
Solid tumors, called fibrous, scirrhous, or solid with fluid, or solid with cysts,	7	10
	36	25

[1] *American Journal*, April, 1850, p. 337.

[2] In a pamphlet entitled, *A Report of some Cases of Operation:* reprinted from the *Association Medical Journal*. Cambridge, 1856, p. 40.

I find also that on dividing ovarian tumors into two grand classes, the simple cysts on the one hand, and the compound cysts, and those containing more or less solid matter on the other, the following results are obtained:

	Recoveries.	Deaths.
Simple cysts,	31	12
Compound cysts, cysts with solid matter, and solid tumors,	62	56
	93	68

Neither this table nor the preceding is referred to as showing the actual mortality from ovariotomy, which possibly may not be so considerable as the above figures represent, but merely as illustrative of the comparative risks of the operation according as the tumor does or does not contain any considerable amount of solid matter.

From this wearisome collection of details, imperfect, sometimes conflicting, what inference may we draw with reference to the operation of ovariotomy; or is, perhaps, no conclusion at present possible, and must the decision of the whole question be adjourned to a future time, and to our possession of better information? Some points, indeed, must be left unsettled, but still there appears to me to be ground sufficient for some conclusion, and that I fear must be unfavorable to the performance of ovariotomy.

The chief grounds for this unfavorable opinion may be summed up under the three following heads:

1st. The rate of mortality from the operation does not appear to be in course of diminution, as the result of the accumulated experience and increased dexterity gained by its frequent repetition.

2d. Unlike most operations in which anything like the same rate of mortality occurs, it is scarcely admissible in the doubtful or desperate cases to which the Hippocratic axiom "ad summos morbos, summæ curationes," applies. The cases in which it may be hoped that the disease, if left alone, will advance tardily or become stationary, those in which something may be anticipated from other less hazardous forms of interference, are the very cases that yield the successes on which it has been sought to establish the merits of ovariotomy. It is proved to be very hazardous indeed in the young; it is believed by some very competent surgeons to be attended by so much danger in those past the middle period of life, that they have proposed to regard the operation as contraindicated in all women who have exceeded the age of forty-five years. The compound cysts, the cysts with solid matter, the malignant, and quasi-malignant growths, those, in short, whose rate of progress is commonly most rapid, which are the most burdensome to the patient, are attended by the greatest suffering, and admit of the least palliation by other means, are precisely the cases in which the surgeon shrinks most from ovariotomy. In the table drawn up by Mr. Humphry, who himself is an advocate of the operation, cases of this description yielded, when operated on, 19 deaths to

20 recoveries; in my own table, deduced from a rather larger collection of facts, 56 deaths to 62 recoveries.

3d. Not only is the operation so hazardous in those very cases where it is really most called for, that many surgeons shrink then from its performance; but even in instances that may be selected as the most favorable, we have no sure grounds on which to rest our prognosis as to its issue. "It is, in short, a venture at haphazard, since the medical practitioner is never able, in spite of the large experience already accumulated, to foretell the issue of the operation with the same certainty as guides him in undertaking other serious surgical proceedings. It has, indeed, been seen in numerous instances, that extirpation of the ovary, though performed under the most favorable conditions, and by the most skilful hand, and without the occurrence of any untoward accident, has yet ended in a few days, sometimes even in a few hours, in the patient's death."

These three reasons, the high mortality which experience and dexterity have failed to lessen, the special hazard attendant on those cases where yet the operation is specially indicated, and the utter uncertainty in which we find ourselves, even in the most favorable cases, as to its probable result, have chiefly influenced me in the formation of my opinion as to the general inexpediency of performing ovariotomy.

I have purposely abstained from entering on one argument much relied on by the defenders of ovariotomy, and which is based on the allegation that many other operations constantly taught and frequently practised are attended by at least as high a rate of mortality. I exceedingly doubt the correctness of some of the very low estimates of the danger of ovariotomy which have been sometimes put forth; they are not only contradicted by the figures which I adduced in a former part of this lecture, but I may further add that Kiwisch, who himself had performed the operation, and whose weakness it certainly was not to underrate successes, or to overrate failures,[1] expressed his belief that the proportion of deaths to recoveries is really as 5 to 4. But letting that pass, and also the important facts that other operations can almost always be completed, while ovariotomy is frequently left unfinished, and that the dangers of other operations can be estimated with considerable accuracy beforehand, while there are no sure data from which to frame the prognosis of any case of ovariotomy; I would object to the sort of comparison which it has been proposed to institute, on the ground that there is no such resemblance between ovariotomy and those other operations as to render them fair subjects for comparison. The propriety of the performance of tracheotomy in cases of croup has been much canvassed, and many persons of great reputation are still much opposed to it. Its defenders, however, have not sought to establish their point by a comparison of its mortality with that which follows ligature

[1] *Op. cit.*, vol. ii, p. 169.

of the subclavian artery, or amputation of the thigh. Comparison can be instituted only between things which bear to each other some resemblance, and the only operation which resembles ovariotomy is the Cæsarean section. We have found, however, that the danger of hemorrhage is greater, that of peritonitis almost as great, in the former, and that the smaller rate of the mortality that follows ovariotomy is to be attributed almost entirely to the absence of that shock which in the Cæsarean section is inseparable from the violent interference with the process of labor and the infliction of injury upon the uterus.[1]

But I do not wish to carry out a comparison between ovariotomy and another operation, which, though not without some points of resemblance, is yet performed in different circumstances, and in accordance with wholly different indications. It is to be compared with other measures for the cure of ovarian dropsy and ovarian tumor, just as the value of tracheotomy has always been measured with the value of other means for the cure of croup, and the efforts of surgeons and physicians have been directed to find out trustworthy indications for its performance, to ascertain the degree of additional danger which it brings with it, as well as the fresh elements of hope which it brings with it too.

Ovariotomy is to be tested by its results as compared not with those of amputation at the hip joint, or of lithotomy, or of the ligature of arteries, but with those of tapping, or of iodine injections, or of any other means that have been used for the cure of the same disease, and with those, too, which may be expected if the malady is left untreated. On all of these points we need further and more exact information than we are as yet possessed of; and till we obtain this the question of ovariotomy cannot be looked on as wholly settled.

At present, however, we are not in a position to lay down the indications justifying ovariotomy, or if we can succeed in sketching them in our study we cannot aver that they exist in any case which we meet with in practice; nor can we venture on any reliable grounds to express a prognosis as to the issue of our inter-

[1] I myself was not a little surprised at the very high rate of mortality which a dispassionate examination of the subject showed to be attendant on ovariotomy, and I can well imagine that to some persons who have been accustomed to form an entirely different estimate of its dangers, the comparison with the Cæsarean section may seem absolutely untenable.

While these sheets, however, were passing through the press, I received vol. iii, of Scanzoni's *Beiträge zur Geburtskunde*, &c., at p. 99 of which is an account by Dr. Gustav Simon of *all* the operations, 64 in number, in which ovariotomy has been attempted or actually performed in Germany. The numerous universities, and the great activity of literary commerce in that country, render it probable that all cases, unfavorable as well as successful, will be reported in juster proportion there than elsewhere. These 64 cases, however, yield "12 radical cures, 46 operations with fatal issue, and 6, the benefits of which were either questionable, temporary, or which turned out utter failures." The fatal cases, then, form 72 per cent. of the total number, a mortality which, as Dr. Simon observes, p. 108, is "even greater than that of the Cæsarean section, under which, according to Kayser's estimate, 63 per cent., according to other authorities two-thirds, of the patients are lost."

ference even when the operation has been performed with the greatest success and the fewest difficulties. Till we can do this, however, the operation seems to me to take its place by the side of those exceptional proceedings, the expediency of which must be determined by each one for himself after a careful consideration of the peculiarities of the case and the idiosyncrasies of the patient.

It is between six and seven years ago since I expressed these opinions. I have thought it right to reproduce them now, word for word, and to repeat the grounds on which they rested. I have done so because these opinions are still in the main those of the highest authorities in France and Germany, and it is only in this country and in America, that any important additional experience has been attained concerning the operation and its results.

Even in England, most of the former opponents of ovariotomy retain the unfavorable opinion which they had already expressed, but I am not aware that anything whatever has been done, or even attempted by them to devise other and less hazardous proceedings for the cure of ovarian disease, or even for retarding its progress; and iodine injections, which seemed to promise so much, have been allowed to fall into disuse, almost without an attempt to ascertain their real value. Ovarian disease, then, remains, as far as curative measures are concerned, just where it was seven years ago; a deeper conviction of the utter fruitlessness alike of internal remedies, and of outward applications being all that the experience of these seven years has taught us.

It becomes, then, of the more importance to inquire whether this gloomy picture admits of no alleviation, whether the hazardous operation of ovariotomy has lost none of its dangers, whether its attempt is attended by the same uncertainty as before, and whether recoveries from it are still limited to cases where its necessity was the least urgent?

I am bound to admit that to all of these questions the reply must be much more favorable than it was seven years ago; that the persevering efforts of the advocates of the operation have led to a greater accuracy of diagnosis; to a more careful selection of cases; to a removal of some of the dangers of the operation; to the discovery of the comparative safety of some proceedings, such as the return of the pedicle with the ligature around it into the abdomen, from which surgeons would have shrunk as nothing less than fatal, and to a more judicious after-treatment; and, consequently, that ovariotomy has increased in certainty, and gained in safety.

This improvement in the results of ovariotomy, however, is less apparent than might be expected if we confine our attention to those cases where the operation has been actually completed. The mortality in cases of completed ovariotomy, according to Dr. Atlee, down to the year 1850, may be stated at 32.27 per cent.; the mortality of the operations of Mr. B. Brown, Mr. Hutchinson, Dr. T. Smith, and Mr. Spencer Wells, all of which have been per-

formed subsequent to that time, amount to 30.3.[1] The results of Mr. Spencer Wells's cases, subsequent to the publication of his paper in the *Medico-Chirurgical Transactions*, show no progressive diminution of the dangers of ovariotomy. Of his first 50 cases, 17 died; of his last[2] 43, 15 died; and the fractional difference between the mortality of the two series of cases shows a slight accidental increase of the death-rate of the latter. A division, too, of such of the cases tabulated in the appendix to Mr. Clay's translation of Kiwisch on *Diseases of the Ovaries*, as have any date assigned to them, into two classes, according as ovariotomy was performed before 1855, or afterwards, would even show that the fatality of *completed* operations had increased from 43 to 46 per cent. I do not for a moment believe this to be the case; but I refer to this apparent result as a proof that the fatality of the operation has not *greatly* diminished, if we regard those cases only in which it was actually completed.

The nature of the risk, too, remains the same. Life does not seem in fatal cases to be prolonged much beyond the period which it attained to before.

Of 68 fatal cases which I had found mention of seven years ago, 37 or 54.4 per cent. terminated in less than 72 hours. In 86 of 150 fatal cases, or in 50.6 per cent., the duration of life, as stated in Dr. Clay's table, was likewise less than 72 hours.

In 59 of the fatal cases I found the cause of death stated.

In 29,	or 49	per cent.,	death took	place	from peritonitis.
" 13,	" 22	"	"	"	hemorrhage.
" 2,	" ...	"	"	"	shock.

In 139 of Dr. Clay's cases the cause of death is given, and is stated to have been:

Peritonitis, ...	in 64,	or 46 per cent.
Hemorrhage[3] and shock,	" 49,	" 35.2 "

It is needless to say that these figures are dealt with not as representing absolute facts, but merely as showing the direction to which inquiry on the whole is tending. They guide us aright, not as the compass does, which now enables the mariner to steer with absolute certainty, but rather as in old times the stars did, when they taught him, not without doubt and misgiving, yet in the main correctly, whither to shape his course.

It seems, then, that completed ovariotomy is nearly as fatal as before; that life is prolonged but little longer than it was formerly in fatal cases; and the causes of death are much the same as they were, though I have no doubt that, owing to improvement in the details of the operations, there has been a reduction in the risk of mere hemorrhage.

[1] Deduced from numbers given by Dr. Graily Hewitt, *op. cit.*, p. 588.

[2] The result of which Mr. Wells kindly communicated to me by letter in April of the present year, 1864.

[3] The mortality from hemorrhage alone is said to have been 24; from shock alone 25.

The great advance which has been made, however, appears in the certainty of diagnosis that has now been attained, as seen by the far fewer instances where the operation has been commenced and abandoned, either from adhesions, or from some other cause interfering with its completion.

Referring again to Dr. Clay's tables, I find unfinished operations:

	Before 1855. Cases.	Died.	Since 1855. Cases.	Died.
Partial excision, tumors being ovarian, ...	23	13	1	1
" " extra-ovarian, ...	12	9	...	...
Abandoned on account of adhesion, tumors being ovarian,	58	12	5	3
" " extra-ovarian,	14	5	...	...
	107	39	6	4

This table, again, is to be taken with the cautions already given, for I myself know of one non-reported case of death after partial extirpation of a fibrous tumor of the uterus; and Mr. Spencer Wells[1] mentions six cases of exploratory incision, or of attempted operation, of which one had a fatal termination.

The stigma of uncertainty, then, which formerly rested on the operation, may be regarded as now almost or altogether done away with; and the experienced surgeon may begin its performance without more uncertainty as to his ability to complete it than accompanies other of the capital operations of surgery.

Some of the objections against ovariotomy appear to have been the result of an over-hasty generalization. It does not appear that any age furnishes a positive contraindication of its performance; and as we deal with altered figures we arrive at different results, which prove, if nothing else, at least the absence of any law by which the age of the patient governs the result of the operation.

In Dr. Clay's table the age of the patient is given in 274 cases, which may be thus distributed:

Between	18	and	30	years,	120	operations,	58	deaths.
"	30	"	40	"	81	"	36	"
"	40	"	50	"	46	"	23	"
"	50	"	60	"	23	"	11	"
Above	60	"	...	"	4	"	1	"

It is curious, too, with reference to the alleged extreme fatality of ovariotomy in the young, that 8 of Mr. Spencer Wells's 33 published successes, occurred in young women between the ages of 17 and 25 years, while no death took place under the age of 26.

Another objection has been based on the assumption that the only cases which furnish results sufficiently encouraging to justify the operation, are cases of simple cysts, which usually increase the least rapidly, exercise the least injurious influence on the constitution, and are also most amenable to other modes of treatment. Such cases, too, are probably the most favorable for operation, though here, again, a little change in the data yields a different result; but in fact by far the greater majority of the instances in

[1] *Med. Chir. Transactions*, vol. xlvi, 1860, p. 49.

which ovariotomy is performed are the more common cases where the cysts are compound, with a more or less considerable quantity of solid matter. In only 2 of Mr. Wells's 33 cases of successful ovariotomy was the tumor a simple cyst; in the remaining 31 cases the growths were multilocular, with a varying amount of solid matter.

Neither the patient's age then, nor the nature of the tumor, can be regarded as of itself prohibiting the operation; and we are clearly advancing into the region of certainty, when, instead of arbitrary laws deduced from the results of a limited number of figures, we become able to lay down indications for doing or abstaining from the operation founded on the general principles of medicine and surgery.

I think, then, that we are now bound to admit ovariotomy as one of the legitimate operations of surgery; as holding out a prospect and a daily brightening prospect of escape from a painful and inevitable death, which at last indeed becomes welcome, only because the road that leads to it conducts the patient through such utter misery.

Perhaps we may sum up the indications and contraindications for the operation somewhat thus:

1st. It is *not* to be performed in any case of single cyst which is not increasing, or is increasing but slowly, while it has not as yet interfered with the patient's general health. In other words, life is not to be jeopardized for a mere discomfort.

2d. It is *not* as a general rule to be performed until after the cyst has been tapped once. The reasons for this caution are threefold. In some rare cases the fluid does not re-collect; the amount of constitutional disturbance which follows tapping would be some index to the amount that might be apprehended from the more serious operation of extirpating the tumor; and lastly, when the cyst is emptied, and during the process of its refilling, its relations, and the presence or absence of adhesions, especially to parts within the pelvis, can be more readily ascertained.

I doubt whether, in the case of simple cysts, ovariotomy ought not to be further limited to cases in which trial has been made of iodine injections sufficient to ascertain them to be inefficacious, or to prove them to be unsafe.

3d. It is *not* to be performed in any case in which a tumor is felt in the pelvis, retaining the same situation but little changed after tapping, and from which, by means of the sound, the uterus cannot be distinctly isolated.

4th. It is further contraindicated by the presence of albumen in the urine, or at any rate by the persistence of any trace of it after tapping, and also by the early occurrence of swelling of the legs, and by the presence of any considerable quantity of ascitic fluid in the abdominal cavity.

5th. And lastly, its success is rendered extremely doubtful by the previous occurrence of cyst-inflammation, and general peritonitis, as evidenced by attacks of sickness, shivering, fever, and

abdominal pain, and by the presence of pus in the fluid evacuated by puncture. The fact of a patient having had occasional attacks of abdominal pain, of short duration, unattended by fever, or by abiding tenderness, does not contraindicate the operation, since such attacks occur independently of inflammation.

On the other hand it is not contraindicated.—

1st. By the patient's youth or age, nor by the fact of her having previously undergone several tappings, nor by the irregularity or suppression of the menses, since complete menstrual suppression does not prove both ovaries to be implicated.

2d. It is justifiable and to be recommended in all cases of ovarian tumor, whatever be its structure, and whether its existence be of long or short duration, and whether tapping has or has not been frequently resorted to, where the disease is steadily and progressively increasing, and when the patient's health is beginning to suffer from this increase, but as far as can be ascertained from no other cause independent of the local mischief.

Something, indeed, I think much of our conduct must be governed by the state of the patient's own mind and wishes; by the calmness with which she can regard the possible failure of the operation, and the sudden entering on the "unknown land;" by the strength of the ties which bind her to the world, and make her desirous to continue in it, and by the spirit of hopefulness that may enable her to look beyond the risk of the few days, to the perfect health in future years which will be the reward of a successful venture. Dread of the issue is a bad state of mind in which to undergo an operation of this magnitude; I am not sure but that indifference is even worse: I am quite certain that moral considerations must be weighed as carefully as those furnished by the character of the tumor, or the history of its growth.

I cannot expect that the reasons which have seemed to me conclusive in favor of ovariotomy should appear to others equally cogent; though I quite expect that the next seven years will, as the past have done, lessen the objections to its performance, and increase the evidence in its favor. So long, however, as there continues to be room for difference of opinion on the subject, the caution is not superfluous which I ventured to suggest seven years ago with reference to the grievous injury that is done, both to the advance of medical knowledge and to the standing of our profession with the public, by the practice of treating some of these questions as though they were questions of moral right or wrong. It would seem, from what has sometimes been said on the subject, almost as if ovariotomy could not be defended save from some sinister end, nor its expediency be doubted except from a moral obliquity rendered excusable only by hopeless dulness. Belief in each other's integrity of purpose seems to me essential to our eliciting truth by discussion; and I see no reason why I am to suspect another of being less mindful of our common duty to humanity because he tries to relieve suffering or to prolong life by some means in which I have not the same confidence. The

odium theologicum has at least age and respectability in its favor; I fear the immortal quarrel between Dr. Slop and Susannah has gone far to render the *odium obstetricantium* simply ridiculous.

LECTURE XXXI.

AFFECTIONS OF THE FEMALE BLADDER.

INFLAMMATION OF THE BLADDER, its acute and subacute form; the latter the more frequent—sometimes connected with tubercular disease of the kidney, or with chronic nephritis. Chronic cystitis.
Treatment of the different forms of the disease.
VESICO-VAGINAL FISTULA. Remarks on its prevention, and on the treatment preliminary to an operation for its cure.
INTESTINO-VESICAL FISTULA.
MALIGNANT DISEASE of the bladder.

IT may at first sight appear that the affections of the urinary organs do not deserve a place in a course of lectures on the diseases of women. To a certain extent, too, the objection is well-founded; and I will therefore state at once that it is not my intention to enter on the consideration of the whole of so extensive a subject, or to occupy your time with the minute study of diseases which are common to both sexes, which run in both a similar course, and manifest themselves by the same symptoms.

There are, however, some disorders of the urinary apparatus almost peculiar to the female sex, and others whose causes and whose course are different in women and in men, and it is to these, and these only, that I propose to call your attention.

Reference has been frequently made to the manner in which the bladder participates in the disorder even of the functions of the womb, and instances have been adduced of the advance of serious organic disease of the uterus, unannounced by other symptoms than those which an irritable state of the bladder, or a somewhat altered character of the urinary secretion presented. Nor is this all, but not infrequently the subsidence of uterine disease leaves behind some impairment of the functions of the bladder; and constant irritability of the organ, pain in micturition, or occasional difficulty in voiding the urine, remain as the after-effects of some not very severe attack of inflammation of the womb, or of its appendages.

Inflammation, indeed, beginning in adjacent parts, and by its extension involving the bladder, plays a very important part among the causes of disorder of the urinary organs in woman. It is thus that irritability of the bladder is not infrequently left behind after an attack of vaginitis, or follows on a miscarriage or a tedious labor. The recovery in such cases seems at first almost complete; but the slightest cause, such as the natural congestion of the pelvic

viscera which accompanies menstruation, accidental exposure to cold, or the occurrence of pregnancy, suffices to reproduce the frequent, and difficult, and painful micturition, and to render the urine once more turbid, charged with the phosphates, and abounding in deposits of pus or mucus. Such symptoms, too, continue for months or years varying in degree, now worse now better, a life-long source of discomfort, tending rather to increase than to diminish.

Acute Cystitis has never come under my notice except after delivery, when its symptoms have been almost lost in those of the graver inflammation of the uterus, or of the peritoneum, with which it was associated. These complications, when severe, often terminate in death, and then the interior of the bladder is not infrequently found denuded to a great extent of its mucous membrane, which hangs in dark, sloughy shreds and patches from an intensely congested surface; its state closely resembling that presented by the interior of the womb itself.

For the most part, however, the injury inflicted on the bladder is less grave, or at least more circumscribed, and, not being attended by serious affection of the womb itself, does not prove dangerous to life. At some one point where during labor the pressure of the fœtal head was most considerable the tissue dies, and the patient's distress and dysuria find a melancholy alleviation in the unconscious outflow of the urine. The inflammation has ended in destruction of tissue and in the formation of a vesico-vaginal fistula, but it has ended; and suffering of a new kind now takes the place of that which the patient had before endured. But this accident is happily not the most usual result of inflammation of the bladder, the long-continued pressure on the organ, or the neglect to employ the catheter, or the inflammation of the uterus leading to a sort of *subacute cystitis*, very painful and very difficult of cure, but neither destroying life nor condemning the patient to permanent incontinence of urine.

The history of such cases is generally something of this sort. Labor, or perhaps abortion, was followed by an attack of pain in the lower part of the abdomen, with much tenderness on pressure, and with difficulty and pain in voiding the urine, or sometimes with actual inability to pass it. Leeches and other appropriate treatment had probably removed the other symptoms and mitigated those referred to the bladder; but still the patient finds herself distressed by a constant desire to pass water, which she is unable to retain above twenty minutes or half an hour, the wish to void it being uncontrollable, though the pain in the act itself is liable to considerable variations. The urine is alkaline, often intensely so, loaded with the phosphates, and containing also a large quantity of pus or mucus, the amount of which, however, frequently seems to the naked eye more considerable than it really is from the abundant deposit of phosphates with which it is mingled.

The constant direction of the mind to the urinary function no

doubt increases the frequency of the desire to empty the bladder, and the incessant calls to pass water by night as well as by day break down the patient's health and grievously embitter her existence. Every circumstance, too, which adds to the congestion of the pelvic viscera exaggerates the irritability of the bladder. Hence the menstrual period is always a time of increased discomfort; hence, too, the symptoms are sure to be aggravated by the patient's return to her husband's bed, and the occurrence of pregnancy is invariably accompanied by an exacerbation of all her sufferings, and by a real advance of her disease.

Examination of the patient seldom fails to confirm the diagnosis to which a mere detail of the symptoms would lead us, though it must be borne in mind that, according to their own preconceived notions, patients will sometimes give greater prominence to the indications of disease either of the womb or of the bladder, and will, till closely questioned, say little concerning those other symptoms which, though perhaps not less distressing, had yet impressed them less, because they were supposed to be subordinate in importance or secondary in the order of their occurrence. Tenderness on pressure over the pubes is a common attendant on inflammation of the bladder, though, owing to the contracted state of the organ this symptom is not always appreciable unless the pressure is made directly downwards into the pelvic cavity. The finger in the vagina generally ascertains all the parts to be unduly sensitive, though often there is no perceptible alteration in their condition. The mere increase of sensibility, too, is not always manifest unless pressure is made forwards against the anterior vaginal wall; but then the suffering which is at once experienced points to the real seat of mischief, while the introduction of the catheter excites pain almost intolerable from its severity, and which often abides for many hours.

In the higher classes of society the ailment scarcely reaches such a degree of severity as is here described. Appropriate treatment in the first instance, and prolonged care afterwards, if they do not completely remove the disease, in general so greatly mitigate it as to reduce it to, at the worst, a painful infirmity. Among the poor, however, the case is very different; for the disease at first neglected, is often but little heeded afterwards, and when the patient has recovered from the more urgent consequences of the delivery or the miscarriage in which her sufferings originated, she is compelled to return at once to her ordinary duties. Causes, in themselves trifling, a slight exposure to cold, inability to rest during a menstrual period, the ordinary incidents of married life, sexual intercourse, pregnancy, abortion, or delivery, add to the congestion of the bladder, and increase its irritability. At length the patient seeks admission into a hospital, but stays there only long enough to gain some slight relief, not long enough to make any real advance towards cure. The mucous membrane of the bladder becomes ulcerated, and blood in small quantities appears in the urine, in addition to the deposits of pus and of the phos-

phates which it before contained. The bladder is so contracted that it can no longer hold half an ounce of urine; and sometimes the ureters themselves become dilated, as if the urine sojourned there with less distress to the patient, nor do the kidneys remain exempt from a participation in the mischief. Their substance wastes, while the distinction between the cortical and medullary portion becomes less obvious than natural; they become sacculated, and turbid urine is generally found within them, while their lining membrane is highly vascular, and the urine is sometimes actually purulent, or in other words, pyelitis follows the disease of the bladdder, and with it atrophy of the proper tissue of the kidneys. The mode of death in these cases is very various. Sometimes the patient sinks exhausted, and, having long been feeble, passes away quietly and unexpectedly; at other times the irritability of the stomach becomes so extreme that all food and all medicine are alike rejected. Sometimes much suffering precedes death, and I remember one poor woman who all day and all night long sat crouched on a chamber utensil, so incessant was the call to empty her bladder, while she complained of the urine as it passed scalding her like molten lead. She remained thus, swaying herself to and fro in her agony, unrelieved by even the largest doses of opium, till as life waned her pains lessened too, and at length she lay down for the first time for many weeks, worn out and weary, to die. In other cases the kidneys cease by degrees to perform their functions, and at last no urine at all is secreted, and typhoid symptoms come on, under which the patient sinks rapidly.

There can be no doubt but that some of these cases are connected with tubercular disease of the kidney,[1] the affection of the bladder being secondary and subordinate, and this even though the symptoms during life have pointed almost exclusively to the bladder as the seat of mischief. It is probable, too, that in other instances the irritation of the bladder consequent on the miscarriage or the labor from which the patient dates the commencement of her illness, may have been the exciting cause of the subsequent mischief, and that the tubercular deposit in the kidney has really been occasioned by the previous cystitis. I have no means of

[1] Sir B. C. Brodie's work on *Diseases of the Urinary Organs*, contains, at p. 133, a short but valuable chapter on symptoms affecting the bladder in consequence of disease in the kidney, and some of the cases which he relates appear to be instances of tuberculous disease of that organ. Rokitansky, *op. cit.*, vol. ii, p. 443, does but just refer to tubercular deposit in the kidney as a secondary occurrence, and one more common in the male than in the female; while Louis, *Recherches sur la Phthisie*, p. 129, refers to the existence of considerable tuberculous disease of the kidney as a rare occurrence. Rayer, *Maladies des Reins*, vol. iii, p. 618, treats very fully of the affection, but he also speaks of it as being secondary to tuberculous disease elsewhere, and for the most part also to such disease in a rather advanced form. Dr. Prout, *On Stomach and Urinary Diseases*, 3d edition, pp. 393–400, notices another class of cases not connected with tubercle, concerning which he confesses his own knowledge to be but incomplete. Such cases are not very rare in women; they will deserve a careful investigation. In my hands, I must confess that they have been the opprobria of the ward.

judging of the comparative frequency of tubercular disease of the kidney in the two sexes; it certainly is not common in the female; or, perhaps, it may be that one comparatively seldom sees the termination of a disease so chronic as this would appear often to be, causeless irritability of bladder sometimes occasioning distress and proving rebellious to treatment for years before the more serious symptoms set in. Possibly the more acute symptoms coincide with the extension of mischief to the bladder, though its amount varies greatly; for while I have sometimes found nothing more than intense congestion of its lining membrane, I have also in other instances seen it ulcerated, with patches of lymph on its surface, or have even found it completely destroyed, the muscular coat being everywhere exposed, and the broad bands of muscular fibre of a vivid red crossing the interior of the organ in all directions. Once, too, the mischief had passed even this point; the bladder was perforated at one spot near its upper and posterior part, where the adhesion of a portion of omentum to it had alone prevented the escape of its contents, and in other parts the peritoneum alone remained entire. In this case, too, the disease had extended even to the urethra, the walls of which were exceedingly thickened, while its lining membrane was destroyed by ulceration, and numerous warty growths or granulations beset its surface.

In this, and in other cases, it is no doubt not to the tubercular deposit alone, but rather to the consequent pyelitis and cystitis that the patient's intense sufferings are due. What it concerns us most to bear in mind is, that inflammation of the kidneys and of the bladder, may occur as secondary to tubercular deposit, when yet no other symptom of tuberculosis is present, and further, that such a disease may run its course to a fatal issue without phthisis supervening, even without any deposit of tubercle in the lungs or elsewhere than in the diseased organs and the absorbent glands in their immediate vicinity.

One other class of cases there is, characterized like the preceding by great irritability of the bladder, but more chronic in their course, and tending less certainly to a fatal issue, though as little amenable to treatment. Their symptoms come on in early adult age, and occur independently of pregnancy, marriage, or of any disorder of the uterine functions, while the changes which the urine itself presents are not very remarkable. It is neither laden with pus, nor does it abound in phosphatic deposits; its quantity usually falls a little below the average, but its specific gravity seldom much exceeds 1020°, occasionally falls below it; it is usually nearly neutral, slightly turbid, containing a little excess of phosphates; sometimes also crystals of the oxalate of lime may be discovered in it, and now and then a little albumen, though its presence is by no means constant.

The history of these cases is usually very obscure, and often presents nothing more definite than the causeless occurrence of frequent desire to pass water, attended by dull pain in the loins, extending to the hypogastrium. These symptoms come on so

gradually, that the patient can scarcely tell the date of their commencement, but knows only that for some two or three years or more, a source of discomfort from which she used to be free, has been by degrees growing upon her. The general health often continues comparatively undisturbed, even after the irritability of the bladder has become very troublesome, while the symptoms of constitutional disorder which do at length appear, are commonly of a very vague and ill-defined character, such as loss of appetite, loss of strength, and general gastro-intestinal disorder, with a tongue thinly coated with yellow fur, and not cleaning under any modification of treatment. My impression is, that these are cases of a chronic form of nephritis, and that when they endanger life, it is by the extension of the mischief to the lining membrane of the kidneys, and by the supervention of pyelitis, with that chronic inflammation of the bladder itself with which it is usually associated. So long as this complication is absent, the disease shows little disposition to increase, while there are long pauses in its course, though never a complete subsidence of all the symptoms, the backache disappearing sooner than the irritable bladder, while even when things are at the best, a trivial cause, and especially a slight exposure to cold, will suffice to reproduce all the ailments with undiminished intensity.

Of all these affections, that in which the bladder is the primary seat of the mischief is, as might be expected, the most amenable to *treatment*, though even then the course of the diseasse is always slow, and recovery often but imperfect. Many of the instances of cystitis after delivery are traceable to neglect of the very obvious precaution of introducing the catheter when labor is at all protracted, or whenever the pressure on the neck of the bladder has been so considerable as to render micturition for a day or two painful or difficult. Another error which often lays the foundation of this very troublesome complaint, is the omitting to treat those slighter forms of cystitis which frequently succeed to a tedious labor, and which, though they in many instances subside spontaneously, yet rarely disappear so speedily or so completely if let alone as if a few leeches are applied over the hypogastrium, and the uva ursi, combined with some sedative, is administered, while the catheter is employed regularly to prevent any retention of urine. These precautions, too, are perhaps still more frequently overlooked, though scarcely less necessary in cases where peritonitis has occurred, or where inflammation of the uterine appendages has taken place after delivery or abortion, or even in the unimpregnated state, since subacute cystitis is far from being a rare sequela of any of the more active forms of abdominal inflammation in women of all ages and in all circumstances.

If the disease, on whatever cause it depends, has not been checked at its very outset, recovery will at best be tedious. Our prognosis as to this point may in general be deduced with tolerable accuracy from the condition of the urine, the presence in it of a large deposit of the phosphates being a more unfavorable sign

than an abundance of pus or of mucus. With reference to this, too, it may not be out of place to observe that in drawing our conclusions from the gelatinization of the urine with liquor potassæ, or from the abundance of mucus in the fluid, we ought to make sure that there is no considerable leucorrhœal or purulent discharge from the vagina, since its unsuspected admixture with the urine has sometimes led to the expression of a far more unfavorable opinion as to the state of the patient than was really called for.

So long as the disease retains anything of an acute character local depletion will still be useful, and the application of six or eight leeches to the hypogastrium, two or three times repeated, will be of more service than the employment once of a larger number. So soon, too, as the tenderness of the vagina admits of the introduction of the speculum or of a leech-tube, the relief afforded by drawing blood from the anterior vaginal wall will generally be found to be very remarkable. The patient should be kept in bed; her diet should consist of beef-tea, farinaceous substances, and milk, with barley-water and the Vichy water as her common drinks. In this stage, too, I know of no better medicine than the extract and decoction of uva ursi.[1] On the subsidence of the more acute symptoms, the diet may be improved, and the hydrochloric acid with pareira,[2] or half-drachm doses of the diluted phosphoric acid, may be substituted for the previous prescription, while anything which amends the patient's general health will probably be of service in lessening the irritability of her bladder. Wine and tonics are often of service when the acute stage of the ailment is passed, and the urine, though unhealthy in character, is secreted in sufficient quantity; and sometimes quinine, at other times chalybeate preparations, will be found to be most useful. The irritability of the bladder not infrequently continues as the result of mere habit after the disease to which it was originally due has subsided. Large doses of the tincture of the sesquichloride of iron, as fifteen or twenty minims three or four times a day, frequently relieve this infirmity; while it is also desirable to give a sixth or a fourth of a grain of morphia every night in order to lessen the incessant desire to pass water, which otherwise would deprive the patient of sleep. Something, however, will still always remain to be accomplished by the voluntary efforts of the patient to overcome a habit which, if unchecked, will so much interfere with the comfort of her future life. During convalescence, the patient cannot too sedulously guard against catching cold, or against any disorder of her menstrual function, each return of which will long

[1] (No. 12.)

℞. Extracti Uvæ Ursi, . . ℥j
Tinct. Hyoscyami, . . . ℥iij
Tinct. Aurantii, . . . ℥ij
Decoct. Uvæ Ursi, ad . . ℥vj
M. ft. mist., cujus sumat cochl. 2 ampla 4tâ quâque horâ.

[2] (No. 13.)

℞. Extracti Pareiræ, . . gr. xlviij
Acid. Hydrochlor. dil., ♏ xl
Morphiæ Hydrochlor., gr. ss.
Decoc. Pareiræ, . . ℥vj
M. ft. mist., cujus sumat 4tam partem 6tâ quâque horâ.

bring with it some revival of her former discomfort, and a threatening, at least, of the rekindling of former disease. Lastly, I may add, it is inexpedient that a married woman should return to her husband's bed, to the local excitement of sexual intercourse, and to the risks of pregnancy, until her recovery is well established.

Cystitis is unfortunately less often met with, at least among the poorer class of patients, in the subacute form than in one decidedly chronic, in which, in addition to pus and the phosphates, the urine contains a large quantity of extremely tenacious mucus, is intensely alkaline, and of a highly ammoniacal odor. In this condition, in spite of a very intense degree of local tenderness, and of very frequent desire to pass water, the abstraction of blood must not be resorted to; for it weakens the patient's general powers without alleviating her ailment. A first step towards relieving her sufferings is to place her in bed; the uniform temperature of the surface being thus maintained, prevents any sudden demand being made on the function of the kidneys, while the disposition to congestion of the pelvic viscera is much lessened by the maintenance of the horizontal posture. Throughout the whole course of one of these cases, opium in some form or other is the remedy on which our greatest dependence must be placed, and its value far exceeds that of any medicine supposed to exert a specific influence on the bladder. Of these medicines, two of the most useful, the uva ursi and the pareira, have already been alluded to. When these remedies fail in the forms which I have already suggested, I have seen benefit result from the combination of the pareira either with small doses of copaiba or with the benzoic acid. Sometimes, too, especially where the secretion of urine is scanty, the benzoin alone has proved serviceable, though a not infrequent drawback from any of these medicines is that they nauseate the stomach; and the alleviation of local suffering is then too dearly purchased at the expense of the patient's general health.

I have on several occasions made trial of injections into the bladder in cases where the condition of the urine was very unhealthy, and where it contained a large quantity of ropy mucus. For this purpose I have, in accordance with Sir B. Brodie's suggestion, employed the decoction of poppies, to which I have but very rarely added a few drops of dilute nitric acid. The instances, however, in which this proceeding was at all tolerated were quite exceptional, and almost always such severe and such abiding pain was excited as to compel me to desist from a repetition of the experiment. Even when borne for two or three times, and giving an earnest of effecting some lasting good by the improvement which it wrought in the state of the urine, pain has seldom failed to come on, and to preclude the continued employment of the measure. One reason of this failure (for I am not aware of any want of care either in the selection of the cases or in the application of the remedy) may perhaps have been that the persistence of chronic cystitis in the female subject for any considerable time,

generally, if not invariably, occasions irritation of the kidneys, and a sort of subacute pyelitis. There seems also to be a great tendency for the mischief in these cases to terminate in ulceration of the mucous membrane of the bladder, and not to stop short with the induction of that thickening which is so common in the male subject.

One other proceeding which I have now and then resorted to in cases of chronic cystitis with much irritability of the bladder, has been the introduction of a seton just above the symphysis pubis. I have observed decided benefit from it, especially in those cases where the irritability of the bladder was out of proportion to the amount of obvious disease; though from its nature this remedy is one to which we cannot very often have recourse.

It would perhaps scarcely be right to take leave of the subject of inflammation of the bladder without a word or two concerning those sad cases in which vaginitis following delivery terminates in the death of the tissues, and in the formation of a *fistulous communication between the bladder and vagina*. There can be no doubt but that in the great majority of instances this accident is due to the delay of instrumental interference in tedious labor, coupled with the omission to use the catheter. It is extraordinary how often this latter simple precaution is neglected, how often the statement of the patient or of her nurse is accepted as conclusive of her having emptied her bladder; while the practitioner, conscious perhaps of his own inexpertness in performing this little operation, is only too ready to frame an excuse to his own mind for not attempting to do that which he knows he should do but awkwardly, and fears that he might possibly fail to do at all. To this neglect of the catheter, and to the omission to interfere instrumentally as early as is necessary, is the occurrence of vesico-vaginal fistula to be attributed far oftener than to any direct injury inflicted by the instruments themselves. After labor is over, too, the same neglect to keep the bladder empty not only adds to the patient's distress, but greatly aggravates the perhaps inevitable cystitis, and renders the case to a great degree unfit for any attempt at cure by means of a plastic operation.

Wherever from the protraction of labor, and from the long stay of the head in the pelvic cavity, there is any reason to fear the occurrence of inflammation of the vagina, its possible issue in sloughing and in the formation of a fistula must always be borne in mind, and attention must be closely directed to the local condition of the patient as well as to her general symptoms. The bladder must be regularly emptied by the elastic catheter every six hours, a warm poultice must be constantly applied to the hypogastrium, and poppy fomentations to the vulva; while the vagina must be carefully syringed twice a day with lukewarm water, and local leeching must be at once employed on the first onset of symptoms of cystitis. The state of the parts must not be judged of from hearsay, but must be inspected every day; a precaution which, though especially necessary when any laceration of the pe-

rineum has taken place, is yet in these cases always worth taking, since the appearance of the vulva furnishes no bad index to the general state of the vagina. If the secretion from the vagina assumes an unhealthy character, and if shreds of mucous membrane appear in it, we may be sure that sloughing has taken place, and though the sloughing may be superficial, yet of this we cannot be certain, while contraction of the canal, and the formation of cicatrices are its almost inevitable results. The soothing injection previously used must now be changed for others of a more stimulating kind, while, when the parts begin to heal, it will be expedient to introduce a large gum-elastic bougie into the vagina, and to allow it to remain for some hours every day, in order to prevent adhesions forming between the opposite surfaces of the vagina by which the orifice of the uterus is sometimes almost completely closed, or the vaginal canal itself is divided into two chambers, into the upper of which the uterus opens. Nor indeed are these the only possible consequences of sloughing of the vagina, but in proportion to the extent of the mischief the vagina is shortened; the edges of any fistula are permanently kept asunder, the space between the opening and the neck of the womb is diminished, while the cicatrix tissue on which the operator has to depend for the closure of the aperture is endowed with far feebler vitality than the unaltered structures of which, if the mischief has been circumscribed, he may hope to avail himself.

Supposing all these points to have received due attention, the next question that suggests itself concerns the period after labor at which any operation for the cure of the fistula should be attempted. Now, I believe that nothing should be done within the first three months after delivery at the soonest, for the susceptibility to inflammation is greater in the woman who has recently miscarried or given birth to a child than in another, while not only are all plastic operations about the sexual organs attended by some hazard, but a degree of local inflammation quite inadequate to cause danger to the patient, may yet more than suffice to destroy the promise of the most dexterous operation. Another reason, too, for some delay is that within certain limits a fistulous opening is likely to contract; and it is well to obtain the full amount of improvement which nature can effect before having recourse to any surgical proceeding. Besides this, too, it is of the greatest importance that a person should be in the best possible health before the operation is undertaken, and no delay can be regretted which affords the opportunity for the amendment of her general condition, and the improvement of the state of her urine. The two generally keep pace with each other, and my own impression is, that to operate at a time when the health is feeble, and the urine abounds in phosphatic deposits, is completely to throw away all chance of benefiting our patient. If the aperture in the bladder is comparatively small, so that urine can be retained for an hour or so, in certain positions of the body, delay may be allowed a month or two longer, provided that the bladder tolerate the fre-

quent introduction of the catheter; an operation which the patient will soon learn to perform for herself. I am not, however, disposed to recommend that a catheter be kept constantly in the bladder; for a few days are generally the utmost limit during which the patient can bear it; the bladder then becoming irritated by its presence, so as to compel the removal of the instrument. Still less would I advocate the use of the plug, or of any mechanical device for restraining the outflow of the urine. All such contrivances irritate, and are likely to interfere with that healthy condition of the parts which it is so essential to maintain. In all instances, therefore, where the aperture is large, and where no urine is retained, delay continued after the effects of the puerperal processes have subsided, answers no useful end; while when waiting for this we must content ourselves with the daily use of the tepid hip-bath, with the injection of warm water into the vagina, and with the most sedulous ablution and scrupulous cleanliness, as means of preventing the irritation of the parts by the perpetual escape of the urine.

It would be out of my province to go into detail concerning the operation for the closure of vesico-vaginal fistula. Two points only I may just refer to. One concerns the utility of the galvanic cautery, especially in the more chronic fistulæ, in those of small size, or whose dimensions have been reduced by other operative proceedings. By its frequent application in one case, my colleague, Mr. Paget, effected a complete cure. The other point has reference to the great merit both of the mode of operating adopted by Dr. Sims, of Alabama,[1] and also of his curved catheter, which often remains in the bladder without any trouble or any adaptation of her posture on the part of the patient, and answers the purpose of preventing all escape of urine by the wound far more effectually than a catheter of the ordinary form. Even this, however, irritates in a few days, and requires withdrawal earlier than is quite satisfactory; an evil which perhaps its construction of some very light material might in some measure obviate.

It is not necessary to say much about that rare accident *intestino-vesical fistula;* for the circumstances in which it occurs have no necessary connection with the sexual ailments of women. I have met with it but thrice. In the first case, it was associated with malignant disease of the uterus; and dysuria and painful defecation had existed for between two and three years, their occurrence being coincident with the appearance of an indurated tumor in the left iliac and inguinal regions; and the escape of fæcal matter with the urine had taken place for four months previous to the patient's admission into the hospital. In the second case, the mischief succeeded to ulceration of the intestines during fever nine

[1] *American Journal of Med. Sciences*, Jan., 1852, and a pamphlet with the title, *Silver Sutures in Surgery*, New York, 1858. His earliest and his latest suggestions present, indeed, many points of difference, but all seem tending to simplify the means of relieving this most grievous infirmity, and to increase the chances of its cure.

weeks before, which had issued in the formation of a pouch communicating above with the sigmoid flexure of the colon, and below with both rectum and bladder. This patient died in the course of a few weeks, but less in consequence of the local disease than of the progressive increase of the exhaustion which the fever had occasioned. The third case was that of a young lady in whom suppression of the menses from cold was succeeded by inflammation, which involved among other parts the uterine appendages on the right side, where a distinct tumor formed. This tumor, at first quite solid, afterwards grew softer, and then diminished in size. Its diminution was not attended by any very marked discharge of pus, but about the same time purulent and fæcal matter began to appear in the urine, and continued to be intermixed with it for three weeks when she first came under my notice. In this case, as in the other two, the sensitiveness of the bladder was so great that all attempts at syringing it with tepid water were of necessity discontinued; but great relief followed the use of very simple means, such as the employment of the uva ursi, of hydrochloric acid and the pareira, and the administration of opium or morphia, to mitigate suffering and to relieve the irritability of the bladder. In the case of the young lady, too, concerning whom alone was there much room for hopefulness, the fistulous communication became closed in the course of two months, and after the lapse of a year I saw her in perfect health; slightly diminished mobility of the uterus being the only remaining evidence of the serious bygone mischief.

I am not aware of having ever met with those *soft fungous tumors*, or polypoid excrescences from the bladder, whose true relation to malignant disease seems to be still undetermined. It is, indeed, possible that in some of the cases of dysuria which have come under my notice the symptoms may have arisen from this cause; but there is no sign actually pathognomonic of their existence, and though in all obscure cases I am accustomed to have recourse to the microscope for help, I have never yet succeeded by its means in the diagnosis of any outgrowth from the bladder.[1] In one respect, indeed, these growths conform to the same rule as decided malignant disease of the bladder, for while not very common in either sex, they are yet infinitely rarer in the female than in the male. Of ten cases of fungoid disease of the bladder recorded in the *Transactions of the Pathological Society*,[2] there were but three in which the subject was a female, and in like manner of the seven cases of carcinomatous disease of the bladder

[1] The general opinion, and that adopted by Rokitansky, *op. cit.*, vol. iii, p. 460, is that these outgrowths all belong to the class of malignant diseases. An opposite view is, however, maintained by Mr. Sibley, in *Transactions of Path. Society*, vol. vii, pp. 256 and 214, based on very careful microscopic observations. Gross, *On the Urinary Organs*, 2d ed., Philadelphia, 1855, p. 324, in his notice of these outgrowths, assumes their non-malignant character.

[2] The three cases in the female subject are reported in vol. v, p. 200, vol. vii, p. 256, and vol. xi, p. 153; the others in vol. ii, pp. 85 and 237, vol. iii, pp. 125 and 127, vol. v, p. 201, vol. vi, p. 258, and vol. viii, p. 262.

on which M. Lebert[1] founds his observations, six occurred in the male subject.

In the only case of *primary malignant disease* of the bladder that has ever come under my notice, the patient was a widow woman, sixty-two years of age, who had suffered for a year previously from pain in the region of the bladder, aggravated after passing water, the calls to which became more frequent than natural, while at the same time her urine grew turbid, and deposited a thick sediment. Blood now frequently appeared in her urine, sometimes in small quantities, sometimes in clots, and about three months before I saw her she lost a large quantity at once. She had of late suffered from pain in the back, and for two months the urine had been always thick with a ropy sediment. No treatment had been adopted till three weeks before her admission into the hospital, when the patient applied to a surgeon, who introduced a catheter, an operation followed by considerable hemorrhage, which lasted for several days, though it was eventually suppressed by gallic acid.

On being received into the hospital the patient's appearance was healthy, her pulse was 80, and soft, her tongue slightly coated, her bowels were regular. No tumor was perceptible in the abdomen, but firm pressure immediately over the pubes caused some pain. The uterus was high up, small, its tissue soft and perfectly healthy. In front of the uterus, pushing it into the posterior half of the pelvis, was a firm, somewhat irregular growth, reaching from the anterior half of the pelvis in the situation of the bladder, apparently extending round that organ on either side, but much more on the right. This growth was perfectly immovable; it seemed to be connected with the pelvic walls; was somewhat tender on pressure. It was of such size as to occupy the whole anterior half of the pelvic brim, though not dipping down considerably into the pelvic cavity.

The urine was pale, alkaline, depositing ropy mucus, and under the microscope crystals of the triple phosphate and cells of nucleated epithelium were perceptible.

The patient derived considerable comfort from treatment during ten days' stay in the hospital; but, returning home at the end of that time, and indulging in the intemperate habits to which she was addicted, she fell and injured her face—an accident that was followed by fatal erysipelas on the twelfth day after she left the hospital. The uterus and vagina were found on examination after death to be perfectly healthy; but the whole posterior half of the bladder was occupied by a medullary growth, with an irregular surface, which projected into the cavity of the organ, its substance being in part firm, in part almost semifluid. The anterior half of the bladder was quite healthy, as also was the substance of both kidneys, except that the right ureter being involved in the diseased mass was dilated to three or four times its natural

[1] *Op. cit.*, p. 876.

size, and the infundibulum of the right kidney was enormously enlarged.

As far as it went, this patient's history was exactly that of malignant disease of the bladder, and had not her life been prematurely cut short, the affection would no doubt have run its usual course. Hemorrhage would have returned again and again, and would have weakened the patient more and more; the increased growth would have produced increased difficulty in micturition, while the advance of the malignant disease would have been associated with the further development of the cancerous cachexia; till, under these combined causes, death would at length have taken place in circumstances far more painful than those by which it was actually attended.

As in this case, so I believe in most instances of primary malignant disease of the bladder, there is but little tendency to the perforation of its walls and the extension of the disease into the vagina. The constant dribbling away of the urine which sometimes attends the more advanced stages of this disease by no means necessarily indicates the existence of any communication between the bladder and vagina; but is due in many instances partly to the encroachment of the evil on the cavity of the bladder, partly to its walls having been rendered unyielding by disease, and especially to the infiltration of the tissue of the neck of the bladder with carcinomatous deposit. The observation of Kiwisch[1] is also worth repeating here, "that the occurrence of incontinence of urine in the course of cancer of the uterus is not to be regarded as a certain evidence of the occurrence of perforation of the bladder, for this symptom is frequently only the consequence of carcinomatous infiltration of the neck of the bladder, and especially of that part corresponding to the sphincter, by which it is hindered in the performance of its functions, and thus, no longer closing the ostium vesicæ, admits of the constant escape of the urine."

Though the diagnosis of fungoid outgrowths from the bladder may be obscure, yet the ordinary form of malignant disease of the organ appears to be too well marked to leave much room for uncertainty. The ceaseless pain and difficulty in micturition, coupled with the frequent desire to pass water, the occasional appearance of blood in the urine, sometimes in considerable quantity, and in the form of clots, while the secretion is habitually alkaline, unhealthy, and deposits a sediment, are of themselves strong evidences of the nature of the case, though scarcely conclusive unless associated with a firm, immovable tumor in front of the uterus. In the absence of the evidence obtained by vaginal examination, the extreme rarity of primary cancerous disease of the bladder always renders it the more probable supposition that the kidneys are the seat of the mischief.

There is no treatment specially applicable to malignant disease

[1] *Op. cit.*, vol. iii, p. 308.

of the bladder. The indications to be followed are very obvious, and within certain limits and for a certain time their fulfilment would not appear to be difficult. To relieve pain by opiates, to render the urine less irritating by the mineral acids, the pareira, and those other remedies to which reference has been made in the earlier part of this lecture, to keep the patient in bed, and thus to equalize as far as possible through the whole twenty-four hours the demands upon the functions of the kidneys, and to maintain the general health by good diet, and by the moderate use of stimulants, are the objects to aim at. When once the nature of the disease has been ascertained, the introduction of instruments into the bladder must be carefully avoided; while, if it should become necessary to draw off the urine, an elastic catheter without its stilet must be employed with all possible gentleness. It is, however, I believe, but seldom in the female subject that this disease produces actual retention of urine, though I remember a patient many years ago in the Middlesex Hospital, in whom the urethra became implicated in the extension of the growth, so that it became eventually necessary to tap the bladder above the pubes, an operation which she survived only a very few days.

LECTURE XXXII.

DISEASES OF THE URETHRA AND VAGINA.

DISEASES OF THE URETHRA. Congestion of the urethra, most troublesome as a chronic ailment; its symptoms and treatment.
Vascular tumors of urethral orifice, their seat, nature, symptoms, and treatment.
Ulceration of urethra; doubts as to its syphilitic nature.
DISEASES OF THE VAGINA. Acute vaginitis; character of the discharge which attends it as distinguished from uterine leucorrhœa: its treatment.
Chronic vaginitis. Granular vaginitis, its real nature.
Cysts of vagina.
Fibrous and fibro-cellular tumors of vagina.
Cancer of vagina.

FROM the study of the affections of the bladder, we pass next by a natural transition to the examination of those incidental to the female *urethra*, a class of ailments which, though comparatively trivial, are often attended by very serious discomfort, and are by no means easy of cure.

Of these ailments, one of by no means unusual occurrence is a state of undue *congestion of the urethra*, which sometimes presents itself in an acute form, at other times has a chronic character. In the former case, it very generally accompanies a similar condition of the pelvic viscera, and hence is chiefly observed either in newly-married women, or at the commencement of a menstrual period, or is experienced during the first few weeks of pregnancy. It is then attended by a sense of itching and irritation about the

urethral orifice, which is redder than natural, slightly swollen, and tender to the touch, while micturition is accompanied by a scalding or cutting sensation, the discomfort of which induces the patient to retain her urine longer than usual.

This, however, is a temporary discomfort, lasting for the most part no longer than the cause which produced it, though its frequent recurrence may no doubt issue in the *chronic* form of the ailment, which constitutes an abiding source of annoyance difficult to remove and very apt to recur. This chronic congestion of the urethra comes on with no apparent exciting cause in women who have given birth to many children, the interruption to the free circulation in the pelvic vessels having no doubt produced it, for which reason it also sometimes follows on attacks of uterine inflammation, or of pelvic abscess, or comes on during the growth of a uterine or ovarian tumor. It adds also in other instances to the distress produced by affections of the bladder, or is associated with disease of the kidney, and with morbid states of the urinary secretion. In this form of the disease there is very considerable thickening of the whole canal, which may be traced as a firm cord as thick as the finger, or even thicker, running under the symphysis pubis, somewhat tender upon pressure; while if the nymphæ are separated, it may be seen as a large swelling at the upper part of the entrance of the vulva, looking almost like a distinct tumor growing from the anterior vaginal wall.[1] The long-standing congestion has here been followed, as it is elsewhere, by overgrowth of the part, by hypertrophy of the cellular tissue of the urethra, and hence, though the swelling may vary in size, and the symptoms which it produces may admit of very great alleviation, yet they never entirely disappear, and very slight causes suffice to reproduce them.

These symptoms consist in a sense of fulness and aching, accompanied by frequent desire to pass water, which is scarcely at all relieved by the act of micturition. The erect posture aggravates these discomforts, as do sexual intercourse and the approach of the menstrual period, while relief is obtained by rest and the recumbent posture. The natural tendency of the affection is, as can be readily understood, to grow more and more troublesome under the influence of those causes which first produced it; attacks of an acute kind coming on every now and then, during which the urethra becomes more swollen and more tender, and the pain in micturition extremely severe. In one instance I saw an attack of this kind issue in the occurrence of suppuration in the cellular tissue around the urethra, and on puncturing the abscess quite an ounce of pus escaped; but on all other occasions these attacks have subsided almost spontaneously, and without leading to any such result.

There is no other condition with which, as far as I know, this

[1] This condition was first described by Sir C. Clarke, *Diseases of Women*, vol. i, p. 309.

state of the urethra can be confounded. The only caution, therefore, which seems to me necessary as to this point concerns the occasional dependence of this thickened state of the urethra upon the presence of one of those small vascular excrescences of its mucous membrane, which though usually seated at its orifice, are yet sometimes so far within the lips of the canal as to escape a superficial examination.

The acute form of urethral congestion is generally so brief in its duration as scarcely to call for treatment. A tepid hip-bath, the temporary discontinuance of sexual intercourse, if the symptoms have succeeded to marriage, the avoidance of all stimulants, mild diluent drinks, and slightly alkaline waters, such as the potass, or the Vichy water, generally answer every purpose. In the chronic form of the evil, attended by more or less hypertrophy of the tissue of the urethra, complete rest is an essential, and the avoidance of any cause, such as sexual intercourse, by which congestion about the pelvic viscera can be excited or maintained. Generally, indeed, if the urethral hypertrophy is at all considerable, the act of intercourse is attended by so much discomfort as to lead to its discontinuance. One or two leeches applied by means of a small glass leech-tube to the urethra itself, and repeated weekly, or twice a week for a short time, generally afford very great relief. Frequent cold sponging, and the use of cold astringent lotions, or of cold hip-baths, confirms the improvement which depletion and careful dietetic measures had obtained. I have found, however, that any attempt at the employment of pressure, as suggested by Sir C. Clarke, was attended by more annoyance than advantage, and therefore content myself, as the removal of the hypertrophied tissue cannot be expected, with explaining to the patient the nature of her ailment, and the simple means by which, though she cannot expect a cure, she may always obtain for herself great alleviation.

Under the name of *vascular tumors of the orifice of the meatus urinarius*, Sir C. Clarke described a very painful affection, which though it had not altogether escaped the observation of previous writers, had yet received comparatively little notice. These tumors are hypertrophied papillæ made up of elementary fibro-cellular tissue, covered by a layer of tessellated epithelium, the thickness of which varies much in different instances, and very richly supplied with vessels.[1] They grow from the lower, and often also from the lateral margin of the orifice of the urethra, but they scarcely ever involve the whole of its circumference, or spring from its upper border. Sometimes they are furnished with a pedicle, the bulk of the growth in that case projecting beyond the urethral orifice, but often they are sessile, and then distend its aperture, leaving a narrow passage at the upper part of the urethra, through

[1] Sir C. Clarke, *Diseases of Women*, Part I, p. 303. Paget, *op. cit.*, vol. ii, p. 282, note; Burford, Norman, *London and Ed. Monthly Journal*, June, 1849, which contains an account of their microscopic structure by Mr. Quekett; and again in *London Journal of Medicine*, Feb. 1852, p. 146.

which the urine flows, though not readily; the obstacle to its outflow occasioning considerable dilatation of the canal behind the excrescence. These growths vary much both in size, in vascularity, and in sensitiveness; but they do not in general exceed the bigness of a currant, are frequently smaller; and I have never seen one larger than a hazel-nut, though instances are alleged of their attaining the size of a pigeon's egg, or even a still greater magnitude. Their vascularity and their sensitiveness are generally proportionate to each other; those whose color is most vivid, bleeding the most easily, having apparently the most delicate epithelial covering, and the most exquisite tenderness.

The most vascular of these growths are of a bright cherry-red, while those which are least so are of the same color with the surrounding mucous membrane. Though frequently solitary, yet, in many instances, two or three separate growths are situated at the edge of the urethra, or just within its orifice; and it is by no means unusual to observe several small excrescences of a similar character, but generally of a much smaller size, springing from different points of the vestibulum. Sometimes, indeed, they are scarcely larger than the head of a blanket pin, but of a vivid red color, and most exquisitely tender. Those growths which occupy the urethra seldom extend above a sixth, or a fourth of an inch along its canal, but now and then they reach further, and cases are related in which almost the whole length of the urethra has been the seat of these excrescences, a condition the more unfortunate since it is almost impossible of cure.

The symptoms to which these outgrowths give rise are, pain in micturition, sometimes of extreme severity, though in other cases in which the sensibility of the tumor is lowest, the sensation is one of discomfort rather than of severe suffering. Coupled with this, there is in many instances pain on any attempt at sexual intercourse, and this pain is often aggravated by the presence of the small outgrowths to which reference has been made about the vestibulum. The presence of these growths does not produce a frequent desire to pass water, but, on the contrary, it not infrequently happens that, on account of the pain which attends the effort at micturition, patients acquire the habit of retaining their urine for a longer time than natural. When, however, the long continuance of the irritation has produced that thickening of the urethra which was spoken of a short time ago, its characteristic symptoms manifest themselves in a constant sense of weight and aching, and frequent desire to pass water.

It is not possible to say on what these outgrowths depend, though they have, in my experience, been much less common in the single than in the married, and in the young than in the middle aged. Thus of 21 cases of which I preserved a record, 18 occurred in married women, only 3 in those who were single. Five of the patients were upwards of 50 years old, 4 between 40 and 50, 6 between 30 and 40, 5 between 20 and 30, and only one was under 20 years of age. All but three of the married women

had given birth to children, and in the case of some of the patients there was a history of previous vaginitis or gonorrhœa; a circumstance which favors the suggestion of Scanzoni,[1] that in some instances these outgrowths depend on previous chronic urethritis.

There is a condition in some respects allied to this, and productive of some of the same symptoms, in which a tumor occupies and obstructs the orifice of the urethra, formed apparently only by a hypertrophied condition of the otherwise unaltered mucous membrane, a fold of which nearly blocks up the canal, causing it to dilate behind the point of obstruction, and thus renders the act of micturition difficult and painful, though unattended by the acute sensibility which accompanies the genuine vascular tumor. In many instances this hypertrophy of the urethral mucous membrane is associated with the presence of a number of small outgrowths of mucous membrane, fringing the orifice of the vulva, or growing from the outer edge of the lips of the urethra, and productive of some degree of irritation, and even of inconvenience in sexual intercourse.

The *treatment* of these excrescences, of whatever kind, is abundantly simple, and consists in their complete removal, and in the appplication to the surface whence they sprang of some strong caustic, or of the actual cautery, in order to prevent their reproduction, which is otherwise very apt to occur. I am accustomed always to apply the actual cautery for this purpose, both because it most effectually arrests that flow of blood, which I have known in one or two instances where it was not employed to be so considerable as to excite alarm, and also because it has seemed to me to be more efficient than any form of caustic in preventing the reproduction of the growth.[2] The operation, though of very short duration, is so painful, that very few patients can dispense with the use of chloroform, and its administration is the more needed since it is essential that the patient should remain absolutely quiet lest the urethra should be injured. Care to avoid this accident is, indeed, the only precaution specially called for during the excision of these growths; this, however, is all the more necessary, since injury to the orifice of the urethra has sometimes been followed by incontinence of urine, or by difficulty in its retention.

If after the excision of these growths there should remain any one spot where their removal has not been quite complete, or if, though no excrescence be present, a state of morbid vascularity of the urethra should continue, such as sometimes precedes or accompanies the formation of these little excrescences, either condition is generally capable of removal by the application twice a day, for two or three weeks, of the undiluted liquor plumbi.

[1] Kiwisch, *op. cit.*, vol. iii, p. 298.

[2] Dr. Medoro, of Padua, recommended some years ago in an Italian journal, whence it was extracted in Schmidt's *Jahrbücher*, vol. xxxvii, p. 186, the use of the actual cautery, without previous excision, for the removal of these growths. I have not tried it in this manner, but as an adjunct to excision I believe it to be most desirable.

There is a condition of *chronic ulceration of the urethra* of which I have met with a few instances, and which it may be worth while to refer to here, since, though I believe it to be of syphilitic origin, and therefore to lie, strictly speaking, beyond my province, I yet have found no mention of it in treatises on the venereal disease.

The affection has come six times under my observation: twice in married women, who acknowledged to having suffered from venereal disease; and four times in women of unchaste life, one of whom was at the same time suffering from a secondary syphilitic eruption. In every instance the patients alleged either that they had been aware of the ulceration of the urethra, or that they had experienced difficult and painful micturition for periods varying from nine months to five years. Twice the disease was associated with an excrescence from the mucous membrane of the urethra, having the characters of the less vascular form of those outgrowths which have just been described. The ulceration appears to commence at the orifice of the urethra, and to extend thence inwards towards the bladder, producing as it extends a great widening of the canal, and a patulous state of its orifice, so that the finger-tip can enter it with ease, while the surface is the seat of large, firm, indolent granulations, which secrete a small quantity of a muco-purulent fluid, are not in general very tender to the touch, but highly sensitive to the passage of urine. I have met with this ulceration of the urethra independent of any other disease of the sexual organs, but have also observed it in cases where previous ulceration had destroyed the clitoris and the nymphæ, and have seen it associated with unhealthy ulceration about the posterior commissure of the labia and the entrance of the vulva; as also with those small condylomatous growths about the vulva in cases of vascular tumor of the urethra, and these latter, indeed, are more commonly present than absent. When the disease has advanced far, or has been of long standing, the cellular tissue beneath the urethra usually becomes considerably thickened, and I have seen the lower wall of the urethra represented by a dense, cartilaginous substance, not unlike one of the lips of a hypertrophied and partially procident cervix uteri; while on two occasions I have been able to carry my finger along the whole length of the canal into the bladder.

Even when not very far advanced this disease causes difficulty in the retention, or actual incontinence of urine, while, when it has extended along the whole canal, and left its aperture permanently patulous, the patient becomes almost completely unable to retain her urine at all. One such case I saw in a young woman, aged 22, in whom there was not the least power to hold the urine: an infirmity that she said had existed many months. I gave her an elastic pessary to wear, which, by pressing against and mechanically closing the urethra, rendered her more comfortable. Once, also, I saw a prostitute whose ulcerated urethra was so widely open that two fingers could be passed into the bladder with ease. She was constantly soaked with urine; but in spite of her loath-

some condition still plied her trade, and no argument could induce her to abandon it.

Whether these cases are truly syphilitic, or whether they deserve more properly to be classed with the rodent ulcer, or lupus exedens, I am at present unprepared to say. On the one hand their directly syphilitic origin may appear to be rendered doubtful by the circumstance that in only one instance was there any evidence of then existing venereal taint; while on the other hand the affection of the urethra differs from the other forms of rodent ulcer, lupus, or esthiomène, in being unattended by the same disposition to great thickening of the adjacent tissues, which, in the case of lupus of the vulva, approximates the affection at a first glance very closely to elephantiasis.

In its less severe forms I have seen this condition greatly improve, the pain in passing water diminish, and the ulcerations cicatrize under the use, twice a day, of a lotion composed of ℥j of oxide of zinc suspended by means of half an ounce of mucilage in an ounce of water, and injected into the urethra, while the surface was shielded from the irritation of the urine by the abundant application to it of the zinc ointment. At the same time the continued employment of the iodide of potass and syrup of iodide of iron have seemed to exercise a beneficial influence on the patient's general health, which in every instance has appeared to be indifferent. For the most part, however, these measures seldom prove more than palliatives; but in one case of very long standing, when other means had completely failed, the repetition three or four times of the actual cautery was of the most signal benefit. It was of course applied but lightly, so as not to destroy the tissues to any depth; and under its use the large granulations by degrees disappeared, leaving a healthy surface behind; the pain in micturition subsided; the wide urethra contracted its dimensions; and the patient regained the power of holding her urine. I am not prepared, however, to say how far in this instance the amendment was lasting, or how far the most extreme cases would be amenable to the same treatment.

As we approach the end of these lectures, the interest which I would fain persuade myself attached in some degree to the subjects that were brought before your notice diminishes, I fear, at almost every step. We have come now to the study of ailments purely local in their character, often, indeed, painful, always annoying, sometimes dangerous, but which yet afford small matter for investigation, and seem to yield little scope for the exercise of the higher qualities of the practitioner of medicine. But an observation which I made some years ago, when addressing the seniors of our profession, may perhaps be repeated without apology to those who are but beginning the exercise of medicine, and on whom it cannot be too deeply impressed that "the thousand smaller ills to which mankind is subject, bring, in their frequent repetition, as much suffering, cause as much sorrow, and therefore are as worthy of our heartiest labor to understand, and of our best efforts

to relieve, as those perilous visitants—inflammations, fevers, apoplexies, which threaten life only at long intervals, or on rare occasions."[1]

With this preface let us now pass to the study of the *diseases of the vagina*, and of the external organs of generation. And first among the ailments of the vagina we may notice, as we have done in the case of other organs, those affections which are the result of inflammation either in an acute or in a chronic form.

The *acute form of inflammation of the vagina*, apart from those cases in which it occurs in the puerperal state, is probably oftenest due to impure sexual intercourse. Between gonorrhœa, however, and acute vaginitis dependent on any other cause, there does not seem to be any certain distinction furnished either by the character of the symptoms or by their severity, while a similar treatment is applicable to both. When dependent on the contagion of gonorrhœa, the symptoms generally commence within three days after the suspected intercourse; but vaginitis may be equally excited by exposure to cold or wet, and especially by getting wet-footed; by local irritation of the sexual organs, by intemperate or unaccustomed sexual intercourse, and to this latter cause attacks of moderately severe vaginitis are not very rarely due in newly-married women.

A disagreeable sense of fulness, heat and tenderness about the vulva, with frequent desire to pass water, and pain and scalding in the act of micturition, are the symptoms with which it sets in. Sometimes there is associated with these discomforts great swelling of the labia, which are so tender that the sitting posture can scarcely be borne, while a feeling of aching and weight extends along the perineum, and considerable tenderness of the hypogastrium announces that the bladder has become involved by the advance of the inflammation. For the first twenty-four hours the customary secretion is suppressed; but a discharge then begins to be poured out in great abundance; yellow, acrid, purulent, occasionally streaked with blood, always of an offensive smell. This discharge is chiefly furnished from the lower extremity of the vagina, though the inner surface of the nymphæ, and the parts about the vestibulum also contribute to it, and sometimes the inflammation extends along the vaginal canal, the whole of which may then pour out the discharge. In a few instances the mischief extends even further; I have seen internal metritis supervene upon inflammation of the vagina, and two successive attacks of vaginitis, after an interval of eighteen months, were followed in the same patient by such severe peritonitis as to call on each occasion for the abstraction of blood. These, however, are purely exceptional occurrences; and in most instances the affection remains limited to the vulva and the lower part of the vagina.

If the parts are examined during the acute stage of the affection, they appear of a bright red color, shining, and swollen, while if

[1] *Croonian Lectures*, 8vo., London, 1854, p. 94.

the finger is introduced into the vagina, the heat of the parts will be found to be greatly increased. The introduction of the finger even is almost always excessively painful, and the tenderness is so great as to render the employment of the speculum quite impossible. During the severity of the onset of the disease, an abscess sometimes forms in one or other labium, usually, if not invariably, having its seat in Cowper's gland, but, supposing this not to be case, the swelling and tenderness generally abate in four or five days, the discharge loses its acrid character and offensive odor, and except that its quantity is excessive, differs little from the muco-purulent secretion which constitutes ordinary leucorrhœa.

These changes in the character of the discharge appear to depend on the more or less abundant presence of pus globules, and of the tessellated epithelium of the vagina: desquamation of which takes place so very abundantly in vaginal leucorrhœa that it furnishes us, as Dr. Tyler Smith[1] has shown, with a very valuable means of determining the source of the discharge from which a patient suffers. To a very great extent also similar information may be gathered from the discovery in the discharge of a small infusorial animalcule first described by M. Donné, and once supposed by him to be pathognomonic of gonorrhœal, as distinguished from simple vaginitis. He soon, however, found cause to renounce this opinion, though he still alleges that the *Trichomonas* is never observed in healthy vaginal mucus, but only in the secretion when containing a large admixture of pus globules. This latter statement, too, is confirmed by the researches of Kölliker and Scanzoni,[2] who further add the remark, that while never present in the cervical mucus, and by that circumstance plainly demonstrated to be something more than a mere cell of ciliary epithelium, as has been sometimes imagined, the *Trichomonas* is on the one hand not constantly present in vaginal leucorrhœa, and on the other the existence of the disease in a grave form is by no means essential to its development, since it is found in some persons in apparent health, and in whom the admixture of pus globules with the discharge though evident, is yet not very considerable.

It may perhaps be added, that as the microscope fails to furnish us with a means of distinguishing between gonorrhœal and simple vaginitis, so no symptom or combination of symptoms is absolutely conclusive on this point. The amount of affection of the urethra certainly strengthens the suspicion of the gonorrhœal origin of the disease; but urethral inflammation and discharge are sometimes present in cases where no suspicion of gonorrhœa can for a moment be entertained, and according to M. Ricord, are likewise absent in cases avowedly due to impure intercourse, about once in every three times.

[1] *On Leucorrhœa*, &c., chap. iv, pp. 51–79.

[2] See with reference to these points, the very elaborate investigations of Kölliker and Scanzoni, on the secretion of the mucous membrane of the vagina and cervix uteri, in Scanzoni's *Beiträge*, &c., vol. ii, Würtzburg, 1855, pp. 128–146.

It is comparatively seldom, at any rate in private practice, that vaginitis or vaginal leucorrhœa comes under our notice in its acute stage. If it does, the employment of tepid hip-baths, of tepid vaginal injections, rest, and mild laxatives, usually suffice to afford relief, while as the inflammatory symptoms subside injections of cold water, of the diluted liquor plumbi, of solutions of sulphate of zinc, or of alum, will restrain, and in a week or two put a stop to the profuse discharge which for a season remains behind. Now and then, however, if the pain is very severe, the tenderness great, and the swelling of the labia considerable, it is expedient to apply eight or a dozen leeches to the vulva, to encourage the bleeding by a warm hip-bath, and a warm bread-and-water poultice, and afterwards to keep warm fomentations of two parts of the decoction of poppy and one part of the diluted lead lotion constantly applied to the vulva. These measures will, in most cases, within less than twenty-four hours, reduce a state of previously intense suffering to one of very bearable discomfort. Sometimes, however, the difficulty and pain in passing water continue very distressing, and in that case the extract and decoction of uva ursi with small doses of liquor potassa and of the tincture of henbane seldom fail to afford very speedy and very marked relief. I am disposed to think, indeed, from my hospital experience, that the complication of vaginitis with some degree of inflammation of the bladder often fails to receive that degree of attention which it merits; for it has happened to me not infrequently to meet with patients in whom very distressing dysuria, the evident result of chronic cystitis, was referred back to some acute attack of leucorrhœa or gonorrhœa which had occurred months before.

But it is, as I have stated, a more *chronic form of ailment* with which we oftener have to do, and this not only in cases where a leucorrhœal discharge has been left behind after the subsidence of the acute attack, but in a large number of instances where the ailment has been chronic from the outset. Such are many of the cases of leucorrhœa that occur in women exhausted by frequent childbearing, or by prolonged lactation, or by menorrhagia. Such, too, are the instances in which leucorrhœa accompanies chlorosis, and of the same kind are those abundant discharges from the sexual organs which take place in strumous children, and which, sometimes assuming a subacute character, and being associated with much swelling of the external parts, have been erroneously supposed to be due to criminal attempts at intercourse. I may just add, however, that the discharge in the case of the child takes place almost entirely from the parts in front of the hymen, and is the result, therefore, rather of vulvitis than of vaginitis. Any condition which maintains or is dependent on habitual venous congestion of the abdominal viscera is apt to be associated with vaginal leucorrhœa. Hence the discharge is often observed not only in women who suffer from ovarian or other abdominal tumors, but also in patients liable to disorders of the liver, or to hemorrhoidal affections, or who suffer from habitual constipation.

Uterine tumors, and uterine misplacements are, as it is almost needless to observe, apt to be associated with vaginal leucorrhœa; while even in those cases in which the greater proportion of the discharge is poured out from the interior of the uterus, there is almost invariably a large admixture of secretion furnished from the walls of the vagina.

It is obvious that the chances of cure of this chronic vaginal leucorrhœa depend entirely on the uncomplicated character of the ailment, or on the diseases with which it is associated being of a kind to admit of removal. Thus, the leucorrhœa attendant on uterine tumors, while in itself it need not excite any solicitude, yet scarcely admits of cure, its restraint by astringent lotions being all that can be attempted. For the same reason, too, those vaginal discharges which are associated with abdominal tumors do not admit of cure; while in those instances in which they accompany hepatic disorder or abdominal congestion, as is not infrequently the case in women after the middle period of life, and in whom menstruation has ceased, the cure of the local ailment depends on the removal of the constitutional disorder. The leucorrhœa of the feeble and chlorotic obviously needs a tonic plan of treatment, and the administration of chalybeates, in addition to the employment of local remedies; while, in the case of children, it is always necessary to ascertain that the discharge from the vulva is not produced by the irritation of ascarides in the rectum.

But, not to dwell upon points which are almost self-evident, I must just notice some of the more useful astringent applications; for to these local means we must chiefly trust, since there are no internal remedies that exercise a direct influence on vaginal discharges in the same way as cubebs and copaiba restrain uterine leucorrhœa. First among these means stands the abundant use of cold water, either for ablution, for vaginal injection, or in the form of the hip-bath; for simple though it is, and therefore often too little had recourse to, it is not only very efficacious, but in many instances suffices of itself to arrest the discharge, and, if continued, to prevent its return. The water may be rendered more astringent by the addition of about a quarter of an ounce of alum to each pint of water used for injection, or by mixing a quarter of a pound of alum with the water used for the hip-bath, and which should be employed either on rising from bed, or, at any rate, during the morning hours, not just before going to rest at night. The alum bath has the advantage of being one of the best astringents, and also of being one of those remedies with which a patient can always supply herself without the intervention of the chemist. If, however, it should fail, as all local applications, if long continued, are in turn apt to do, a more powerful injection may be obtained by the addition of a drachm of tannin to each two drachms of the alum, or by dissolving the alum in decoction of oak-bark instead of in water. Both of these lotions, however, have the disadvantage of staining the linen almost as indelibly as the nitrate of silver,

though not of so dark a color. The lead lotions of various strengths, and lotions of sulphate of zinc, either alone, or in combination with alum, may also be employed, if other means fail; but failures very often depend on the inefficient use of the injection, rather than on any fault in the remedy itself; and it is therefore always of importance to ascertain that the patient employs a syringe of sufficient size, and that she uses the injection when in a recumbent and not in a sitting posture. It is also always desirable that cold water should be injected into the vagina, so as to remove the discharge as much as possible before the medicated injection is employed.

I have no personal experience of the use of nitrate of silver in solution or in substance in cases of chronic leucorrhœa. There can be no doubt, however, but that in instances of very obstinate discharge after acute gonorrhœal vaginitis, the remedy has proved of great service.[1] For very obstinate cases of vaginal leucorrhœa a plan of Scanzoni's will probably be found successful.[2] He introduces into the vagina a plug of cotton-wool, the outer surface of which has been bestrewn with alum in powder; or if there be much sensitiveness of the parts, with a mixture of one part of alum and one or two parts of loaf-sugar. This plug should not be allowed to remain longer than twelve hours at a time, nor should its introduction be repeated oftener than every second or third day, injections of tepid water being employed in the intervals. The chief drawback from the adoption of this plan seems to be that unless carefully watched a very troublesome vaginitis may be induced by the remedy, which in that case may aggravate instead of arresting the discharge. M. Guerin,[3] whose experience in the management of this class of ailments is so extensive, speaks also in the highest terms of the result of introducing a plug of cotton-wool, of the size of a walnut, and containing about a teaspoonful of powdered alum, through the speculum, and quite up to the fundus of the vagina, where he allows it to remain five or six days. He does not seem to have experienced any graver inconvenience from its use than a little irritation of the mucous membrane, near the fourchette, as the dissolved alum comes in contact with it, and which is readily removed by washing with tepid water. For the majority of cases even of very chronic leucorrhœa, however, a very efficacious and probably a safer mode of keeping the astringent in constant contact with the vaginal walls is furnished by the use of the alum or tannin pessaries of Dr. Simpson.[4]

Attention was specially drawn some few years ago by M. Deville, of Paris,[5] to what he believed to be a previously unnoticed form

[1] Acton, *On the Generative Organs*, &c., p. 287. [2] *Op. cit.*, p. 287.

[3] *Maladies des Organes Génitaux Externes de la Femme*, 8vo., Paris, 1864, p. 363.

[4] *Ed. Monthly Journal*, June, 1848, and *Obstetric Works*, p. 98. Formulæ are given there for various kinds of pessaries. The alum and tannin are made as follows: ℞. Tanninæ ℈ij, Ceræ albæ ℈v, Axungiæ ʒvi, misce, et divide in Pessos quatuor. ℞. Alum. sulph. ʒj, pulv. Catechu ʒj, Ceræ flavæ ʒj, Axungiæ ʒvss. Misce, et divide in Pessos quatuor.

[5] *Archives de Médecine*, Quatrième Série, tome v, pp. 305, 417.

of inflammation of the vagina, and to which, from its anatomical peculiarities, he applied the name of *granular vaginitis*. These peculiarities consist in the presence of numerous round, shot-like bodies of a more vivid red color than the adjacent tissues, in the depressions between the rugæ of the vagina, and especially abundant towards the upper part of the canal. These bodies were imagined to be the hypertrophied follicles of the mucous membrane, and were supposed to bear a large share in secreting the abundant thick yellow discharge which was poured out from the vagina. The affection was further observed to be connected very closely with the pregnant state, while it scarcely ever occurred in women who had not at some comparatively recent period given birth to children.

The researches of minute anatomists, and especially those of M. Mandt,[1] have shown, however, that the vagina is singularly destitute of mucous follicles, and that these bodies are nothing else than hypertrophied papillæ. This discovery, while it explains the association of granular vaginitis with the pregnant condition, at once deprives it of all claim to be regarded as a peculiar disease. It is nothing else than vaginitis, associated with hypertrophy of the vaginal papillæ; a physiological condition in pregnancy; one which, independent of that state, may follow or accompany long-continued inflammation, irritation, or discharge.

On two occasions I have met with *cysts projecting into the vagina*. In one instance their presence gave rise to no inconvenience, and the patient, who died of fæcal abscess, was not aware of their existence, though they were so low down as partially to protrude through the vulva. Two, which were of the size of a chestnut, were connected with the posterior vaginal wall, and were so firm as to convey the impression of being solid fibrous growths. The anterior cyst was smaller, softer, and felt like a small vaginal cystocele. The surface of all three was of the same color with that of the adjacent vaginal wall. After death, these cysts were found to have firm, thick, fibrous walls, to be lined by a polished membrane, and to contain a perfectly clear, glairy, yellowish, and rather viscid fluid, not unlike synovia; the anterior cyst differing from the others only in its walls being rather thinner. Similar in kind to this was a cyst described by Scanzoni,[2] which had slowly developed itself till it had attained the size of a pigeon's egg. It had probably been many years in course of development, for the patient had long experienced pain in sexual intercourse, referred to the situation of the cyst, and this pain at last became so severe as to render the act impracticable. The tumor was seated at the right side and anterior part of the vagina; it was very sensitive, tense, but yet yielded a sense of fluctuation. The mucous membrane covering it and in its immediate neighborhood was very red, and there was abundant secretion from the vagina.

[1] *Zeitschrift f. Rationelle Medizin*, 1849, vol. vii, p. 1.
[2] *Op. cit.*, p. 470.

The cyst was opened, and an ounce of transparent serous fluid was let out from its interior, which was felt to be lined by a smooth membrane. Injections of a solution of nitrate of silver were made into the cyst for fourteen days, in order to prevent any re collection of the fluid, and apparently with good effect; for six months afterwards no trace of the tumor could be detected. Almost identical with this was the history of the patient in my second case. She was a married woman, aged thirty three, who for some seven years had been aware of the presence of a swelling about the size of an egg, which, though not painful, was yet the cause of inconvenience in sexual intercourse, while besides she had more or less aching about the vulva, and for six months had suffered from frequent desire to pass water and from pain in micturition. The situation and appearance of the swelling were such as immediately to suggest the suspicion that it was a procident bladder, and it was only after the introduction of a catheter that this was ascertained not to be the case. It was of the size of an egg, projecting between the labia, and its surface, from exposure, had assumed much of the character of ordinary integument. It was elastic, evidently containing fluid, was situated at the upper part and rather to the right side of the vulva, springing from the under surface of the right nympha, and sufficiently movable to allow of its being pushed back entirely within the vagina. On puncture, nearly an ounce of glairy fluid was evacuated, and the cavity was afterwards injected with equal parts of tincture of iodine and water. The previous uncomfortable sensations were greatly relieved by the proceeding, and for a time at least the tumor was got rid of; but I do not know whether the fluid re-collected.

The only point of special moment connected with these cysts regards the distinction between them and those cases in which the vaginal wall itself is prolapsed, constituting a rectocele or a cystocele; either of which conditions, when of long standing, is associated with thickening of the vaginal wall, and may on a superficial examination be mistaken for a cyst in these situations. The complete disappearance of the tumor formed by the prolapsed vagina under pressure, and its increase upon any effort at straining, coupled with the results of the introduction of the catheter, are simple and conclusive means of distinguishing between a swelling produced by mere vaginal prolapse and one dependent on the presence of a cyst in its walls.

There is still much obscurity with reference to the mode of development of these cysts, though Virchow[1] is inclined to the opinion that they originate in obstructed mucous follicles. Such, no doubt, is the origin of those small superficial submucous cysts, seated quite low in the vagina, especially around the urethra, or at the lower part of the anterior vaginal wall, of which M. Huguier,[2] to whom we owe an elaborate essay on the subject, also makes

[1] *Die Krankhaften Geschwülste*, vol. i, 247.
[2] *Mémoires de la Société de Chirurgie de Paris*, vol. i, 4to., 1847, pp. 326–394.

mention. These cysts, which seldom exceed the size of a large pea, and are often smaller, appear to be merely obstructed mucous follicles, since their walls are always thin, and so transparent that their contents are visible through them. These cysts, with which I confess that I am not familiar, though Huguier speaks of them as being more frequent than the others, seem to produce no symptoms, but to burst spontaneously, or to give way during sexual intercourse, and are therefore of less importance even than the others.

My knowledge of *fibrous tumors* of the vagina is equally fragmentary, and indeed I believe them to be still rarer than cysts connected with its wall. In the only instance that I have met with, the tumor, which was spherical in form, did not exceed the size of a cob-nut, gave rise to no symptoms, and remained quite stationary for more than two years, during which period the patient was under my observation. Sometimes, however, tumors having this origin acquire a very considerable size; and the late Professor Kiwisch[1] quotes from a German journal the history of a case in which a tumor weighing more than ten pounds sprang by a pedicle of two fingers' breadth from the posterior vaginal wall, two inches from the orifice of the canal. Tumors of this large size, however, are possibly fibro-cellular, rather than strictly speaking fibrous growths, and spring originally not from the substance of the vaginal wall so much as from the cellular tissue around it, but naturally grow as they increase in size, in that direction where they encounter the least resistance, and thus come at last to assume the appearance of pedunculated tumors of the vagina. Such is probably the nature, and will most likely be the progress, of a tumor in a patient who was under my care in June, 1857, in St. Bartholomew's Hospital. She was 33 years old, had been married eight years, and a year after marriage had given birth to her only child. She professed to have suffered habitually from some degree of dysuria, which had been aggravated after her marriage; but in August, 1856, had suddenly become so much worse, after suppression of the catamenia, from catching cold, that the use of the catheter became necessary, and had at intervals been required since. Her urine, on admission, was turbid and mixed with blood, but her general health was good, and the dysuria almost disappeared under the influence of rest and very simple treatment in the hospital. The cause of her symptoms seemed to be a tumor, about three fingers broad, somewhat oval in form, but with its larger end towards the uterus, and which lay in the direction of the urethra. This tumor was firm, but with some degree of elasticity; its surface was smooth, and it was not tender on pressure. Behind it, and driven quite into the posterior part of the pelvis, was the healthy uterus, which had no connection with it whatever. The introduction of the catheter was attended by some difficulty, and the instrument, in entering the bladder, passed much to the left side. Now, supposing this tumor to increase, as

[1] *Op. cit.*, vol. ii, p. 560.

it doubtless will, it is in the direction of the vagina that it will encounter the least resistance; thither it will therefore grow, and there it will probably, in course of time, present itself as a polypoid tumor. Such, doubtless, was the history of the growth of a tumor which Mr. Paget[1] has described, and which I had the opportunity of seeing with him. It sprang originally from the right side of the vagina, and the patient had been aware of its existence for between three and four years, though she had sought for medical advice on account of it only within the previous twelvemonth. One physician whom she consulted took it for an abscess, and punctured it; another recommended the employment of some support. It had not protruded beyond the external parts till some ten days before its removal by Mr. Paget, at which time it hung beyond the vulva as a mass five inches in diameter, of a somewhat pyriform shape, connected by a pedicle, an inch and a half long and of the same thickness, with the right wall of the vagina, and the tissues beneath, just behind the right nympha, which was as it were arched over the upper part and right side of the neck or pedicle of the tumor. Its removal was accomplished with very little loss of blood; and the pedicle was found to pass by the outer wall of the vagina, in the loose tissue between it and the ramus of the pubes, and reached nearly two thirds of the way to the uterus. The characters of the tumor, as minutely described in Mr. Paget's own notes, with a copy of which he favored me, were just those of the fibro-cellular outgrowth, which is apt in all situations to attain a size such as the firm fibrous tumor less often reaches, and is always much slower in acquiring.

The subject of *malignant disease* of the vagina has been already in a measure anticipated in the remarks made upon uterine cancer. I am, however, inclined to think that the rarity of primitive cancer of the vagina has been to some degree exaggerated; and although the main features of the disease are the same as when it takes its point of departure from the womb itself, there are yet some reasons on account of which it deserves a separate notice. Cancerous disease of the vagina, consequent on similar affection of the uterus, begins for obvious reasons at the upper part of the vaginal canal, and travels thence downwards, involving in general the anterior more than the posterior wall. Primitive cancer of the vagina does not show the same predilection for the anterior wall; nor does it in general seem to begin at one spot, and thence extend; but, for the most part, cancerous infiltration takes place into the whole of one, or more often of both walls of the vagina simultaneously, and is at least as obvious near the vulva as in the neighborhood of the uterus. To this rule, which obtains in all instances of fungoid cancer of the vagina (and they are by far the more numerous, since to that class may be referred 15 out of 19 cases of which I have a record), the epithelial variety of the disease

[1] *Op. cit.*, vol. ii, p. 115.

forms an exception; for in that the mischief seems to begin at one circumscribed spot, not in the vicinity of the uterus, and, as far as my experience goes, in the posterior wall; and to extend to the subjacent tissues and to pass into the state of ulceration, while as yet the womb is quite unaffected, and apparently healthy tissue is to be found both above and below the seat of mischief.

The following statements embody the chief results that are deducible from the cases to which I have referred:

In 15 instances the disease was fungoid; in 4 epithelial. In 1 case only the disease, which was fungoid, was limited to the anterior wall; and in 1 of fungoid cancer, the right side of the vagina only was affected when I saw the patient, though the disease, doubtless, extended afterwards.

In 6 cases, of which 2 were fungoid and 4 were epithelial, the disease was limited to the posterior wall. In the fungoid cases the posterior uterine lip also was affected; in the epithelial, the uterus was free, though in one instance the os uteri began to be red, spongy, abraded, and bleeding, yet I think not cancerous.

In 11 cases, all of which were instances of fungoid disease, both vaginal walls were involved. In 2, however, the anterior wall was chiefly affected.

In 2 of these cases the contraction of the vagina prevented the uterus from being reached.

In 1 case there was an outgrowth from the interior of the uterus, and in 1 a granular state of the anterior lip, the nature of which was doubtful.

Or, in other words, in 6 cases the uterus was perfectly healthy; in 2 it could not be reached; in 2 the affection of the uterus was slight, and its nature not quite certain; in 9 it was the seat of decided cancerous disease.

With reference to the circumstances which favor its occurrence, cancer of the vagina seems to conform to the same rules as influence the development of uterine cancer; except, perhaps, that it appears to come on at a later period of life than cancer of the womb; for only 7 of the 19 cases were observed between the ages of 35 and 50; and the remaining 12 between the ages of 50 and 66. As with cancer of the womb, so also with that of the vagina, marriage and childbearing apparently favor its production; for only 1 of the 19 patients was unmarried; while the remaining 18 had been pregnant 95 times, and had given birth to 86 children; or, in other words, there were 5.3 pregnancies and 4.7 labors at the full period to each marriage.

Beyond the evidence furnished by these data of the general conformity of vaginal cancer to the same laws as govern the development of cancer of the uterus itself, I do not know that the conclusions are of much moment. The same similarity, however, between the two forms of disease, obtains also between its symptoms, whichever be the situation that it occupies, and the duration of the affection appears to be about the same in both instances.

The early symptoms very closely resemble, as this table shows, those which attend the commencement of uterine cancer.

The first symptom was	pain,	. . . . .	in 4 cases.
" "	hemorrhage without	pain, .	" 6 "
" "	" with	" .	" 6 "
" "	pain and discharge,	. . .	" 1 "
" "	discharge without	pain, . .	" 2 "
			19

Pain seems to be rather more frequent as an early symptom than when the disease begins in the uterus; and pain referred to the back, increased by defecation or micturition, is also of very common occurrence throughout the disease. The pain seems of a more abiding kind than that of uterine cancer, though in a large proportion of instances the severe paroxysms of suffering, due no doubt in great measure to uterine action being excited by the advance of disease in the womb, are absent. The reason for this is furnished by the fact that vaginal cancer may run its course to its fatal issue without the womb being at all implicated, though there is unquestionably a general disposition both to the extension of mischief by contiguity to the uterus, and also to the occurrence of secondary though independent affection of that organ.

Perforation of the rectum, or of the bladder, is not of such frequent occurrence in this disease as might beforehand be anticipated, though the action both of the bowels and of the bladder is commonly more or less difficult and painful; and the affection of the urethra, which sometimes takes place in fungoid cancer of the anterior vaginal wall, may render the evacuation of the bladder not only difficult but impossible.

The practical conclusions to be drawn with reference to this form of disease are somewhat of the following kind. That it occurs, though less often, yet in the same circumstances as uterine cancer, showing the same predilection for the married over the unmarried, and for those who have been frequently pregnant over the sterile. Its general symptoms seem also to be similar, except that mere painless hemorrhage is somewhat rarer than in uterine cancer,—a circumstance for which the seat of the disease in vaginal cancer probably affords a sufficient explanation. The progress of the disease appears in both instances to be analogous; the cancerous cachexia is developed in the one case as in the other, the advance of the evil is equally rapid, and the disposition to secondary deposits at least as decided in fungoid disease of the vagina as in fungoid disease of the womb.

There is but little to observe with reference to treatment, except that the topical palliatives which are of use in uterine cancer are obviously of more difficult application when the disease is seated in the vagina. The only gleam of hope that brightens the case of a patient with malignant disease of the vagina is afforded in those instances where the affection is of the epithelial kind. The similarity of structure between the vagina, vulva, and ex-

ternal parts shows itself, as has been so well pointed out by M. Huguier,[1] in the similarity of the diseases by which they are attacked. There is, therefore, some hope that ulcerated growths of the epithelial kind about the vagina may be found to belong to the class of lupus, or rodent ulcer, rather than to the more utterly hopeless category of diseases which are intimately allied with cancer, and that local treatment may not be so thoroughly fruitless as experience has too amply proved it to be in the case of malignant disease of the womb. But hope even derived from this source is, I fear, but too often doomed to be illusive; for, on the one hand, the position of the disease not only renders surgical interference extremely difficult, but in all the cases which have come under my notice, the mischief has extended too deep into the submucous tissue for it to be possible to dissect off the diseased structure from the subjacent tissues. On the other hand, the pain attendant on the introduction of the speculum generally renders any attempt at the continuance of the local treatment abortive. Some time since a case was under my care that seemed favorable for local treatment. A long strip of raised, red, large granulations extended for nearly an inch in breath and two in length along the left and posterior wall of the vagina up to its roof, but leaving some quarter of an inch of healthy tissue between it and the neck of the womb. Mr. Paget, who was good enough to see the patient with me, was in hopes, from the absence of thickening about the parts, that the disease might be classed rather with rodent ulcer than with true carcinoma; and accordingly we determined to apply the nitrate of mercury to the affected surface. The results of this proceeding were, for a time, most encouraging; and though the introduction of the speculum caused pain which lasted for many hours, yet the patient gladly submitted to a plan of treatment, the benefits of which she experienced in the diminution of the previously profuse, offensive, blood-stained discharge, in the mitigation of the backache, and the improvement of her general health. Three or four applications of the acid produced the complete cicatrization of all but just that part of the disease which affected the roof of the vagina. In that situation, however, the application of the caustic was extremely difficult, and there the mischief spread. Deposits took place, thickening the vaginal wall, the granulations grew larger, bled more readily, and extended close up to the side of the cervix uteri, between which and the diseased stuctures an interval no longer existed; and thus treatment was baffled, hope was lost, and we were driven once more to recognize the very narrow limits that circumscribe our power to heal. The patient left the hospital, and died painfully a few months afterwards; and I do not know that her life could be said to have been prolonged by the local treatment, though unquestionably it was for a short time brightened by a hope which, though illusive, yet cheated her only of some suffering and some sorrow.

[1] *Mémoires de l'Académie de Médecine*, vol. xiv, 1849, p. 500.

LECTURE XXXIII.

DISEASES OF THE EXTERNAL ORGANS OF GENERATION.

INFLAMMATORY AFFECTIONS. Inflammation of the labia, its connection with obliteration of duct of Cowper's gland; description of the gland; mode in which inflammation occurs in it.

Furuncular inflammation.

Eczema. Prurigo, its rarity. Pruritus generally independent of it; causes and treatment of pruritus.

Inflammation of Follicles of Vulva.

HYPERÆSTHESIA OF EXTERNAL ORGANS. Vaginal Spasm, or Vaginismus. Coccygodynia, or pain about coccyx. Remarks on Masturbation, and excision of clitoris for its cure.

ULCERATIVE AFFECTIONS. Tertiary Syphilis; difficulties of its diagnosis. Lupus; its characters, its relation to epithelial cancer. Case in illustration. Treatment.

MALIGNANT DISEASE, generally assumes form of Epithelial Cancer, its symptoms and course. Importance of early removal.

THE arbitrary line of demarcation which in this country separates the province of the physician from that of the surgeon has limited my experience both in private and in hospital practice with reference to the *diseases of the external organs of generation*. If, indeed, we leave out of consideration such as are the result of syphilitic infection, the remainder of these ailments are by no means of frequent occurrence, nor in general of very great importance.

Of *Inflammation of the labia, nymphæ, and external organs*, except as an accompaniment of vaginitis, I have seen almost nothing, and of the unhealthy *erysipelatous inflammation* of those parts, which, occurring in the child, is apt to pass into a state of *sloughing*, I have seen very little. Indeed, notwithstanding that for more than five-and-twenty years I have been connected with large institutions for the diseases of children, I have met with but three or four instances of its occurrence, and only one of diphtheritic inflammation of the labia and nymphæ. The circumstances in which either of these affections occurs do not seem to be as commonly met with in this country as in some parts of the continent; while they both appear to belong to the class of blood diseases rather than to be purely local ailments such as come more strictly within the scope of these lectures.

The inflammation of the labia attendant on vaginitis, more particularly on that form of it which is dependent on gonorrhœa, sometimes extends to the cellular tissue on one or other side, and ends in the formation of abscess. For the most part, however, abscesses in the labia are not the result of diffuse inflammation, but of *inflammation seated in one of those glands* which are known by the name of Duverney's, Bartholin's, or Cowper's glands.[1] They

[1] Like some old discoveries, so that of the existence of these glands, first found by Duverney in the cow, and afterwards by Bartholin in the human female, became forgotten after Haller had sought for them in vain. Mr. Guthrie, in his work on

are situated one on either side of the entrance of the vagina, in that triangular space bounded by the orifice of the vagina on the one side, the ascending ramus of the ischium on the other, and the transversalis perinæi muscle on the third, and are covered by the superficial perineal fascia, and by some fibres of the constrictor vagina. They are small conglomerate glands, of about the size of a bean, and open by a narrow duct some seven or eight lines in length just in front of the hymen, or of the carunculæ myrtiformes, and secrete that albuminous fluid which is poured out abundantly in sexual intercourse.

It happens sometimes that the duct of this gland on one or the other side becomes obliterated, and that the secretion then accumulates within it, causing it to form a small swelling of the size of a marble, a cob-nut, or somewhat larger, which projects at the lower part, and towards the inner surface of the labium. It may remain for some time in this condition producing little inconvenience, but in general it becomes irritated in walking, or painful in sexual intercourse, and thus the case first presents itself to our notice. If now it be opened before inflammation has attacked it, a couple of drachms of a fluid like the white of egg will be let out, the swelling will disappear, and may perhaps never be reproduced, since in many instances the cyst, after a free incision has been made into it, becomes obliterated. Sometimes though no considerable annoyance has been produced by the swelling, inflammation has taken place in its interior sufficient to render its contents purulent, while in other cases the inflammation is not limited to the gland itself, but extends also to the adjacent tissue. The labium then becomes hot, swollen, and intensely tender and painful at its lower part, so that the patient is unable to move about, or even to leave the recumbent position without great suffering, while on its inner surface the gland forms an exquisitely painful prominence, and matter escapes on a puncture being made, with great and usually permanent relief to the patient. It does, however, now and then happen that much suffering is produced by the successive re-formation of these tumors of Cowper's gland at intervals of two or three months, an annoyance which can only be prevented by laying the cyst freely open, and removing a portion of its wall, or probably by the injection of a solution of iodine into its cavity.

The above condition has never come under my notice except in comparatively young women, and who either were married or at least were accustomed to sexual intercourse. There are some other

Diseases of the Bladder, refers to them, though without giving any exact description of their form or relations; but it is to the venerable Tiedemann, of Heidelberg, that we owe our present accurate acquaintance with them. His essay, *Von den Duverneyschen Drüsen*, &c., was published at Heidelberg in 1840, his investigations having been begun the year previously. In 1850 M. Huguier published in the *Mémoires de l'Académie de Médecine*, a description of these glands, of which he believed himself to have been the re-discoverer in 1841; for like so many of his countrymen, he was unacquainted with what had been done, even in his own field of investigation, beyond the borders of France.

affections, however, which have no such relation, but which are perhaps more frequent in the middle-aged than in the young, and are at least as apt to occur in the single as in the married. Very troublesome *boils*, slow in their advance to suppuration, attended by much discomfort, occurring two or three at a time, or in rapid succession after each other, fresh crops of them frequently appearing at intervals of two or three weeks, sometimes show themselves on the outer surface of the labia. The patient's attention is usually first called to them by a disagreeable itching and smarting, and she then perceives a small pimple or two with a hardened base. The pimple by degrees enlarges, and the hardness around it extends both superficially and into the substance of the labium till it forms a mass as big as a small hazel-nut. It is not attended by much general swelling of the labium, and does not form a distinct head like an ecthymatous pustule, but its surface continues flat even at the time when, suppuration having taken place in it, a small quantity of matter is discharged, after which the hardened spot gradually disappears.

The only local treatment which has seemed of much service in this troublesome ailment consists in the free application of the nitrate of silver while the boils are still in the papular state. If done effectually, this often prevents the further progress of the pimple, and spares the patient much of that suffering which fomentations, poultices, and all other surgical appliances at a later period do but very imperfectly mitigate. There is no general treatment which will prevent their formation any more than that of boils elsewhere; but as their occurrence seems sometimes connected with that irritation of the sexual system which often accompanies the final cessation of the menses, we are in such cases furnished with an indication to guide us worth bearing in remembrance.

One of the most troublesome affections of the external organs is *eczema of the vulva*, which is apt to run a very chronic course, and to prove extremely intractable. For the most part the ailment appears in the flexures between the thighs and the labia, whence it extends to the labia themselves, and afterwards, as it becomes chronic, to the nymphæ, while it is not infrequently associated with eczema about the margin of the anus, and extending along the perineum. In its acute stage it presents no difference from eczema in other parts of the body, but it seldom remains long in that condition, passing rapidly into a chronic state. In this state the labia are apt to lose the hair which naturally besets them, and they waste from removal of the fat which gives them their rotundity, while they and the nymphæ become covered with a thick, hard, white epithelium, and the mucous membrane on their inner surface becomes dry, unlubricated, harsh, and unyielding. It is not usual for this disease to affect the vulva, generally, but instances in which it has done so have come under my notice, the mucous membrane entirely losing its natural appearance, the dry, harsh, and thickened condition of the orifice of the vagina being

associated with a marked narrowing of its calibre. In the worst cases, too, the disease involves the præputium clitoridis to such a degree, that its thickened indurated tissue projects between the labia, while where the opposing surfaces are in contact they continue red, abraded, and just in the condition of parts affected by acute eczema. It is noteworthy, also, that in two instances of severe chronic eczema, a vascular tumor of considerable size grew from within the orifice of the urethra, but I do not know which of the two was of the longer standing.

Those slight attacks of eczema to which some women are liable at the return of a menstrual period, from over-walking, or from similar causes, are often much relieved by the frequent application of a glycerine lotion,[1] while the parts where the eruption has been wont to appear may be afterwards rendered less irritable by the employment of pure glycerine or of zinc ointment. If the inflammation is severe, and the discharge from the surface abundant, the patient must remain in bed, and the continued application of an oxide of zinc lotion,[2] will both restrain the secretion and abate the soreness, while afterwards the ablution of the parts with thin starch, and the keeping them constantly covered with the benzoated zinc ointment (a compound which has the advantage of not readily becoming rancid), seldom fails to bring about very speedy relief.

It is, however, the chronic form of eczema, attended with the desquamation of dry scales of epidermis that is most troublesome to cure, or even to relieve. I have observed it in its severest forms only in hospital patients, and these it was almost impossible to induce to remain long enough for more than some measure of alleviation of their ailment to be obtained. The distressing itching was in most instances relieved for a time by smearing the parts with cod-liver oil. The relief which this afforded, however, was but temporary, and other unctuous applications answered the same end, also, only for a time, and in general less effectually. Indeed nothing short of completely modifying the state of the skin by caustic applications seemed in these cases to hold out any prospect of cure. I have for this purpose employed the solid nitrate of silver, substituting for it, as fresh and more delicate epidermis was produced, a solution of twenty grains of the salt to an ounce of distilled water. Professor Scanzoni[3] uses with the same object a solution of half a drachm of caustic potass in an ounce of distilled water, which is to be lightly applied by means of a camel's hair pencil, and advises, besides, as the disease abates, very copious and frequent ablution with cold water.

Mere external applications, however, though essential for the

[1] (Formula, No. 14.)

℞ Glyc. purificati, ... ℥ij
Aquæ Rosæ, ... ℥vj
M. ft. Lotio.

[2] (Formula, No. 15.)

℞ Zinci Oxydi, ... ℥ij
Mist. Acaciæ, ... ℥i
Aquæ Rosæ, ... ℥v
M. ft. Lotio.

[3] *Op. cit.*, p. 562.

patient's relief, and conducing much to her permanent recovery, seldom suffice in cases of much severity and long standing. In them, as in chronic eczema seated elsewhere, a long-continued course of arsenical preparations appears to furnish the only means of effecting a permanent cure.

Prurigo is often spoken of in connection with that distressing itching of the sexual organs from which women frequently suffer. While pruritus, however, is a common affection, prurigo is one of very considerable rarity; and I have never met with an instance in which the eruption was limited to those parts, though patients suffering from general prurigo are sometimes much distressed by the appearance of the eruption on the genitals, while others are driven by the irritation to scratch themselves to such a degree as to wound the skin, and thus produce little bloody points not unlike those which one sees on the top of the papillæ of prurigo. In spite of this absence of any necessary connection between the painful itching of the sexual organs and the appearance of any eruption on their surface, this will perhaps still be the most convenient place for introducing what I have to say concerning it. Though commonly spoken of as *pruritus of the pudenda* or of the *vulva*, the sensation is by no means limited to one part, but is sometimes referred to the external organs, to the surface of the labia, or to the mons veneris; at other times it is experienced about the nymphæ and the vestibulum, while sometimes it affects the vaginal canal, or even the os uteri. The circumstances in which it is met with vary as much as the situations to which the sensation is referred, and serve to show that in strict propriety the ailment deserves to be classed, as it is by some continental writers, among the nervous affections of the sexual organs. It is far from being an infrequent attendant on the earlier months of pregnancy, and likewise sometimes accompanies organic disease of the womb, especially carcinoma in its earlier stages. It sometimes attends, and still oftener precedes, the menstrual period, especially in women who menstruate scantily, irregularly, or painfully; while again it frequently occurs at the approach of the climacteric period, when menstruation has either finally ceased, or is about to disappear. It accompanies hemorrhoids, and is sometimes one of the discomforts produced by a varicose state of the veins of the labia, it attends the onset and decline of most cases of inflammation of the vagina, and, in short, is seldom altogether absent when any cause whatever produces a state of unnatural congestion of the sexual organs. Now and then it is associated with a sort of herpetic eruption of the inner surface of the labia, the vesicles of which are apt to assume, on bursting, something of the character of small aphthous sores; but my own experience does not lead me to regard this condition as at all of common occurrence.

To describe a sensation is proverbially difficult; but it may be observed, that as this pruritus varies in degree, so it does also in kind. It is sometimes an unpleasant sense of creeping or formi-

cation, at other times a feeling of smarting, while in other cases the positive itching is so distressing as to be almost unbearable. Warmth always aggravates it, and with some persons it suffices to come into a warm room in order to experience an attack of it, while in the case of most patients the nights are in great measure sleepless, because to lie down in bed is at once a signal for the commencement of the itching. Cold for a moment eases it, but this relief is but momentary, and patients are driven to scratch and rub themselves in order to obtain a sort of relief which consists in the substitution of a burning, smarting sensation for the less tolerable itching. This, however, not only does no real good but the very rubbing of the parts both aggravates the patient's condition, and also helps to produce and to keep up a state of morbid sexual excitement, which in some of these cases constitutes by no means the least of her sufferings.

The treatment obviously depends on the conditions with which this distressing symptom is associated. The empirical prescription of lotions, ointments, or other applications, without previous inquiry as to the state of the uterine functions, is worse than idle. One case I remember in which the application of the nitrate of silver to a long-standing abrasion of the os uteri was followed by the almost immediate cure of a previously very distressing pruritus. When consequent on vaginitis the cure of the inflammation and the cessation of the itching take place almost simultaneously, while in general nothing relieves the irritation which accompanies the decline of the vaginitis more than the Goulard water and hydrocyanic acid, in the proportion of two drachms of the latter to eight ounces of the former. Whenever there is much evidence of congestion about the external parts, as shown either by their heat, swelling, or redness, and tenderness, a few leeches to the vulva, or to the margin of the anus, will generally give much relief, and the same local leeching is, as might be expected, of much service when the pruritus is associated with hemorrhoids. The herpetic eruption on which Dr. Dewees, of Philadelphia, laid so much stress as a cause of this ailment, is relieved—as are other cases where, without any disposition to the formation of vesicles or of little aphthous ulcers, much heat and redness of the parts exist—by a lotion of borax and morphia,[1] which indeed has proved more generally serviceable in my hands than any single remedy besides.

In those cases in which there is any local inflammation, or considerable congestion present, unctuous applications do not in general do much good. In others in which this condition does not exist, or has been completely removed, the employment of a liniment of half a drachm of chloroform to an ounce of olive oil,

[1] (Formula No. 16.)

℞. Soda Subboracis, ... ℥iv.
Morphiæ Hydrochlor, ... gr. viij.
Aquæ Rosæ, ... ℥x.
M. ft. Lotio.

both externally and to the vaginal walls, which, I believe, Scanzoni was the first to recommend,[1] is often of great service. The pure cod-liver oil, also, often relieves the external irritation, though I suspect chiefly in those cases in which there is an approach to a state of chronic eczema; while Dr. Rigby, in his recent work, strongly advocates an ointment of equal parts of cod-liver oil and red precipitate ointment as successful in cases which have proved rebellious to other means.

Two other remedies have sometimes done good service in cases of obstinate pruritus; one of these is quinine, which, given in two-grain doses every six hours, has in some, I fear exceptional instances, appeared to me to relieve this as it does other neuralgic affections. The other remedy is belladonna, which both outwardly employed and internally administered, has often proved extremely useful. I generally give the belladonna in the form of pills and combined with camphor, beginning with half a grain of the extract to three grains of camphor, and increasing the belladonna until dimness of vision, or sense of dryness in the throat is produced. At the same time, I direct an ointment of a scruple of the extract of belladonna to half an ounce of spermaceti ointment and half an ounce of glycerine, to be smeared twice a day over the surface, and the relief which these measures obtain has not seldom outlasted their employment and proved to be permanent.

There still remains the employment of the nitrate of silver, either externally or to the vaginal walls, according to the seat of irritation; but I have not myself had recourse to it; for either other remedies have relieved the ailment, or it has ceased with the removal of its cause, as in cases where it occurred during pregnancy; or the patient has no longer heeded it, as in some instances of cancer, where other and worse suffering has made the former annoyance seem less intolerable.

This is perhaps the best place to notice two painful neuralgic affections, the one of the vagina, the other of the rectum, which under the names of *vaginismus* and *coccygodynia*, have of late attracted considerable attention, though both conditions must have long been known practically to all who have had much to do with the treatment of the diseases of women.

The former condition is one of pain and spasm at the entrance of the vagina, so severe as to be a complete bar to sexual intercourse. The pain, however, is often by no means limited to the act of sexual congress, but the patient experiences a sense of discomfort about the vulva, which is raised to positive pain on walking, and sometimes even on assuming the sitting posture, though the degree of suffering varies much in different women, and in the same woman at different times. If any attempt is made to introduce the finger, the pain at once becomes intolerable, and the completion of the examination is prevented not merely by the

[1] *Op. cit.*, p. 545.

patient's inability quietly to submit to it, but by the violent constriction of the sphincter vaginæ which is at once produced.

This state is by no means invariably limited, as in the cases related by Dr. Marion Sims,[1] who first proposed for it the name of *vaginismus*, to newly married persons in whom intercourse has been imperfectly accomplished, and in whom the hymen has been but partially obliterated. I have seen it in its less extreme degrees, left behind after chronic uterine inflammation, and have observed that in some cases long after the introduction of the finger or even of a speculum, could be borne without suffering, the act of coitus, no doubt owing to the peculiar excitement of the nervous system which attends it, was so painful as to be altogether impossible.

I have never seen it as an isolated symptom in patients otherwise altogether healthy, but have always observed it to be associated with other nervous and hysterical symptoms, with dysmenorrhœa, often with pain in defecation and micturition; and like all ailments of this class, its severity is liable to great and apparently causeless variation. Allied to this condition, too, is the intense pain in micturition which I have occasionally observed in unmarried women, and which I have seen baffle all kinds of treatment. Of this a most striking instance came under my notice in a young unmarried lady about 24 years old, in whom it had been gradually coming on almost from the very time of puberty. She was pale, delicate, and thin, but had no other positive ailment than the agony which attended every act of micturition, and which continued for a quarter or half an hour after she had emptied the bladder of urine, which was found invariably to be healthy. She was seen by numbers of doctors; she was sounded for stone on more occasions than one, was treated by all imaginable remedies; her bladder was injected with sedatives, and with carbonic acid gas, tonics, large doses of chalybeates, sea-air and bathing, and visits to the German watering-places, were all had recourse to. Her general health at the end of these experiments was no worse, and her local suffering no better, than at their commencement, and she continued, after years of treatment, a feeble, nervous, hysterical invalid, with little power of body or of mind, and with this one distressing peculiarity only to distinguish her from a hundred others.

I do not think that a state of vaginitis is, as Dr. Churchill[2] considers, usually the first step towards the production of this vaginal pain and spasm; and as I have known the state to supervene in women who had been married two or three years before the commencement of the symptoms (though never in any who had given birth to children) I believe the conditions in which it originates may be very various.

The first essential in all cases towards the patient's improve-

[1] *Obstetrical Transactions*, vol. iii, p. 356.

[2] *Diseases of Women*, 4th ed., Dublin, 1864, p. 123, where will be found a very good account of this condition.

ment is her separation from her husband's bed, and the complete cessation of all attempts at intercourse. Tepid hip-baths, soothing local treatment, and the removal of any inflammation of the vagina or of its orifice, should any such condition exist, come next. The application, for this purpose, of a solution of nitrate of silver by a speculum to the whole tract of vaginal mucous membrane, as recommended by Dr. Churchill, implies, however, that already considerable progress must have been made towards the patient's cure, since in some of the cases which I have seen the finger even could not be introduced without intense suffering.

The removal of any obvious uterine ailment, and the improvement of the patient's general health, are of course to be attended to; but I may say that in no case have I found the much-vaunted bromide of potass either abate the sensitiveness of the sexual organs, or control any of those nervous ailments of an hysterical or epileptiform kind which are commonly supposed to be associated with disorder or excitement of the sexual system.

The tepid douche to the sacrum and nates have in some instances proved of much service in my hands; and I should expect the mud and carbonic acid gas baths of Meinberg and some other places in Germany to be useful, though I have not had any opportunity of trying them in these cases.

The gradual dilatation of the orifice of the vagina by means of bougies is the last step in the treatment of these cases, and one which acts in two ways, both by mechanically widening the canal and also by accustoming the vagina to the presence of the foreign body. I have employed rectum bougies of different sizes, directing the patient to introduce one for an hour daily, exchanging it as she was able for one of a larger and still larger size. Dr. Sims and Dr. Churchill employ glass dilators, which have the advantage of being more cleanly.

I have seen one case in which I can conceive it possible that some surgical proceeding, such as is practised by Dr. Marion Sims, would be of advantage, though in this instance the intense vaginal tenderness was but one of a set of symptoms of most aggravated hysteria. Dr. Sims's operation consists in the excision of the remains of the hymen, the subsequent incision of the vaginal orifice, and the further enlargement of the canal by means of a dilator. This proceeding, indeed, is somewhat formidable, and is attended sometimes by a good deal of hemorrhage; but the condition of vaginal spasm and pain is so grievous as to justify almost any means being adopted for its relief.

Backache is so common an attendant upon a large number of the diseases of women, that both we and our patients often pay but little heed to it, and except in instances where it is unusually severe, make but few inquiries as to its exact situation, or as to the circumstances that aggravate or relieve it. To this it is probably due that, until quite recently, when Dr. Simpson[1] directed

[1] *Medical Times*, July 2, 1859.

attention to pain in the coccyx, or *coccygodynia*, it had not been recognized as a distinct affection.

Usually after childbirth, sometimes after a fall or blow on the lower part of the spine, occasionally after long-continued horse exercise, sometimes as one of a train of symptoms associated with misplacement or some other ailment of the uterus, and now and then, independent of any obvious exciting cause, women complain of pain which they refer to the coccyx and its point of junction with the sacrum. This pain is experienced in sitting, is often very severe during defecation, is usually constant and dull, though aggravated at intervals without any apparent cause. It is relieved by the recumbent posture, but, unlike the pain that accompanies prolapsus, is not aggravated by walking or by the erect posture. It is often worse at the menstrual period, is considerably aggravated by constipation, and is sometimes rendered very severe by sexual intercourse.

There is no special tenderness of the lumbar region, or of the upper part of the sacrum; but the lower part of the sacrum is often sensitive, and the patient directs attention to the coccyx itself as the point whence this sensitiveness proceeds; and pressure on the bone is found to be acutely painful. The pressure of the bone upwards causes much more suffering than its pressure backward by the finger in the vagina or rectum, and the sacro-coccygeal joint is especially painful.

Professor Scanzoni,[1] who has given by far the fullest and best account which we possess of this affection, states that 9 out of 24 patients, of whose cases he has a record, first complained of the pain during childbed; that 6 of these patients were primiparæ, and 5 of them had been delivered by the forceps after a tedious and difficult labor. Two other patients referred to frequent long rides on horseback as the occasion of their suffering. In 11, then, of the 24 cases, the ailment seemed due to causes calculated to produce local injury of the coccyx, and how frequent such injuries must be receives a good illustration in the fact, that 32 out of 180 coccyx bones which the anatomist Hyrtl collected in two years presented evidence of dislocation and subsequent anchylosis.

In many cases, however, the pain in the bone is not due to any traumatic cause, but is sympathetic with some uterine or ovarian disease, and that by no means of a kind to affect the bone by pressure, or in any mechanical manner.

In these instances the removal of the coexistent disease is obviously the first duty of the practitioner, and how important this may be is further shown by a fact which Scanzoni mentions, that three women who had suffered much in their younger years from this coccygodynia, became completely free from it as soon as menstruation had completely ceased.

I have not seen, or at least have not recognized this affection in

[1] *Op. cit.*, pp. 589–602.

its severer and more intractable forms. One of the worst cases of it which I have observed occurred in a young unmarried lady, in connection with hemorrhoids and habitual constipation, and disappeared completely when these conditions were relieved. Perfect rest, mild aperients, the complete emptying the rectum of all fæcal matter; leeches to the coccyx, tepid hip-baths, and warm fomentations: such are the means by which, in the majority of instances, much relief is afforded. If these means fail, or if the pain is obviously neuralgic, or if, though mitigated, it is not removed by this treatment, Scanzoni resorts to the subcutaneous injection of morphia over the painful spot. He has found this a far more efficient remedy than any kind of liniment, ointment, or suppository, and, unlike Dr. Simpson, states that its results have but rarely disappointed him.

The condition, though tedious, and apt in its severer forms to relapse, appears to be tolerably amenable to treatment. Of Scanzoni's 24 cases, 10 recovered perfectly, 9 were much relieved, the result of 3 which he saw but once is unknown to him, and in 2 the evil continued unrelieved by any treatment. Even in these, however, the suffering was not so severe as, in his judgment, to warrant the subcutaneous division of the muscles, ligaments, and fasciæ connected with the lowest part of the coccyx, which Dr. Simpson has recommended, and practised with perfect success. The object of the operation is to set the coccyx perfectly free and perfectly at rest, and, if other means fail, should undoubtedly be had recourse to, though not as a first measure and independent of previous treatment.

A few words may be added here, better perhaps than anywhere else, with reference to the alleged frequency of *masturbation* in the female sex, and the *removal of the clitoris* for its cure. There can be no doubt but that self-abuse is not limited to the male sex, and that women sometimes become addicted to it; and it must have happened to all practitioners of medicine to receive occasional painful confessions from women who were unable to overcome a vice, indulgence in which polluted their thought, or who traced the absence of sexual feeling in married life to habits contracted in their girlhood. Such cases, however, are by no means frequent; and it seems doubtful whether the practice of masturbation produces such injurious physical effects in the female as in the male subject, though it is impossible to over-estimate its baneful influence on the moral feelings and the sense of self-respect.

If the habit could be overcome, if the mind could be restored to its purity by any mutilation of the person, one would feel that no penalty would be too great to pay for such a boon. The seat of sexual feeling is, however, by no means confined to the clitoris; habitual masturbation brings with it no change in the organ, and it is not by irritating it that some women who have sunk to the lowest depths earn for themselves a nauseous living by ministering to the passions of the most abandoned of their own sex; nor

by removing the clitoris would the habit be broken through, or the means of indulging it removed.[1]

There are some subjects which by common consent are little mentioned among honorable practitioners of medicine, and the professed curers of self-abuse and its consequences in men, whether they advertise themselves by notices at the corners of the streets, or by noisy self-assertion, occupy a position morally like that which his red cloak, his bell, and his cry, "Unclean, unclean," gave to the leper of old. They are seen and they are shunned. Like their prototypes, too, wanton outrage seems to have for them a peculiar attraction. It will, I imagine, scarcely be contended that proceedings which we should reprobate if practised on the one sex change their character when perpetrated on the other.

I know a lady, aged fifty-three, whose youngest child was more than twenty years old, who had suffered from a painful fissure of the anus, for which she underwent the usual operation of dividing the mucous membrane of the ulcer. The surgeon who did this, without saying one word to the lady or to her husband, or hinting in any way what he was about to do, cut off her clitoris. The stump of the amputated clitoris became the seat of pain, such as sometimes follows amputation of a limb, and for months the patient was in a state of almost ceaseless anguish, which, after the lapse of between two and three years, abated, but has not yet altogether ceased. In answer to her inquiries why some other operation had been performed in addition to that which she knew was requisite, after some evasion, she at length learned what had been done, and further, had the humiliation of discovering that the justification of the outrage was, that she was assumed by the surgeon to be addicted to a vice with the very name and nature of which she was alike unacquainted.

Our profession ought to be a noble one. The ring and the sword in some universities of the continent still symbolize the knightly vows taken by the candidate for the doctor's degree; and it is in the spirit of chivalry alone that medicine can be safely practised. I have written this history in all sadness as a warning to my younger brethren, how if they are not watchful, it is possible, "as noblest things find basest using," that they may pervert their talents, and degrade their manhood, till they sink so low as to find opportunities for mischief in the practice of their art, instead of occasions for the exercise of that power of healing which is most God-like.

M. Huguier has described, with extreme minuteness, in the

[1] With reference to the absence of any change in the sexual organs in connection with habitual masturbation, the statements of Parent Duchatelet are decisive: "Tous les jours on reçoit dans la prison des prostituées quelques unes de ces filles d'une lasciveté effrénée, ou de ces femmes, plus lascives encore, adonnées au vice honteux dont j'ai parlé; on examine ces femmes comme les autres, et jamais elles n'ont présentées dans leur organisation, la moindre chose qui les distinguât du reste des prostituées, ou du commun des femmes." *La Prostitution dans la Ville de Paris*, Paris, 1857, 3d ed., vol. i, p. 111.

Memoirs of the Academy of Medicine of Paris,[1] the diseases of the sebaceous and piliferous follicles of the vulva. He speaks of a condition of acne of the vulva, in which the contents of some of the sebaceous follicles accumulate without any obvious cause. The number of follicles so affected is not in general considerable, though like acne of the face, which in all respects it closely resembles, the affection is extremely chronic, and different follicles are apt to become diseased in succession. The accumulation of their contents, too, sometimes occasions inflammation of the follicles, and then that disease is produced which M. Huguier terms *vulvar folliculitis*, and which has occasionally come under my observation, though far less often than it and other ailments of the external organs present themselves to one who has so peculiar a field as is furnished by the *Hôpital de Lourcine*. This affection, which he states to be most frequent during pregnancy, may occur also at other times, induced by local irritation of any kind, and especially by habitual want of cleanliness. It is characterized by the appearance in the fold of the thigh, on the outer surface and free edge of the labia, on the nymphæ, and on the base of the præputium clitoridis, of little red rounded papillæ, which at first scarcely exceed the size of a pin's head; some of them are distinct, while others are collected together into irregular patches. By degrees these follicles, at first merely congested and enlarged by the accumulation of their contents, become more inflamed, a little drop of pus may be seen at their apex; they then usually burst and shrivel, though sometimes they wither without having previously discharged their contents.

The ailment, if left untreated, is chronic in its course, and the follicles take as long as twenty or thirty days, or even longer, to pass through the three stages of eruption, suppuration, and desiccation, while successive crops will run the same course, and protract the disease for weeks or months. It is, however, amenable to very simple treatment, such as rest, cleanliness, baths, the employment of mild astringents, such as the lead lotion, or of weak solutions of nitrate of silver.

From these eruptive diseases of the external organs we pass now to the study of some other affections, not so superficial in their character, though still seated exclusively in the integument, and in the subjacent cellular tissue. The correct classification of these diseases is very difficult, for while some are undoubtedly of syphilitic character, others belong to the same class with lupus, and are quite independent of venereal taint, and of these some pass by gradations difficult to seize into the same class with undoubted epithelial cancer.

I do not pretend to say anything concerning the more usual varieties of syphilitic disease of the external organs. In truth, my familiarity with them is but small. I have, however, occasionally met with what would seem to have been forms of *tertiary*

[1] Vol. xv, p. 527.

syphilis, but which had been of such long standing, and had proved so rebellious to treatment, that questions had been raised as to whether they were not really of a malignant character.

Such a case was that of a patient aged forty-five, who was admitted under my care with ulceration of the external parts, of a year's duration, which appeared to have caused no other considerable inconvenience than occasional difficulty in retaining her urine. On the inner surface of her left labium, and extending on to the nympha, was a sore of a semicircular form, slightly irregular in its outline, its edges somewhat indolent, its surface covered by tolerably healthy granulations. The concavity of the sore was directed upwards, its convex edge downwards, beginning by a narrow edge about a quarter of an inch below the clitoris, and extending down to within about three-quarters of an inch of the lower part of the left wall of the vagina. The cicatrix of a similar sore occupied the inner surface of the right nympha, and the right side of the entrance of the vagina, and a small portion of its lower edge was still unhealed. The orifice of the urethra was red and ulcerated, but it was not unnaturally open. The uterus was healthy, and there was no enlargement of the glands in the groins.

In this patient there were no other venereal symptoms, though she confessed to having had sores accompanied by buboes, and by sore throat, fourteen years previously. Recovery, and complete cicatrization of the sores took place in three months, under the continued employment of the iodide of potass, with the black wash externally, and the occasional application of nitrate of silver. Other doubtful cases which have come under my notice have neither presented any evidence of syphilis, nor has it been possible to obtain from the patient's statements any proof of its previous existence.

The danger in such cases is scarcely of taking them for scirrhus, but rather of confounding them with some forms of epithelial carcinoma. The stony hardness of a scirrhous labium or nympha has in it something very characteristic, and the sore which forms on the mucous surface at that early stage when alone mistake is possible, is a mere superficial abrasion of ephithelium, not a distinct ulcer with raised edges. Genuine epithelial carcinoma, beginning on the external parts, is less apt to extend up the vaginal canal, and does not show the same exclusive preference for the mucous surface of the labium; while, when ulcerated, its hardness usually extends deeper, and its surface presents a more coarsely granular appearance. From rodent ulcer, or lupus, the diagnosis is more difficult. In that, however, the base of the ulcer is usually more indurated, and an indurated state of the integument extends beyond the limits of the ulcer, producing in very many instances a marked contraction of the orifice of the vulva; while, further, this disease is seldom limited to the inner surface of the labia, but in general affects their posterior part, the posterior vaginal wall for a short distance, and also, in many instances, the vestibulum; a greater extent of surface than syphilitic

disease commonly involves, while lastly, in a large number of cases, there is associated with the ulceration a very remarkable disposition to hypertrophy of the labia and nymphæ.

The last peculiarity led M. Huguier,[1] who was the first person to give a minute description of this disease, to propose for one of its varieties the name of *lupus hypertrophicus*, designating its other forms *lupus serpiginosus*, and *lupus perforans*. In most instances, however, the characters are so blended as to render it doubtful whether there is any special advantage in these subdivisions. The affection may be briefly described as a form of ulceration, attended by little pain, which creeps all round the vulva, healing at one part while it advances at another, indolent in its progress towards healing, but also extending slowly; having irregular, usually rather overhanging edges, the tissue of which, and of the parts immediately around, is hard and cartilaginous. It is, moreover, attended by a disposition to hypertrophy of the parts not destroyed by ulceration, as for instance, of the labia and nymphæ, and by the formation of condylomatous growths about the entrance of the vagina, and the orifice of the anus, which growths themselves also become ulcerated. It is a further characteristic of this affection, that the ulcerations in healing tend to produce great contraction of the orifice of the vulva, by the formation of a firm cicatrix-like tissue, which also usually occupies a greater extent of surface than the ulceration had done which it succeeds.

M. Huguier's essay contains an account of nine cases of this disease, and five have come under my own observation, making a total of fourteen cases, all of which occurred in women who were either married, or were known to have indulged in sexual intercourse, with the exception of one of M. Huguier's patients, concerning whom no mention is made on this point. Only two of M. Huguier's patients, and only one of mine, had had children; a peculiarity which seems scarcely accounted for by the impediment which, when the disease has reached an advanced stage, it may present to sexual intercourse:

The influence of age in the production of this disease is shown in the following table:

Patients came under notice at age of	Disease said to have begun.		Patients came under notice at age of	Disease said to have begun.	
Years.	Years.	Months.	Years.	Years.	Months.
20	18	6	32	30	4
21	20	6	32	29	6
22	20	6	32	31	4
24	22	0	33	25	0
26	21	0	38	28	0
26	25	0	47	46	0
30	29	0	52	45	0

[1] See his *Mémoir sur l'Esthiomène de la Région vulvo-anale*, in *Mém. de l'Acad. de Médecine*, 1849, vol. xiv, p. 507. The engravings of the disease are remarkably characteristic of its peculiar features.

Or, in other words, the disease began:

Under	20 years,	in	1 case.
Between	20 and 25,	"	4 "
"	25 " 30,	"	5 "
"	30 " 35,	"	2 "
At	45		1 "
"	56		1 "
			14 "

The duration of the disease, including the time during which the patients remained under observation, is shown in the following table:

Number.	Duration.	Results.			
		Cured.	Relieved.	Not Relieved.	Died.
1	under 1 year,	1			
3	" 18 months,	2		1	
3	" 2 years,		2		1[1]
1	" 3 "		1		
1	" 4 "	1			
4	between 8 and 9,		3		1
1	" 10 " 11,				1
14		4	6	1	3

It is quite evident that between this affection, which runs a course so uniformly slow, which admits of cure after the lapse of more than three years, and of great relief even after eight years, and any kind of malignant disease, there must be an essential difference. Moreover, when it runs a fatal course, it does not destroy life as cancer does, either by attacking some distant organ, or by involving, as it extends, all the tissues in one common morbid change, but death takes place from peritonitis consequent on the formation of fistulous communications between the vagina and rectum, and the contraction of the bowel whose walls have become implicated in the disease. The microscope, too, supports the distinctions which observation of the general features of the disease suggests.[2]

With reference to the distinction between these ulcerations and such as are really of syphilitic origin, it deserves notice that in one

[1] This patient died under chloroform, and from the advance of the disease.

[2] The following memorandum was made by my friend Mr. Paget of an examination made by him, after the death, under chloroform, of a young woman in whom a sore of this kind had existed for eighteen months: "In the material scraped from the surface of the upper ulcer there were so many small epitheliform scales, of various shapes, with well-marked nuclei and nucleoli, and various granular contents, that epithelial cancer might have been suspected. But all these cells and their nuclei were small, there were no laminated epithelial corpuscles, and (which was most significant) when I examined the substance of its base, taking it from beneath, and from immediately beneath its surface, I found nothing but the natural tissues of the mucous membrane with infiltrated, inflammatory, or reparative materials. . . . . On the whole, the result of the microscopic examination was to show certainly that the characters of these ulcers are like those of common ulcers, having no new-formed structures of peculiar or specific form. If the materials taken from the surface of the ulcer had been examined during life, they would probably have led to a diagnosis of epithelial cancer. They were, however, I imagine, diseased epithelial cells from adjacent parts of the mucous membrane, or perhaps from the healing part of the surface of the ulcer."

case only of M. Huguier's did this disease appear to be grafted on syphilitic mischief; while in the other thirteen cases, though one of the patients was a prostitute, and some of the others had undoubtedly exposed themselves to the risks of contagion, not one presented the slightest symptom of any venereal affection.

The general character and progress of the disease will, perhaps, be best illustrated by the history of the case of a woman aged thirty, who was admitted under my care into St. Bartholomew's Hospital in June, 1850. She had then been married four years, had given birth to one child at the full period, and had likewise miscarried from fright at the fifth month, a year before she came under my notice. She always had good health, though her menstruation was irregular, until after her labor, which was perfectly natural. She got about, however, too soon after her confinement, and to this indiscretion she attributed a leucorrhœal discharge, frequently streaked with blood, from which she had suffered ever since. This discharge had become more profuse since her miscarriage, but, with the exception of slight pain in the back, she had not experienced any other inconvenience until two months previously. Since that time, however, she had had a good deal of pain, both in micturition, and in sexual intercourse, and the discharge had become yellow, thick, offensive, and escaped in gushes. The patient said that she had lost flesh, but she did not appear either emaciated or seriously out of health.

The labia and nymphæ were much swollen, but not diseased; a very abundant, dirty puriform discharge escaped on separating them. A red, granular, bleeding ulceration, with a hard surface, slightly painful to the touch, and bleeding readily, surrounded the urethra, while the finger introduced into the vagina discovered a continuation of a similar condition extending upwards for about an inch in breadth, by an inch and a half in length. That part of the disease, however, which extended within the vagina was not entirely in a state of ulceration, but a thickening and infiltration of the tissues reached for some distance on either side, and the actual ulceration was of very limited extent. On the posterior vaginal wall, a little distance from the orifice of the canal was a small, hard tubercle, the size of the top of the little finger, covered by unchanged mucous membrane.

Six months later, the external parts were more tumid, and both they and the inside of the thighs were excoriated by the profuse discharge. The tubercle on the posterior vaginal wall remained unaltered, but a strip of ulceration was creeping up on either side. Five months later, or in the middle of May, 1851, the patient became again pregnant, and on February 19, 1852, she was delivered of a live female child, after a labor of little more than five hours' duration. The tubercle at the posterior wall of the vagina had somewhat increased during her pregnancy, and the perineum felt hard and brawny. It gave way during the passage of the head, but, nevertheless, the patient passed through the puerperal state

without any bad symptom, and on the 18th of March was again received into the hospital.

The labia were then greatly swollen, but neither from anasarca, nor from inflammation. Their surface was pale and much wrinkled, like the hand when long soaked in water, while the whole of the integument felt thickened like that of a part affected with elephantiasis. The nymphæ were also greatly enlarged, and projected between the labia, but otherwise their tissue did not appear to be much altered, except on their inner ulcerated surface. On separating the nymphæ an irregular ulceration was seen surrounding the urethra, which it seemed to have partially detached from its superior connections, and passing up under the symphysis pubis. The clitoris appeared to have been destroyed by the ulceration, which extended up quite to the superior commissure of the labia, whence it passed on to the inner surface of the nymphæ, while pale rose-colored warty granulations, exactly like those of the ulceration, surrounded the edges of the urethra, and formed a prominence about it almost of the size of a hazel-nut. The edges of the lacerated perineum were cicatrized to the extent of about a third of an inch, but the rest of the ununited margins of the labia, and the walls of the vulva and vagina as far as could be seen, were of harder texture than natural, semicartilaginous, of a pale rose-red color, destitute of epithelium, smooth, and not granular-looking, but just like a section of a scirrhous mass, and pouring forth a copious sero-purulent secretion. A granulating ulceration extended for between half an inch and an inch along both walls of the vagina, that on its posterior wall ceasing at the base of the tubercle already mentioned as situated there.

The removal of the nymphæ was followed by great general amendment, and by partial cicatrization of the sore that surrounded the urethra. The granular outgrowth immediately at its orifice had by the end of May lost nearly the whole of its preternatural redness, and was covered, as were the condylomatous growths, with pale mucous membrane. The inner surface of each labium, which looked before like sections of carcinomatous growths, was covered by healthy mucous membrane. On the 8th of July, 1852, just two years from the patient's first coming under my notice, there no longer existed any positive ulceration, though in other respects matters continued much as before, except that a vividly red, though but slightly sensitive excrescence, as big as the tip of the little finger, now sprouted from the wall of the urethra and quite filled up its canal, while the papillæ which beset its margin continued as before.

From this time I never saw the patient again; but this unfinished history displays the peculiarities of the disease, its slow progress, and its partial amendment. I wish it illustrated more favorably the results of treatment, though indeed the patient left the hospital better in many respects than when she entered it, and this in spite of its never having been possible to induce her to remain there for more than three months at a time. To a certain

extent good diet, rest, cleanliness, the use of the hip-bath, and simple unirritating lotions improve the state of the ulceration; and I have sometimes flattered myself that cicatrization would speedily take place. In a few weeks, however, the limit of this improvement has usually been attained, and the patient has passed from under my care benefited indeed, but by no means cured. In the only instance in which complete recovery took place, the patient was kept steadily on a course of mild mercurial medicine with small doses of the iodide of potassium for nearly two months. In this instance, however, the ulceration did not date from longer than seven months previously, and the amount of thickening and hypertrophy of the nymphæ was inconsiderable.

In other cases I have employed preparations of mercury, iodine, and arsenic, without having been able to attribute to any one of them a special influence over the disease, and the experience of M. Huguier does not in these respect differ from my own. One point to which he refers is of great moment, namely, the expediency of removing the nymphæ, or any of the adjacent parts which may readily admit of extirpation, provided the ulcerations upon them appear indisposed to heal. I should indeed be inclined to advocate in every case the removal both of the ulcerated nymphæ, and also of all those papillary or condylomatous excrescences which beset the orifice of the vulva as a preliminary step to any attempt at the cure of the disease. The opposing surfaces keep up mutual irritation, while the hardened tissues prevent any application being effectually made to the ulceration about the vestibule. The outgrowths, too, around the vulva are apt to become the seat of ulceration, and also to increase by their presence the probabilities of the occurrence of a relapse. I am unable to say to what extent the use of the stronger caustics, such as the acid nitrate of mercury, may be of service in those instances in which the ulcerations are most indolent, but I am inclined, though from very slight experience on the subject, to think that where its application is practicable, the influence of the actual cautery is more beneficial in modifying the state of the parts than that of any kind of chemical escharotic.

Malignant disease of the external parts usually assumes, as might be expected, the form of *epithelial cancer*, though a case of scirrhus of the labium and one of fungoid disease of the vulva have both come under my notice. Epithelial cancer generally commences in the form of a little hard tubercle on the outer surface, but near to the edge of the labium, and without being the seat of positive pain, is yet, in most instances, a source of annoyance by the smarting and itching which it occasions. It may continue thus for an uncertain period—for several months, perhaps for longer, till at length its surface becomes abraded, a serous discharge exudes from it, and then completely losing its epithelium, it presents the appearance of a circular sore seated on a hard, somewhat raised base. It now spreads by ulceration, the ulcer always retaining somewhat of a circular form, while with its extension the indurated

base also reaches further and further beyond the limits of the ulceration. It constantly displays an indolent character, its edges being hard, and its surface depressed a little below the level of the surrounding integument. The granulations so distinctive of the ulceration of epithelial cancer are frequently kept in check by the constant attrition of the opposing surfaces of the labia, for it is worth notice that, though the disease usually commences at the edge of the labium, the ulceration generally advances inwards towards its mucous surface, and comparatively seldom spreads outwards on the integument. From the inner surface of the labium, it next involves the nympha, the præputium clitoridis, and the clitoris itself, which parts, before they are attacked by actual ulceration, generally become red, abraded, and finely granular on their surface.

For some time even after the ulceration has taken place, the inguinal glands continue healthy and are not enlarged, and the general substance of the labium is not affected. Presently, however, the ulceration extends in depth; as it does so, it grows more irregular, and the granulations that beset its surface become larger, while the whole labium now looks red and swollen, feels hard, and slightly irregular, and is very tender to the touch.

There is little difficulty in filling up the picture, with the few dark touches needed to complete it. The disease sometimes destroys the labium, and then extends upon the integument of the thigh, as a deep, excavated, ragged ulcer, which yet does not in general discharge much, nor invariably occasion severe pain. At other times a gland swells, increases rapidly in size, the skin over it then dies, and a large cancerous ulcer is left behind, while as the disease advances, the patient loses health and flesh, and fades away, not destroyed by hemorrhage, as in uterine cancer, nor by any means constantly worn out by pain, for that is usually tolerably amenable to opiate remedies.

I should perhaps mention that I have seen one instance of the commencement of epithelial carcinoma, not on the cutaneous surface of the labium, but on the outer surface of the left nympha in a young married woman thirty-one years old. The disease had the form of a deep hole, with ragged edges, apparently about large enough to contain a nut, but the edges were so close together that it was impossible to see to the bottom of it, while any attempt to separate them in order to obtain a good view gave so much pain that it was forced to be abandoned. Its edges and surface were made up of small red, semi-transparent granulations of the size of a pin's head, and remarkably characteristic of epithelial cancer.

The commencement of the disease was referred to a fall against the edge of a chair five months before, when the patient hurt the external parts very much, and suffered from profuse hemorrhage in consequence. She would not submit to an operation then, but returned to the hospital a year afterwards, when all interference was out of the question, for the ulceration had destroyed the labium, and extended to the thigh. The poor woman had fol-

lowed her occupation as a weaveress almost to the time of her admission, had suffered much, had fared ill, and had taken to opium-eating for relief. She was transferred to the workhouse, but I do not know when she died.[1]

Our data are hardly sufficient to determine satisfactorily the *duration* of this disease. I believe, however, that the tubercle which precedes the development of the carcinomatous sore may exist for a long period, even for several years, though I do not imagine this usually to be the case; but that when the process of ulceration has commenced it runs its course to a fatal issue within two years.

In the *treatment* of epithelial carcinoma the one great question to decide concerns the possibility of its removal. If let alone, at any rate after ulceration has commenced, its progress is invariably to a fatal issue; and any of the local applications which may be tried in ulcerations of a doubtful character on other parts can never be efficiently employed in diseases of the external sexual organs of women. I have not experience enough to say in what proportion of cases the disease recurs, or how long a period of immunity may be hoped for after its extirpation. Of this, however, I am sure, that present comfort is promoted, that life is decidedly prolonged, and that a chance, if but a slender chance, at any rate the only one, is thereby afforded the patient of a permanent cure. The surgery of the operation lies beyond my province; the only suggestion that I would venture to give concerning it is, that care should be taken to remove enough, and that the operator should not, through fear of making too large a wound, carry his incisions too near to diseased tissues.

[1] I have also seen one instance, in a woman aged thirty-four, of the simultaneous occurrence of malignant ulceration of the interior of the labia and nymphæ, and of epithelial carcinoma of the skin over the pubes. Death took place in twenty months. There was infiltration of cancerous matter into the body of the uterus, but its cervix was healthy, and no secondary deposits existed in any other organ.

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