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CLINICAL LECTURES

ON

DISEASES PECULIAR TO WOMEN.

BY

LOMBE ATTHILL, M.D., Univ., Dubl.,

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Seventh Edition, Revised and Enlarged.

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PREFACE TO THE SEVENTH EDITION.

THE issue of the present Edition coincides with the expiration of my term of office as Master of the Rotunda Hospitals. The coincidence is accidental, but it is so far fortunate, as it enables me to embody in this volume the results of the experience I have gained in the wards of that Institution.

Although my views as to the details of treatment have been modified in some respects since the earlier Editions of these Lectures appeared, my opinions as to general principles have undergone no change, nor have I found it necessary to retract any statement previously made, and I have good reason for believing that the treatment advocated by me in the severer forms of uterine disease is now adopted by the majority of medical practitioners both in this country and in America.

The present edition will be found to contain a good deal of new matter; the chapter on Subinvolution has been re-written, as has also to a great extent that on Inversion of the Uterus, a subject to which I have devoted much attention, while in many places additions of minor importance have been made. In fact, I have endeavoured, while not unduly enlarging the volume, to

embody in it everything which is essential as a guide to both practitioner and student.

I desire gratefully to acknowledge the favourable reception accorded to my efforts to impart to those whose opportunities had been less than my own, a practical knowledge of the important diseases of which these Lectures treat. The work has been republished in America, as well as translated into French. I therefore tender to my brethren in those countries, as well as to the profession at home, my sincere thanks for the kindness I have received at their hands.

LOMBE ATTHILL.

94 Merrion Square, West, Dublin,
3rd December, 1882.

CONTENTS.

LECTURE I.

Introductory Remarks—Mode of examining patients—Use of Speculum—Fergusson's—Bi-valve—Duck-bill—Uterine Sound—Method of Introduction—Information to be Obtained from its Use—Bi-manual Method of Examination 1

LECTURE II.

Leucorrhœa—Definition of — Characteristics of — Sources of—Vaginal—Cervical—Uterine — Vaginitis — Causes of—Treatment—Clitoridectomy—Vaginismus 18

LECTURE III.

Menstruation—Amenorrhœa—Causes of—Local and Constitutional—Treatment of Various Forms—Use of Galvanic Stem Pessary—Medical Agents 34

LECTURE IV.

Dysmenorrhœa—Definition—Spasmodic—Ovarian — Inflammatory—Mechanical—Cause of Pain in—Treatment—Division of Cervix 50

LECTURE V.

Menorrhagia—Definition—Cause of—Constitutional and Local—Subinvolution—Treatment of—Uterine Porte-caustique . . 72

LECTURE VI.

Menorrhagia (*Continued*)—Granular Erosion of Cervix Uteri—Treatment of—Granular Condition of Cavity—Treatment of—Mode of Dilating Cervix—Sponge Tents—Sea-tangle—Barnes' Dilators—Use of Nitric Acid—Curette—Placenta retained after Abortion 91

LECTURE VII.

Polypus—Varieties of—Mucous—Fibrous—Symptoms of—Operation for Removal of—Advantages of Steel Wire—Modification of Gooch's Cannulæ—Fibrinous and Placental Polypi . . 113

LECTURE VIII.

Fibrous Tumours—Definition of—Varieties of—Sub-peritoneal—Sub-mucous—Intra-mural—Enucleation — Intra-uterine — Injections—Influence of Pregnancy—Spontaneous Cures . . 133

LECTURE IX.

Inflamation of the Cervix Uteri—So-called Ulceration of—Symptoms of—Treatment of by Local Depletion, Nitric Acid, and Potassa Fusa 172

LECTURE X.

Endo-Metritis—Definition of—Two Classes of—Treatment of—Division of Cervix in Chronic Metritis 194

LECTURE XI.

Displacements of the Uterus—Retroflexion—Causes, Symptoms, and Treatment of—Hodge's Pessary—Retroversion, Anteflexion—Prolapsus Uteri 228

LECTURE XII.

Enlargements of the Uterus—Frequency of—Causes of, considered with reference to Diagnosis 285

LECTURE XIII.

Cancer of the Uterus—Pathology of—Varieties met with in the Uterus — Medullary and Epithelial Cancer — Symptoms — Hæmorrhage — Pain — Fœtid Discharge — Cauliflower Excrescence—Amputation of Cervix—General Treatment . . 298

LECTURE XIV.

Ovarian Cystic Disease—Pathology — Unilocular, Multilocular, and Dermoid Varieties—Symptoms—Diagnosis . . . 324

LECTURE XV.

Ovarian Disease *(Continued* —Effect of on Duration of Life—Statistics of Ovariotomy—Tapping of Cyst—Injection of Cyst—Congestion and Inflammation of Ovary 344

LECTURE XVI.

Uterine Therapeutics—External Applications—Hot and Cold Hip-baths—Use of Chapman's Spinal Hot Water and Ice Bags—Wet Bandages—Blisters—Iodine 357

LECTURE XVII.

Uterine Therapeutics *(Continued)*—Applications to the Vagina and Uterus—Vaginal Injections—Intra-uterine Applications—Medicinal Treatment—Plugging of Vagina 367

LIST OF ILLUSTRATIONS.

1. Bi-valve Speculum 7
2. Four-bladed Speculum 7
3. Duck-bill Speculum. 8
4. Mode of Introducing Sound 13
5. Galvanic Stem Pessary 44
6. Savage's Metrotome 65
7. Kuchenmeister's Scissors 66
8. Greenhalgh's Metrotome. 67
9. ,, ,, ... 67
10. Greenhalgh's Expanding Intra-uterine Stem 69
11. Uterine Porte-caustique 89
12. Polypus—Sea-tangle *in situ*, to effect Dilatation . . . 96
13. Vulcanite Tube 104
14. Marion Sims' Curette 108
15. Vulsellum 121
16. Wire Ecraseur 122
17. Ecraseur applied for removal of Polypus. 123
18. Dr. Atthill's Ecraseur 125
19. Fibrous tumour with Double Attachment 128
20. Uterine Out-growth or Polypus 134
21. Uterine Fibrous tumour. 134
22. Sub-peritoneal Fibro-cystic Tumour 135
23. Intra-mural Fibroid of Cervix. 142
24. Intra-mural Fibrous Tumour 144
25. Hall's Knife for Puncturing Cervix 180
26. Retroversion of Uterus 229
27. Retroflexion of Uterus 230
28. Hodge's Pessary 244
29. Hodges Pessary *in situ* 244
30. Greenhalgh's Spring Pessaries. 245
31. Galbanum's Pessary 246
32. Greenhalgh's Flexible Stem 247
33. Godson's Modification of Zwank's Pessary 264
34. White's Uterine Repositor 280
35. Apparatus for Vaginal Injections 369
36. Playfair's Probes 375
37. Author's Cannula for Intra-uterine Medication . . . 379

CLINICAL LECTURES

ON

DISEASES PECULIAR TO WOMEN.

LECTURE I.

Introductory Remarks—Mode of Examining Patients—Use of Speculum — Fergusson's — Bi-valve — Duck-bill — Uterine Sound—Method of Introduction—Information to be Obtained from its Use—Bi-manual Method of Examination.

GENTLEMEN,—It is of course essential to the right treatment of any disease, that the condition of the affected organ should be carefully and scientifically investigated. To assert such a palpable truth seems almost absurd; yet when coming together as we now do, to investigate the symptoms, and discuss the treatment, of the diseases of the female genital organs, it must be borne in mind, and I feel bound to impress upon you the importance of the simple proposition I have laid down. Not a year passes that I do not meet with instances in which practitioners lose credit and character by neglecting, or being unable skilfully, to make the examination necessary in the class

of cases we are about to consider. What physician would dream of prescribing for a case of hæmoptysis without previously ascertaining the condition of the thoracic viscera? Yet many do not hesitate to undertake the treatment of a case in which hæmorrhage from the uterus is present, without having the least idea whether the hæmorrhage depends on the existence of granular ulceration of the os and cervix uteri, on the presence of a polypus, of cancer, of that condition known as sub-involution of the uterus, or on some other less easily demonstrable causes. I therefore unhesitatingly lay it down as a rule, that in all cases presenting symptoms of uterine disease, a careful examination of the pelvic viscera should be made. But let me at the same time earnestly impress on you the duty of conducting such an examination in a mode as little irksome as possible to the patient, and with all possible delicacy.

Now, in nearly every case of uterine or vaginal disease, we require the aid of both touch and sight to enable us to arrive at a correct conclusion as to the condition of the affected organs. To use the speculum without a previous examination by the finger and hand, is not only wrong, but it also fails to convey to us anything like an accurate knowledge of the case. Thus a patient suffers from leucorrhœa with pelvic pain, and pains in the thigh. You make an examination with the speculum, and finding the os uteri healthy, may hastily come to the conclusion that no abnormal condition of the genital organs exists, and perhaps assure the patient that the womb is healthy. But nevertheless she is dissatisfied, for her sufferings continue, and by and by she consults another practitioner, who detects the existence of a retroflected or

anteflected uterus—a condition which an ocular inspection of the os uteri failed to recognize. I could easily multiply examples, but let this one suffice to impress you with the necessity of making a manual examination before using the speculum.

In speaking of a manual examination, I mean more than a digital examination of the vagina. I include also under that term the investigation of the pelvic viscera through the abdominal walls, and, if the symptoms seem to demand it, through the rectum also. I shall make a few remarks on the mode of conducting these investigations.

First, then, as to the ordinary digital examination of the vagina and uterus. The patient is to be placed on her left side, with the head low and bent well forward, taking care, too, that she does not rest upon her elbow; the knees should be well drawn up, and the hips pushed out to the edge of the couch. These preliminaries effected, the index finger, previously well greased,* should be introduced slowly upwards, in the axis of the outlet of the pelvis, the tip of the finger being kept in contact with the posterior wall of the vagina. By adopting this course the finger reaches the posterior *cul de sac* of the vagina, and by carrying it from this point round the cervix uteri, we are enabled at once to ascertain the condition of the lower segment of the uterus. Thus we learn whether it be movable or fixed, whether it be of the normal size and shape, or, on the other hand, elongated or hypertro-

* For this purpose a compound of Purified Soft Soap, three parts; Glycerine, one part, and Carbolic Acid, five grains to the ounce, answers admirably. It washes off easily, is a deodorizer and disinfectant, and does not damage clothes or any other article on which it falls as oil and grease do; Vaseline, with the same proportion of carbolic acid, is also nice for the purpose.

phied. Then, by drawing the finger down along its surface you reach the os uteri and discover its state; whether it be patulous, with everted lips, or small and contracted. While thus engaged in investigating the condition of the cervix uteri, you should not fail to attend to that of the vagina, and satisfy yourself whether it be of the natural temperature and moisture, or unduly hot and dry. But there is more yet to be ascertained before you have gained all the information possible from a digital examination—the size, shape and position of the body of the uterus itself is to be made out, for this portion of the organ may be enlarged, retroflected or anteflected, or possibly under certain circumstances, completely retroverted.

As a rule, you should not be able to feel the body of the unimpregnated uterus through the posterior *cul de sac* of the vagina. If therefore on sweeping the finger round the cervix posteriorly, you feel a firm globular mass above, you may probably pronounce that the organ is in an abnormal condition.

Our means of obtaining information by our hands alone are not yet exhausted. We have ascertained what the condition of the cervix uteri is, and perhaps are satisfied that the uterus has retained its natural position, or is displaced, but we know nothing of the condition of the external or peritoneal surface of that organ. A fibrous tumour, for instance, of any conceivable size, may be developed in the uterine wall, or the fundus may be enlarged from the effects of disease, or be anteflected, and yet the examination I have hitherto described may fail to detect it. Never omit, then, in all doubtful cases, to pass the hand over the abdomen, and by the aid

of both hands, to satisfy yourself as to the shape and size of the uterus. This method, termed by Dr. Marion Sims the bi-manual method, often affords valuable information. To carry it out, pressure is made with the left hand above the pubes, while the index finger of the right is kept in contact with the cervix uteri ; the patient lying on her back and the knees well flexed should be made to expire deeply and, at this moment, the fingers of the left hand should be pressed firmly down into the pelvis, immediately above the pubes, while the index finger presses the uterus upward from the vagina. It will thus, to use Dr. Sims' words, "be easy to measure the size and shape of the body of the womb, for it will be held firmly between the fingers of the two hands, and its outline and irregularities will be ascertained with as much nicety as if it were outside the body." In thin subjects the results here enumerated can be attained; but in fat or very muscular women we sometimes fail in our efforts to feel the uterus at all through the abdominal parietes. Still, even with these exceptions the bi-manual method of examination is often of great value. Sometimes you will find that the outline of the uterus can be more easily made out, by making the patient turn on her side, or even lie semi-prone on her face.

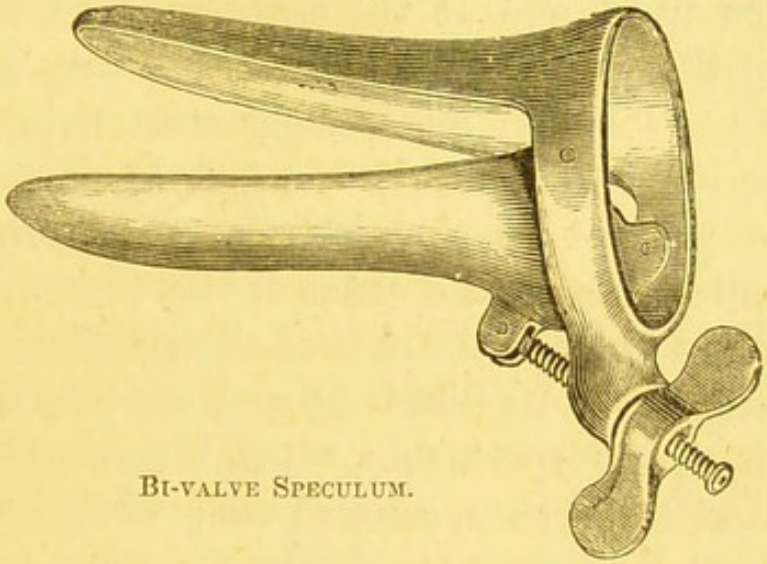
But a mere digital examination, though of importance, is insufficient, and in the great majority of cases you must not remain content with it, or you will fall into grave errors. To make your examination complete, you must have recourse to the use both of the speculum and of the uterine sound. I name them in the order in which, as a rule, they should be used.

You see on the table three kinds of speculums. All of

them are admirable instruments, and, as I am about to explain to you, each possesses certain advantages which the other wants, and certain disadvantages which renders the use sometimes of one, and sometimes of another preferable. It is, therefore, essential that you should be acquainted with the respective merits of each. There are, no doubt, many other kinds; but for ordinary purposes these are sufficient, and for general use I without hesitation recommend the one known as Fergusson's. It is, as you are aware, a glass cylinder silvered externally. This again is protected by a layer of gutta percha, which answers the double purpose of affording a very smooth surface, and serving as a protection to the vagina should the glass by any mischance crack or break. Through a full-sized one of these speculums you can see the parts very distinctly; it also possesses this great advantage, that it is uninjured by the action of acids, a class of remedial agents which are frequently used in the treatment of uterine disease. It is not, however, so easily introduced as either of the other speculums which I exhibit. If, therefore, the vagina be narrow, or if much inflammation be present, the attempt to use a full-sized one will give so much pain that you will have to desist, and should you with the view of avoiding this, have recourse to a smaller one, you will find much difficulty in bringing the os into view, and even when you succeed in doing so, the portion of the cervix exposed to view will be of such limited extent as often to afford but little information. Still the number of cases in which it is inapplicable will prove to be comparatively few. When, from the narrowness of the orifice of the vagina, or from the amount of inflammation present, you find Fergusson's

speculum to be unsuitable, I recommend you to make use of a plated bi-valve, such a one as this (Fig. 1).

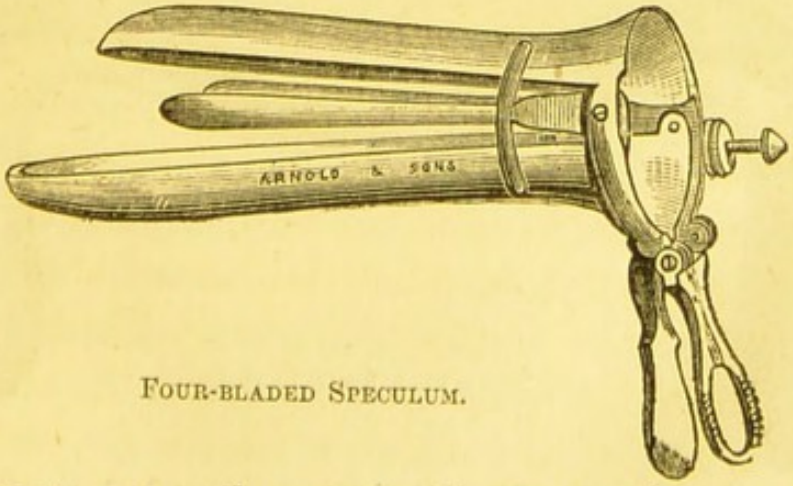
Fig. 1.



Bi-valve Speculum.

It is very easily introduced, but does not reflect the light nearly so well as the glass one does, and moreover, the lateral folds of the vagina fall, to a considerable degree, into the space between the blades when they are expanded, and intercept your view. To remedy the latter objection, Dr. Graily Hewitt has introduced a four-bladed speculum (Fig. 2), which in several respects

Fig. 2.

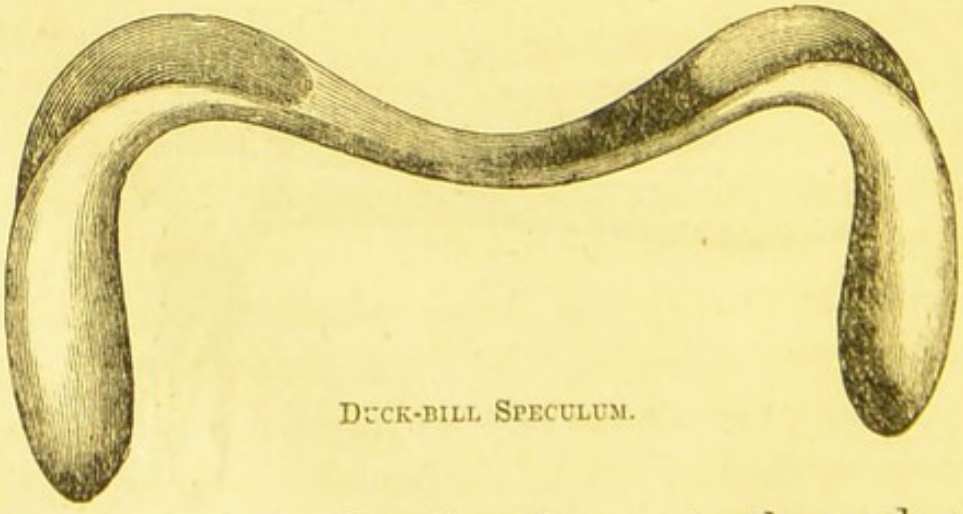


Four-bladed Speculum.

is superior to any other expanding speculum.

This speculum, which, from its shape, is known as the duck-bill speculum (Fig. 3), affords one advantage which neither of the others possess; namely, it permits you to see the os uteri, and at the same time to touch it—a matter of the greatest importance in many cases. We therefore use it when introducing sea-tangle or sponge tents into the cervix uteri; or when, having withdrawn these, we proceed to examine the condition of, or to make applications to, the canal of the cervix or body of the uterus, and also in the case of all operations about the vagina or uterus. Its disadvantages are that the forcible drawing back of the perineum, which is necessary to permit the os uteri to be seen, causes pain; while if the instrument be not held very steady, the os slips out of view. Secondly, that it is absolutely necessary to have an assistant present to take charge of it; and thirdly, that difficulty is often experienced in keeping the anterior wall of the vagina from intercepting the view, unless, indeed, you seize the os with a hook or vulsellum—the reasons for, and the mode of, doing which, I shall explain on a future occasion.

Fig. 3.



Duck-bill Speculum.

I shall now give a few directions as to the mode of in-

troducing Fergusson's speculum; for, if the instrument is used in a bungling, unhandy way, not only will your patient be caused much unnecessary pain, but you will also most likely leave an unfavourable impression on her mind as to your skill: I therefore feel that I am not wasting time in dwelling on these minutiæ. First, then, you should dip your speculum into warm water to bring it up to the temperature of the body, and oil it; then the patient lying on the left side with her hips well out, you should, with the index and middle finger of the left hand, raise and draw up the right labium and nympha, while with the thumb and index finger of the right hand you hold the speculum, and bring its points to the orifice of the vagina. You should at the same time, with the middle finger of that hand, depress the soft parts on the left side; for if this be not done, and if the labia or nymphæ be turned in before the edge of the speculum, the patient will be caused much unnecessary pain which a little care would have obviated.

When once the point of the speculum has fairly entered within the vagina, its further introduction is a matter of no difficulty; but still it is very possible for a person inexperienced in its use to fail in bringing the os uteri into view; therefore, you should be careful to keep the point of the instrument pressed well back against the posterior wall of the vagina, for the os uteri should look downward and backward, so that by keeping the point of the instrument in the direction I have indicated, the os should without difficulty come into view. If this be not the case the speculum should be withdrawn a little way, and its direction slightly altered, when the desired object will most likely be attained. The foregoing directions hold

equally good whether you use Fergusson's or the expanding speculum; for though the latter on account of its shape, is introduced with greater facility, yet it is not easier with it to bring the os into view; indeed the reverse is the case.

The duck-bill speculum requires special directions for its use. The following are those given by the inventor, Dr. Marion Sims, and should be carefully attended to whenever this speculum is used—"The thighs are flexed at right angles with the pelvis, the patient lying in a semi-prone position on her left side, her left hand being drawn backwards under her, and kept in that position; the chest rotated forward, bringing the sternum very nearly in contact with the table or couch, the head resting on the parietal bone; the head must not be flexed on the sternum nor the right shoulder elevated; the patient is thus rolled over on the front, making it a left lateral semi-prone position. The nurse or assistant at her back, pulls up the right side of the nates with the left hand, while the surgeon introduces the speculum, elevates the perineum, and gives the instrument into the hand of the assistant, who holds it firmly in the desired position." These directions are admirable, and should be strictly attended to.

When with either speculum you have exposed the os uteri you are able to judge of its state. You see first of all what may be the condition of its lips; if they are covered with healthy mucous membrane, and present the normal light mother-o'-pearl coloured appearance, or whether they be congested, abraded, or in a state of granular ulceration, bleeding on the slightest touch; you see also whether the os be a small opening, free from dis-

charge, or whether it be patulous, and plugged with a string of thick, glairy mucus, the sure indication of an unhealthy condition of the cervical canal. Then, while withdrawing your speculum you have an opportunity of satisfying yourself as to the condition of the vaginal mucous membrane; thus by touch and sight you are enabled to pronounce with positive certainty as to the state of the os, of the lower segment of the cervix uteri, and of the vagina; but should you stop here, you will in many cases have failed in your duty. Many a sufferer has been told, after having submitted to such an examination, that the womb was perfectly healthy, because the os and cervix appeared to be free from disease, and has consequently been looked upon as a complaining hypochondriac by her friends, while in reality she was a suffering invalid—the physician having failed to detect the actual ailment, either because he omitted to carry his investigation further, or because he was ignorant how to do so. For myself I lay down the following rule, which I advise you to pursue, in the investigation of all cases of uterine disease which come under your observation:—1st. To make a digital examination of the vagina and cervix uteri; 2nd. If that fails in satisfying me as to the cause of the patient's suffering, then to use the speculum; and 3rd. If still in doubt, to introduce the uterine sound, unless its use be clearly contra-indicated.

You are aware that the sound is an instrument of comparatively recent invention; still it is surprising how little it is used, and how few appreciate its merits.* I look on it as one of the most useful and at the same time, if

* This was perfectly correct at the date of the publication of the first edition of these lectures in 1871. It is hardly so now.

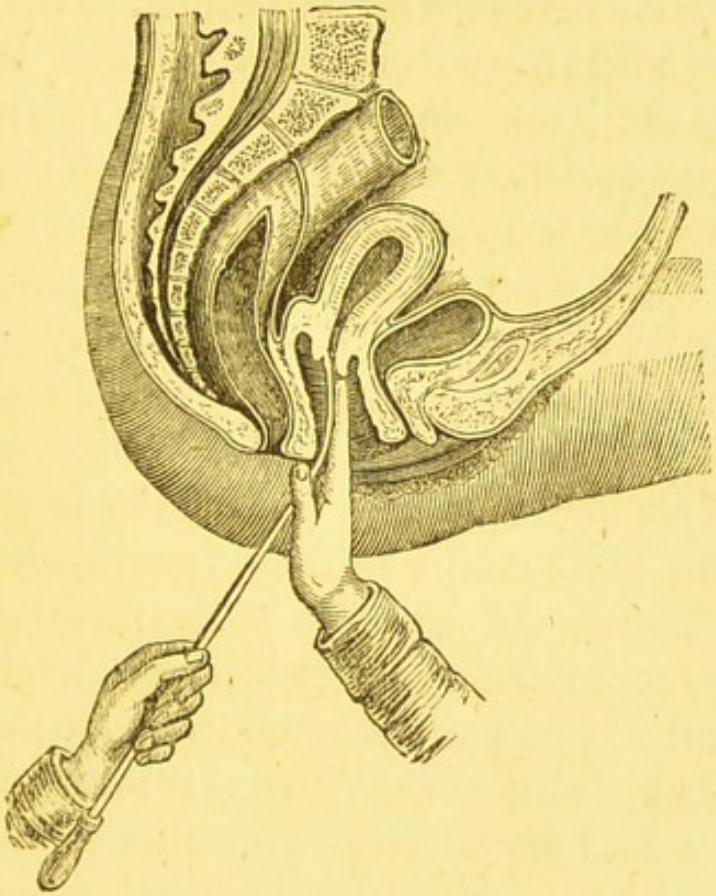
carefully and judiciously handled, safest of obstetric instruments. In my own practice, I am indebted to it for most important information which could not have been obtained by any other means, and this too without its ever having produced the most trifling injury. Doubtless I am aware, that if roughly and unskilfully handled, or used in an improper case, the most serious consequences may follow its introduction; but the same may be said of the catheter, or indeed of any other instrument requiring skill. I again repeat, that if carefully used and skilfully handled, the sound is a harmless instrument, and may be employed with perfect safety.

Before explaining the mode of introducing the sound, I wish to call your attention to the instrument itself. It is, as you see, a metallic staff, not unlike the sound used by surgeons for examining the bladder in the male. The best are made of copper, plated. The advantage which they possess is that you are able to bend them at pleasure, a matter of no small importance, as you are frequently obliged to alter the curve when flexions of the uterus exist.

At a distance of two and a-half inches from the extremity of the instrument there is a little knob, which marks the depth to which it should usually penetrate into the uterine cavity, and at this point you observe the instrument is curved, so that it may pass in a direction corresponding with the axis of the uterine cavity. The entire length of the instrument is marked at intervals of an inch by notches, which enable you at once to decide to what depth the instrument has penetrated; for if when withdrawing it you keep the point of your finger on the notch nearest to the os, you can with the aid of the figures marked on

the handle, see at a glance what the depth of the uterine cavity may be.

Fig. 4.



Mode of Introducing Sound.

It is not a matter of any great difficulty to introduce the sound into the cavity of the uterus; still it requires tact and practice, just as the use of the catheter does. The following directions will aid you in obtaining the requisite skill:—Holding the sound in the left hand, I recommend you to introduce the index finger of the right into the vagina, and keeping its tip in close contact with the os uteri, guide the point of the sound up to the os, slipping it along the inner surface of the finger, the concavity of the instrument being turned towards the rectum (Fig. 4).

A little manipulation and gentle pressure will now make

it enter the canal of the cervix. This being fairly accomplished, a fact you can always be sure of because your finger is still in contact with the os, you are to rotate the handle of the sound, a manœuvre exactly similar to that practised by surgeons when introducing the catheter in the male, and termed the "tour de maitre." This has the effect of changing the direction of the point of the instrument, which will now look upwards and forwards in the direction of the axis of the uterus; steady but very gentle pressure should now be made, and the point will, in general, pass on without difficulty till it reach the os internum; here some slight obstruction is met with. This, if it occurs, should be overcome by gentle continuous pressure; force must not on any account be used, lest injury be done to the uterine walls. As the point of the instrument passes through the os internum, the patient nearly always complains of pain and sometimes of nausea; but, as a rule, this subsides in a few minutes. When it is severe and lasts, as it sometimes does for some time, metritis or endo-metritis will be found to exist. I have on one or two occasions known a patient to feel faint, but this feeling soon passed off, and was never sufficient to prevent my finishing the examination; but it is well you should bear in mind while you are introducing the sound that some pain may be caused by your doing so.

In some instances an obstruction to the introduction of the instrument is met with low down in the cervical canal. This is not due to any contraction, but to the point of the sound becoming entangled in a fold of the mucous membrane, which in this portion of the intra-uterine canal is not smooth but plaited. Should this occur you must withdraw the point a little, and altering its direction some-

what, again press it onward. This difficulty is more likely to occur when the os uteri is patulous, and the cervical canal relaxed from the effects of disease, than when it is in a healthy condition; but a little patience and careful manipulation will always overcome these obstructions. If the fundus be retroflected the sound must be introduced, with the concavity looking towards the rectum. Sometimes it becomes necessary in such cases to bend the instrument considerably, to enable the point to traverse the curve, and occasionally this cannot be effected without also tilting up the fundus with the fingers of the left hand. In some cases of anteflection, too, the sound has to be bent considerably before it will pass. I have dwelt at some length on the mode of introducing the sound, because the difficulties of the operation have been much exaggerated, and I am satisfied that they are mainly due to want of skill on the part of the operator.

The method of using the sound which I have described is that which I always adopt; but there are other modes doubtless equally as good. Thus Dr. Graily Hewitt, following the plan recommended by Sir J. Simpson, introduces the index finger of the left hand, guiding the sound along it up to the os uteri; while Dr. West recommends introducing two fingers of that hand for the purpose, the instrument being held in the right hand. But whichever method you adopt, you will speedily, with a little practice become adepts, only remember, never use force; better far that you should never use the instrument than that you should run the risk of injuring the uterus, and perhaps cause a fatal result in doing by force what should only be accomplished by tact.

But you will frequently meet with cases in which the

use of the sound is entirely forbidden. Thus, if there be any possibility of pregnancy existing, it would be most improper to introduce it, and you must wait until you are satisfied on this point. In cases of cancer, too, and as a rule, during an attack of any form of acute inflammation, your own judgment will warn you against it. But with such exceptions as these, I can confidently recommend the sound as a safe and useful instrument. So high is my opinion of the value of the information to be obtained by the judicious use of the uterine sound, that I make it a rule to introduce it in all doubtful cases, unless its use is contra-indicated by the possible existence of pregnancy, or some equally valid cause.

Now, as to the information to be obtained from its use. We learn three things which it would be impossible to ascertain by any other means. First, we determine with positive certainty what the depth of the cavity of the uterus is. If the sound pass beyond the nodule at the curve of the instrument, we know that the cavity is unduly elongated, and we can measure accurately the extent to which it is elongated. Secondly, we ascertain the position of the uterus, and determine whether it be in its normal position, or flexed anteriorly or posteriorly. Lastly, we learn whether the organ is fixed or movable, free, or attached to any tumour, which we may detect in the pelvis. This is a matter of the greatest moment; for when we come to determine the all-important question as to the nature of some abdominal tumour, the sound, and the sound alone, enables us to decide whether the uterus is engaged in that tumour or not.

I have already told you, that in order to arrive at an accurate diagnosis, it is generally necessary to make a digital

examination of the condition of the uterus and vagina, and to use both the speculum and the uterine sound. But in many cases the two latter modes are not only unnecessary, but positively forbidden. Thus, if on introducing the finger into the vagina, you detect cancer of the cervix uteri, the introduction of the speculum becomes unnecessary, and may be injurious, while the use of the sound is altogether prohibited; or if, on using the speculum, we find the lips of the os uteri to be in a state of erosion the symptoms the patient is suffering from may possibly be accounted for, and the introduction of the sound into the uterine cavity is uncalled for, and should be therefore avoided. So your examination in all cases is to be progressive, the finger always being used in the first instance. Any departure from this course I deprecate strongly.

Further, in a certain number of cases it is necessary to introduce the index finger into the rectum, in order to decide certain points which your previous examination failed in determining. Thus, with the finger in the rectum and the sound in the uterus, you can ascertain whether a tumour lying in the posterior *cul de sac* is attached to the uterus or not. In like manner, the sound being introduced into the bladder and the finger in the rectum, the absence of the uterus may be detected, or an inverted uterus distinguished from a polypus.

I have now described briefly the mode in which you are to investigate cases of supposed uterine disease. In my future lectures, I will call attention to the symptoms of, and the mode of treatment adapted to, the various forms of uterine disease, as suitable cases for their illustration may from time to time present themselves.

LECTURE II.

Leucorrhœa—Definition of—Characteristics of—Sources of—Vaginal—Cervical—Uterine—Vaginitis—Causes of—Treatment—Clitoridectomy—Vaginismus.

It is a matter of much regret that the nomenclature of the diseases peculiar to women is so vague and indefinite; terms which in reality only express a symptom, the result of very various pathological conditions, being commonly used as indicative of a special disease. Thus we hear it said that a patient is suffering from "leucorrhœa," or it may be from "menorrhagia," while in point of fact these terms should only convey the idea of a prominent symptom. To-day I propose to call your attention to the subject of leucorrhœa; a word which literally means a white discharge, and for which the popular synonym is "the whites." It is a symptom met in connexion with affections differing widely the one from the other, while the discharge itself varies greatly in colour, in consistence, and even in chemical properties. It is essential that you should bear in mind, that although, as I have stated, leucorrhœa means a white discharge, the term is to be understood in a relative sense as opposed to a red sanguineous one, and that it includes all non-hæmorrhagic vaginal discharges. Thus very frequently it is of a light cream colour, sometimes of a yellow, or again of a greenish tinge.

In its natural healthy condition, the vagina, while moist, should not secrete any appreciable discharge; but hardly any departure from a perfectly healthy state of either the vagina or uterus ever takes place without leucorrhœa in some of its forms being present. You cannot have failed to remark the extreme frequency of this symptom among the patients who have presented themselves here, and yet you have seen that the affections from which they suffered were very various. But before reminding you of the different abnormal conditions on which, as I have from time to time pointed out, these discharges depend, I must briefly enumerate the main characteristics they present, and the sources from which they proceed.

As already mentioned, the term leucorrhœa includes a great variety of non-hæmorrhagic discharges. It very commonly presents itself as a profuse mucous discharge, inodorous and light in colour, or again as a thick creamy fluid, coating the whole surface of the vagina, and flowing into the speculum as you introduce it; then you have seen it so evidently purulent that, as I have pointed out, it was impossible to say whether it was the result of gonorrhœal infection or not; in other patients it was seen as a thick, tenacious, semi-purulent secretion, hanging out of and blocking up the os uteri, or lastly as a clear, transparent slightly viscid fluid, which issued from the uterus. Now it is quite evident that these various forms of leucorrhœa must not only depend on different causes, but also must be secreted by different parts of the genital canal. Accordingly, we find vaginal leucorrhœa, cervical and uterine leucorrhœa, or catarrh, to exist as distinct affections.

The discharge, when proceeding from the vagina, is

generally a light coloured, creamy-looking fluid, unless acute vaginitis be present, when it may become almost purulent: it is sometimes secreted from the whole surface of the vagina, but more frequently, especially in children, proceeds mainly from the vulvo-vaginal glands. Again, in some forms of erosion of the cervix uteri, the discharge is profuse and semi-purulent. That poured out by the cervical glands is very different in character; the glands situate in this part of the uterus are very numerous, and when inflamed secrete a copious, tenacious, albuminous fluid, closely resembling in appearance the white of egg; this discharge is so remarkable and so pathognomonic of disease of the cervical canal, as to be unmistakable. Lastly, you may have leucorrhœa proceeding from the interior of the cavity of the uterus itself.

The occurrence of this form of leucorrhœa is less easily recognizable than any of the others, but of its existence as the results of a special affection I entertain no doubt, and there is ample evidence to show that a copious discharge is, under certain circumstances, poured out from the mucous membrane lining the body of the uterus. This membrane at each menstrual period undergoes a great change, fitting it for the reception of the impregnated ovum, should such reach it—a change aptly termed by Dr. Aveling "Nidation"—or, conception failing to occur, a process of degeneration takes place, and it is expelled in minute portions, or sometimes, though rarely, as a perfect sac. This great and frequently recurring change in its condition predisposes to the occurrence of disease; in addition to which there is also to be taken into consideration, the vast alterations which occur in it during pregnancy, and subsequent to delivery or abor-

tion. As a matter of fact we find that the approach of menstruation is in most women ushered in by the appearance of a white, mucous discharge, which there can be but little doubt is mainly secreted by this membrane; therefore that a similar discharge should present itself when it is the seat of disease is to be expected. The discharge issuing from this source is often not to be distinguished from that secreted in the vagina, with which it becomes mingled; but while the latter has an acid, the uterine discharge has an alkaline reaction, and it is the mingling together of these two fluids of opposite reactions that gives rise to the curdled appearance sometimes seen in the vagina.

The causes of leucorrhœa may be either constitutional or local. Anything which debilitates the constitution is liable to be accompanied by the appearance of a white discharge; thus it is seldom absent when lactation has been unduly prolonged; or if a woman be debilitated by profuse menorrhagia, she is nearly certain to be further weakened by the occurrence of leucorrhœa in the intervals between the menstrual periods. Again, it is met with in delicate girls, especially those of a leucophlegmatic temperament, in whom there exists a tendency to phthisis, and not infrequently in them it is the precursor, if not the cause, of the lung disease. Dr. Bennet, who for several years was engaged in practice at Mentone, a favourite resort, as you are aware, for consumptives, remarked that great improvement frequently took place in the condition of many patients threatened with phthisis in whom leucorrhœa existed, on that discharge being checked by appropriate treatment; an observation capable of easy explanation, if we bear in mind how exhausting

must be the effect of a profuse discharge so rich in albumen as leucorrhœa is.

In cases which come under either of the heads I have alluded to, namely, debility arising from over-lactation, or from the effects of a weakly strumous constitution, our treatment must be twofold; in the first place, to endeavour to check the debilitating discharge, and then to invigorate the constitution and improve the general health. With the view of effecting the former, you will order the use of astringent vaginal injections, those of borax, alum, or sulphate of zinc are the best, about two drachms of either salt being dissolved in a quart of tepid water. This quantity should be injected twice a day into the vagina by means of an ordinary syphon syringe, and at the same time you should by change of air, when possible, by the adoption of a generous diet, and by the judicious administration of tonics, of which the preparations of iron are especially appropriate, endeavour to improve the patient's general health. But other cases of leucorrhœa are met with less amenable to treatment than these—namely, those which depend on the existence of visceral disease, such as that of the liver or kidney, cases in which special treatment can do no good, and therefore is to be avoided. It would be tedious and unprofitable, however, for me to enumerate all the constitutional causes which predispose to the occurrence of leucorrhœa. I may briefly sum up this part of the subject by saying, that any disease which debilitates and enfeebles the health, is likely sooner or later to be accompanied by leucorrhœa.

But in addition to the cases depending on disease of other organs, or of the system at large, we constantly meet with leucorrhœa as a symptom of local disease, and

of none more frequently than that of inflammation of the vagina itself, or vaginitis as it is termed. You have seen over and over again examples of this.

The mucous membrane lining the vagina, in common with that of all other parts of the body, is liable to inflammation of both an acute and chronic character; the latter, however, is much the more common. We have recently had under treatment two well marked instances of acute vaginitis, one in a young woman, J. McC——. She stated that she had been married for four years but had never been pregnant. She complained of burning pain in the vagina, of pain in the back, and of scalding in making water. On examining her, the entire length of the vagina was seen to be of a bright scarlet colour; it was tender to the touch, the introduction of a small speculum, and even of the finger, giving great pain.

As the speculum was being introduced, we saw a copious discharge of a greenish-yellow colour to pour into it. The mucous membrane covering the os uteri was bright pink, the cervix itself being evidently congested.

Now these cases of acute vaginitis are rare, and I always look on them with suspicion; accordingly I questioned this patient closely as to the possibility of her having contracted gonorrhœa; she said it was impossible; but be the cause what it may, we had here to deal with a case of acute inflammation of the mucous membrane of the vagina, and I treated it as I would similar inflammation occurring in any other part of the body. If an oculist meets with a case of acute ophthalmia, he endeavours, in the first instance, to arrest the progress of the inflammation by local blood letting; I advocate the

same practice in acute vaginitis. You may remember that in this case I punctured the cervix freely and encouraged the bleeding, and ordered her saline purgatives, but I did not, in the first instance, make any application to the vagina. Caustics or astringents used at this stage would only have done harm. In the case I am referring to I purged the patient freely, and punctured the cervix at intervals of a few days, on each occasion abstracting a good deal of blood; and when the acuteness of the inflammation had subsided, applied to the vagina a solution of nitrate of silver, ten grains to the ounce, and subsequently a stronger one. At the end of two months this young woman returned, having in the interval become pregnant.

Now, had this woman been in hospital instead of attending as an out-patient, I should, in addition to the local abstraction of bloob by puncturing and the exhibition of purgatives, have prescribed warm hip-baths, or directed hot water* vaginal irrigations, to be used twice daily, which would not only have expedited the cure, but also have alleviated the woman's sufferings, and these are the means I recommend you to adopt in your future practice. The foregoing case afforded a good example of the difficulty of deciding between simple acute inflammation of the vagina and that depending on gonorrhœal infection. I must avow that I know of no means of distinguishing with any certainty between the two.

Another mode of treatment, of the greatest value, is by the application of glycerine. A roll of cotton wool, or

* For directions as to the mode of carrying out this treatment, see Lecture XVII.

of wadding, with a strong thread attached to facilitate removal, is to be saturated with glycerine; this is to be then introduced into the vagina through a speculum, and left *in situ* for twenty-four hours. The glycerine, by its affinity for water, produces a copious serous discharge which in a marked degree, relieves the congestion that exists. In a future lecture, however, I will refer at greater length to the local use of glycerine in uterine affections. *

I have already said that cases of acute vaginitis are of infrequent occurrence; but, though acute vaginitis is not very often seen, sub-acute inflammation of the vagina, accompanied by leucorrhœa, is common enough, and is the cause of much suffering. The pruritus, the burning pain in the vagina, the frequent desire to micturate, and the scalding on doing so, though not so severe as in cases such as the one I have just detailed, are often constant and most distressing. The causes of these attacks are various; you meet them sometimes in young healthy women, who generally attribute them to cold, but they are seen more frequently in married women in whom, in addition to the causes named, I am inclined sometimes to attribute their occurrence to the effect of too frequent sexual intercourse, of intercourse occurring too soon after menstrual period, or before the vagina has regained its normal condition after delivery.

There is one form of sub-acute vaginitis which gives rise to very distressing symptoms; in it we see aphthous looking patches on various parts of the vagina. I have

* It is occasionally desirable to instruct patients how to carry out this method themselves. For this purpose a vulcanite repositor has been suggested by Dr. Clement Godson, which answers the purpose very well. It is made by Arnold and Sons, West Smithfield.

invariably remarked that this condition of the vagina is accompanied by most distressing pruritus; not that pruritus does not occur in cases of vaginitis in which these aphthæ do not exist, for on the contrary, pruritus is a very common accompaniment of every form of vaginitis, but it is most marked, and generally if not always present in conjunction with them. And here let me impress on you the uselessness of attempting to treat itching about the vulva, without first ascertaining what the condition of the vagina and uterus may be; for you will seldom fail to discover, either that inflammation of the mucous membrane exists, that the cervix uteri is congested and abraded, or that chronic endo-metritis exists, and till these are cured all your efforts to relieve the pruritus permanently will fail. If vaginitis alone exist, you will, with the view of attaining this object, and at the same time of checking the pruritus which it causes, use in the first instance soothing applications and then astringent ones. Of the former none can compare with infusion of tobacco. It should be made by infusing from half a drachm to a drachm of the unmanufactured leaf in a pint of boiling water. The infusion thus prepared should be injected into the vagina twice a day. It is necessary, however, to exercise much caution in using it, for if the orifice of the vagina be narrow, some of the infusion may be retained in that canal, and nausea and vomiting result from its absorption into the system, indeed some patients are so easily affected by tobacco, that even a very weak infusion will not be tolerated.

An infusion of hops, made by infusing an ounce of hops in a quart of boiling water is another very soothing remedy. It may be employed without the risk of the

occurrence of the unpleasant symptoms which occasionally follow the use of the infusion of tobacco; infusion of linseed also forms an excellent and soothing lotion.

When the acute symptoms have abated, the addition of borax, in the proportion of a drachm to the pint, adds greatly to the efficacy of either of these infusions, or a solution of borax in tepid water, may, if preferred, be employed. Very often, indeed, great good may be effected by irrigating the vagina with plain warm water, provided it be done efficiently; but I must refer to this subject again.*

The itching in these cases is sometimes almost intolerable.† To relieve this most distressing symptom, I am in the habit of recommending the patient after she has syringed or sponged herself with warm water, to place between the labia a piece of lint or pledget of cotton soaked in a lotion composed of carbolic acid, twenty grains; tincture of opium, four drachms; dilute hydrocyanic acid, two drachms; glycerine, four drachms; and water to four ounces. Sometimes when the vagina is excessively tender, medicated pessaries containing acetate of lead or tannin do good; but I do not think that any kind of pessary can be relied on. Dr. Greenhalgh recommends their being made with glycerine and gelatine, and containing whatever medicinal substance may be desired; such doubtless possess the advantages of not producing the disagreeable greasy discharge, which those made in the ordinary way do.

You will often find that vaginitis is associated with a

* See Lecture XVII.

† It should be borne in mind that pruritus is sometimes a prominent symptom in cases of diabetes.

weakly state of the constitution, and that you are called on to administer tonics; of these the mineral acids seem especially useful. But it does not follow that because you cure the vaginitis the leucorrhœa will disappear. Sometimes it continues when all symptoms of inflammation have subsided, and then you can use freely and with great advantage, as injections, solutions of alum, two drachms, or of sulphate of zinc, one drachm, to the pint; but often all our efforts fail to check entirely the discharge, and it becomes chronic or disappears only after a long interval. Before leaving the subject of vaginitis, let me caution you against pronouncing every little blush of redness that may be seen on the vagina to be inflammatory, or of attributing all symptoms the patient may complain of to that affection.

In nearly every case of leucorrhœa the discharge is much more profuse immediately after the menstrual period has terminated, and occasionally it seems to take the place of the latter, which is then suppressed. In these latter cases the leucorrhœa is profuse at the date when menstruation ought to occur, and lessens considerably, or nearly disappears, for a time corresponding to the interval between the ordinary periods. This is likely to occur when the patient is debilitated by prolonged lactation, or by the existence of some constitutional disease. A white discharge, accompanied occasionally by a good deal of vascularity and irritation of the orifice of the vagina, is also not unfrequently met with in unhealthy strumous children; and this has sometimes given rise to a suspicion that the child had been injured by an attempt at sexual intercourse. You must exercise great caution in such cases in giving an opinion;

but, unless strong confirmatory evidence exists, showing that an attempt at penetration has been made, I would have you slow in encouraging the idea. You may have recently seen an example of such a case in the children's ward; the little patient was but six years old. Cleanliness and a nutritious diet, with the exhibition of iron, speedily improved her condition. I also passed a camel's hair pencil saturated in a solution of nitrate of silver, up the vagina every four days, and she was soon quite well. You must also bear in mind, that irritation about the vulva may be kept up in children by the presence of worms in the rectum. Even in adults the possibility of leucorrhœa depending on irritation existing in the rectum must not be overlooked. Thus among our extern patients you recently saw a young woman in whom vaginitis was kept up by the presence of tape worm.

Hitherto I have spoken only with reference to discharges of purely vaginal origin; we have besides, as already mentioned, both cervical and uterine leucorrhœa. It is also nearly certain that in some forms of disease of the Fallopian tubes, a discharge is secreted which finds its way into the uterus and thence to the vagina, but it is often difficult, if not impossible to diagnose the existence of Fallopian disease during life.

You are all aware of the appearance which cervical leucorrhœa presents, I have called your attention to it so frequently. In its healthy condition the cervical glands secrete a transparent viscid fluid in such small quantities as not in general to attract any attention, or be observed when the speculum is introduced; but, when the cervical canal becomes the seat of inflammation, this secretion becomes not only much more profuse, but also very thick

and tenacious, blocking up the os uteri, and hanging out of it as a rope of viscid mucus which it is almost impossible to wipe away. Cervical leucorrhœa, or as it is sometimes called, "cervical catarrh," is an effectual bar to pregnancy, in this contrasting with most of the other forms of leucorrhœa which do not necessarily cause sterility.

The condition of the cervix giving origin to cervical leucorrhœa is one very difficult to cure; to do so, you must treat the whole extent of the cervical canal. For this purpose I generally use a solution of pure iodine in carbolic acid, named by Dr. Battey who introduced it into practice, "Iodized phenol." You have seen me apply it frequently with success. At present, however, I can only glance at the treatment of this most obstinate affection; I shall return to it again, when the subject of disease of the cervix uteri comes before us.

I have already stated that leucorrhœa may proceed from the interior of the body of the uterus; the diagnosis of this form is less easily made than that of the others. Its presence is generally accompanied by a greater or less amount of pain, which is not necessarily present in either of the other forms. The reason of this is easily understood, for uterine leucorrhœa is, I believe, nearly always the result of disease of the lining membrane of the womb. When leucorrhœa is vicarious with, or, as already stated, takes the place of, the regular menstrual discharge, it proceeds from the interior of the uterus.

Perhaps the present is the most suitable time I shall find for alluding to a practice, unfortunately of not very rare occurrence, which, while it destroys the health of the body, if persisted in, impairs in no less a degree the powers

of mind and which is nearly always accompanied by leucorrhœa—I allude to masturbation. I do not believe all I have heard as to its great frequency, but that it is practised by many females is too true. In some, I have no doubt, it has been the result of uterine disease, the habit having been contracted accidentally in the first instance, in the efforts to procure alleviation from the irritation which so often exists about the orifice of the vagina; but be the cause what it may, it is soon accompanied by vaginitis and endo-cervicitis, manifested by the presence of the well-known, glairy discharge. Beware, however, of charging the patient with being addicted to this degrading habit, because suspicious symptoms present themselves; the dilated pupil, the downcast look, the uncontrollable excitement which the vaginal examination causes, generally tell the tale; added to this, there is often a severe lancinating pain complained of immediately over the pubes, and in several cases I have noticed that vomiting *at night* has been a prominent symptom. The habit if carried to any extent also often gives rise to vaginitis and even endo-metritis of an obstinate form, as well as to serious constitutional symptoms, of which menorrhagia or amenorrhœa are not uncommon ones. These distressing cases can be cured by moral means alone; local treatment is nearly useless, and generally injurious, for it attracts the patient's attention to the genital organs, the very thing we should be most anxious to avoid. The administration of bromide of potassium in thirty grain doses is however sometimes beneficial. I disapprove of the practice of mutilating the patient by the removal of the clitoris. This operation is generally useless; for there is no truth in the idea that in the clitoris alone is seated

the nervous expansion which subserves the sexual orgasm. Certainly it should never be performed except in extreme cases, and with the patient's entire assent, and when we are satisfied that she is really anxious to cure herself of the degrading habit.

There is a condition of the vagina, or to speak more correctly, of the orifice of the vagina, to which the term vaginismus is applied, the result apparently of some irritation of the nerves supplying the sphincter, or constrictor vaginæ muscle, and which sometimes causes much distress. Any attempt at sexual intercourse, or even at introduction of the finger, producing spasmodic closure of the canal. In some cases this condition is evidently the result of inflammation, and can only be relieved by the use of soothing applications, such as those already recommended in cases of ordinary vaginitis. In addition to these means, Dr. Barnes recommends that the patient should wear a cylindrical vaginal pessary made of India-rubber, which is to be inflated with air after its introduction; this acts beneficially by keeping apart the irritable and inflamed walls of the vagina, and moreover, according to Dr. Barnes, by the "mechanical support it affords to the vaginal walls, subdues the morbid contractility of the muscular tissue."

In other cases, however, no inflammation exists, except it may have been produced by attempts to forcibly overcome the spasm.

Dr. Marion Sims is of opinion, that under such circumstances the hymen itself is the seat of the excessive irritability, and he has succeeded in perfectly curing several patients by dissecting out the hymeneal membrane, and afterwards dilating the vagina by means of glass

dilators (*Uterine Surgery*, page 335). Vaginismus, in an aggravated form, is not of frequent occurrence, but cases exhibiting minor degrees of spasm are met with in practice from time to time.

But you must be careful not to confound Vaginismus with those not uncommon cases in which sexual intercourse is simply painful, a condition termed by Dr. Barnes "Dyspareunia." This condition, in some cases, depends on inflammation of the vagina, but more frequently on the existence of chronic metritis; occasionally its causes are obscure, and baffle, or for a long time resist, our efforts to effect a cure.

I may here allude to a trifling, though very troublesome affection not unfrequently met with in females, and which is often accompanied by a leucorrhœal discharge; namely, the occurrence of those little vascular tumours, which grow round the orifice of the urethra. These frequently give rise to considerable irritation, and even actual pain, the passage of the urine over their surface sometimes causing much suffering. Their removal sometimes gives trouble. Caustics generally fail, while considerable bleeding has followed attempts to extirpate them. The late Dr. Beatty was in the habit of passing a ligature of fine iron or silver wire round them, with Wilde's snare for aural polypi and twisting them off; but the means most likely to be followed by permanent cure, will be found to consist in cauterising them freely by means of the galvanic or thermo cautery, the patient being under the influence of chloroform.

LECTURE III.

Menstruation — Amenorrhœa — Causes of — Local and Constitutional—Treatment of Various Forms—Use of Galvanic Stem Pessary—Medical Agents.

By menstruation, as you are aware, is understood that periodic sanguineous discharge which occurs in the human female at regular intervals of about four weeks. Its first appearance in the majority of girls takes place in their fourteenth or fifteenth year, but it may be, and frequently is, deferred to a much later period without the health being impaired. The discharge itself is blood mixed with mucus, and with shreds of the mucous membrane lining the body of the uterus. The blood proceeds from the uterus, as has been proved beyond all possibility of doubt; for, in cases of inversion of the uterus, the blood has in several instances been seen to flow from the everted surface; but, although the discharge proceeds from the uterus, the function depends on the ovaries, for the stimulus necessary for its first appearance, subsequent regular recurrence, and due performance. These organs, as you have learned elsewhere, become congested as the period approaches, and finally extrude the mature ovum, while the uterus, participating in the same condition, assumes a state of activity; the membrane which lines its cavity becomes thickened, and affords a favourable nidus to the ovum should it be fecundated; or that failing to occur,

it becomes disintegrated and is cast off with an escape of blood in a sufficient quantity to relieve the congestion which has temporarily existed. The most careless observer must see how slight a cause may disturb the equilibrium, which nature designs to be maintained during the performance of this nicely-adjusted function, and how a chill, or other suddenly acting cause, by checking the menstrual discharge, may lay the seeds of uterine disease.

As already stated, the majority of females commence to menstruate during their fourteenth or fifteenth year; in many, however, the discharge does not show itself till a much later age. The interval which elapses between each period varies a good deal in different women; it should not, however, be less than twenty-one, or exceed twenty-eight days; the duration of the period, too, varies much; in some extending over but two or three, in others continuing for five or six days; if these limits be exceeded, menstruation cannot be looked upon as being strictly normal, though instances are met with in which a considerable departure from the foregoing standard occurs, and yet the health in no way suffers. The reproductive powers of the female cease with the cessation of menstruation, which occurs at a date even more irregular than does the first appearance of the flow, and this period, termed by some "the change of life," by others the "climacteric period," is a time marked by a special tendency to the development of disease.

The departures from normal healthy menstruation are numerous. Menstruation may be scanty or profuse; it may occur only after long intervals, or return after the lapse of but a few days; it may be painful, or, finally, not ap-

pear at all. The latter condition is probably the rarest. Amenorrhœa, taken in the limited sense of total absence or suppression of menstruation (the suppression of menstruation during pregnancy being, of course, excluded), is not by any means so frequently met with, as are the other forms of derangement of the menstrual function; but, if taken in the more extended sense of greatly diminished menstruation, it comes commonly enough under our notice, and it is in this latter sense that we must consider the subject.

Cases of amenorrhœa naturally divide themselves into two classes; namely, those in which menstruation has never occurred, or, if at all, in a very imperfect manner; and those in which the function once normally performed, now appears irregularly and with a scanty flow, or has ceased entirely. Each of these, again, must be subdivided into two other classes, as the amenorrhœa depends on local or constitutional causes.

It is self-evident that for the due appearance of the discharge, no less than for its regular return, both the ovaries and the uterus must be in a normal state; for though poured out from the inner surface of the latter, the stimulus essential to produce menstruation must proceed from the ovaries. If, therefore, the ovaries be absent, diseased, or imperfectly developed, or if the uterus be wanting or rudimentary, the discharge will not appear at all, or at best, as a mere sign. There is generally much difficulty in deciding whether the ovaries are at fault or not; but if the patient be well formed, if the breasts have become full and round, and if, in addition, the symptoms known as the "menstrual molimina" show themselves, we may conclude that it is not from any fault

in the ovaries that the non-appearance of the discharge depends. These symptoms, in addition to numerous vague nervous sensations, consist of pain in and fulness of the mammæ, which sometimes become swollen and hard; of pain in the ovarian region; weary aching across the loins and down the thighs; of flushings and headaches, and sometimes of nausea. If all these symptoms be wanting in a woman whose health is in all other respects good, there is reason to suspect that the absence of menstruation may depend on some abnormal condition of the ovaries; but what that condition may be, can seldom be known during life.

In the majority of cases in which the absence of the menstrual molimina leads us to suspect that the ovaries are absent or defective, the patient's general contour is imperfect and the stature stunted; but this is not by any means necessarily so. There is a woman at present attending our out-patient department, whose case I called your attention to the other day. She is well formed, aged about thirty, and has been married for about four years. Menstruation occurs, she tells you, only at intervals of three months or upwards, and she adds, that until after marriage she menstruated altogether but some half-dozen times, at intervals of at least twelve months. Sexual intercourse in her case has evidently acted as an ovarian stimulus, inducing the flow to appear after shorter intervals and in increased quantities; she has never been pregnant. I am of opinion that in this case the ovaries, although present, are in a state of imperfect development. I should add that the vagina and uterus are in this woman in all respects normal.

Again the uterus may be entirely wanting or only be in

a rudimentary condition. No case in which the uterus was altogether wanting has presented itself at this hospital since my connection with it, but I must nevertheless refer to the subject. Cases occur in which all the symptoms constituting the menstrual molimina are present, and in which consequently we may fairly conclude that the ovaries are normal, and yet menstruation does not follow. In some of these the uterus has been proved to be entirely absent. The diagnosis on this point is not difficult to make; for if a silver catheter be introduced into the bladder and the finger into the rectum, the presence or absence of the uterus can be determined with certainty.

But though cases in which the uterus is altogether wanting are rare, instances of an imperfect or rudimentary condition of the organ are from time to time met with. The following one recently came under my observation: the patient, a married lady, had never been pregnant; menstruation appeared regularly, but was very scanty, and lasted hardly a day; the uterus measured but an inch in length, the vagina, too, was very short, its entire length being only about two inches; she consulted me on account of her sterility. In such cases the protracted use of the galvanic stem pessary has occasionally been productive of benefit, and in some instances the uterus has elongated and increased in size under the influence of the stimulus the instrument has afforded, menstruation at the same time becoming more nearly, or even altogether, normal. Shortening of the vagina is not uncommonly met with in cases in which the uterus is imperfectly developed.

In some instances the vagina is entirely absent. A specimen illustrating this condition was exhibited at a

meeting of the Dublin Obstetrical Society, a little time ago. The patient, from whose body it was taken, had been for years under observation. She suffered the most intense paroxysms of pain for some days during each month, caused probably by the attempts made by the uterus to expel the menstrual fluid; after death a pouch was found below the os uteri, distended with fluid. The evident total absence of the vagina in this case deterred the surgeon, under whose care this patient had been, from attempting an operation. Lesser degrees of atresia are, however, more frequent, and afford fair promise of being benefited by operation; and as serious consequences, and even death, are likely to result if an exit for the menstrual fluid be not obtained, the attempt to reach the upper portion of the vagina by a careful dissection is certainly warranted.

More important, because more common and more often capable of being benefited by treatment, are those cases of partial occlusion of the vagina which are occasionally met with. Occlusion of the vagina may occur in one of three ways. (1.) The Hymen may be imperforate, so as absolutely to prevent the exit of the menstrual discharge. An example of this came under my observation in this hospital some time ago, and the condition can hardly fail to be recognized if only a vaginal examination be made, as it should always be, in cases of amenorrhœa, where constitutional treatment has failed. In the case referred to, the Hymen bulged outwards, in consequence of the pressure of the fluid contained in the vagina and uterus; it was punctured, and the fluid evacuated slowly. Subsequently a crucial incision was made through the membrane, and its edges kept apart for a few days, so as to pre-

vent the possibility of union taking place. (2.) The occlusion may be situated high up in the vagina. This was so in the case of the woman on whom I operated last week. Menstruation occurred in her but in a very imperfect manner, and was accompanied with great pain. A dense membrane closed the vagina in its upper third, at either side of which was situated a small opening, which admitted with difficulty the point of a fine probe; through the rectum the uterus could be felt above, the occluding membrane, which was very thick and dense, was dissected out. (3). Lastly, the vagina may be occluded as the result of adhesions occurring either after tedious labour, in which the second stage having been unduly prolonged sloughing followed, and finally, the vaginal walls uniting to a greater or less extent; or as the result of local inflammation which occurred in early childhood. When the occlusion is the result of adhesions, formed during infancy or early childhood, it is generally situated low down in the vagina, at or near the vulva; but if it be the result of sloughing following on protracted labour, it is more likely to be met with in the middle or upper third of the canal.

Both these forms are generally capable of being cured by an operation, a small opening being first made which should be gradually and carefully enlarged; but I cannot here attempt to describe the steps of an operation, which must vary in each case according to the part of the vagina at which the occlusion is situated, its extent and the age of the patient. In all cases, great care is necessary to prevent the adhesions reforming. With this view the vaginal walls must be kept apart by the intervention of a pledget of lint or of cotton wool saturated with glycerine,

and for a long time after the surfaces have healed, the patient should wear a glass dilator for two or three hours daily, for in these cases there is always a great tendency in the vagina to contract. The term *atresia* is applied to all cases of absence of the vagina, or its closure by adhesive inflammation.

Apart from these malformations which are comparatively seldom met with, certain local conditions occur which interfere with the regular performance of menstruation and cause amenorrhœa. Of these, none is more common than congestion of the mucous membrane lining the body of the uterus, the result of exposure to cold, or of some shock or inflammatory attack. If a woman, during the menstrual flow, be suddenly chilled, or remain sitting or standing for a length of time in a damp, cold place, the flow is very likely to be checked, congestion of the uterus, or at least of the mucous membrane lining its cavity, being the result. This condition may then become permanent, and till it be relieved the discharge will not reappear, or, if at all, in an imperfect manner. Amenorrhœa depending on this cause gives rise to very distressing symptoms: the patient complains of pain in the back, of a sense of weight in the pelvis, and, more especially, of headache. You have frequently seen instances of this form of amenorrhœa among the patients in the extern department. These cases nearly always apply for relief during the interval which elapses between two menstrual periods, and you must consequently at first limit your efforts to relieve the prominent symptom, namely, the headache, and not make any attempt to re-establish the flow till the time comes round when it ought in the regular course to appear. With the view to the former, I almost invariably

give mild purgatives. In dispensary practice, I usually prescribe a mixture containing one ounce of sulphate of magnesia in eight ounces of infusion of quassiæ, to which I generally add a drachm and a-half of dilute sulphuric acid. Two tablespoonsful of this mixture taken morning and evening, nearly always act as a mild laxative; should it not, I direct a third dose to be taken at mid-day. This simple treatment generally relieves the head, and you must have repeatedly noticed that patients have returned stating that the headache had entirely disappeared, and sometimes that the discharge, which had been suppressed, had again showed itself. Instead of the saline purgative just alluded to, my friend, Dr. James Little, is in the habit of prescribing a pill containing one or two grains of extract of aloes combined with one-sixth of a grain of tartar emetic, to be taken each night at bedtime; a formula which he has found of great use in cases of recent standing, occurring in girls of plethoric habit.

But often additional measures are necessary, and these you are to have recourse to when the time at which the flow should appear approaches. You may direct the patient to sit with her feet in hot water for fifteen minutes each night for several days in succession; by mixing two or three tablespoonsful of mustard with the water you will greatly increase the efficacy of this treatment; or what in suitable cases, is often more efficacious, employ the cold hip-bath, directions for the use of which I will give hereafter.* If the patient be plethoric the application of a couple of leeches to the verge of the anus, or to the inner and upper part of the thigh, constitutes a safe and often very efficacious mode of treatment. Until you

* See Lecture XVI.

have succeeded in relieving the local congestion, you should not have recourse to the exhibition of that class of remedies which stimulate the ovaries and uterus, and which are known by the name of emmenagogues, for such treatment would only aggravate the evil.

Cases, however, occur in which the uterus seems so sluggish that though free from disease, it will not respond to the natural stimulus which the ovaries should afford, and this though no constitutional disease exists; these are the cases in which means directed to stimulate the uterus do good, foremost among which is electricity. A remarkable example of the benefit of this agent came recently under my observation. J. N., æt nineteen, a pale, strumous looking girl, had never menstruated, but for some months past had periodically vomited blood; the vagina and uterus were normal; strychnia and other drugs were administered without benefit. Medicines were discontinued, and electricity was tried; one pole of the battery being applied to the sacrum and the other to the vulva; this was repeated daily for a fortnight, when she complained of intense headache, of pain in the back, and of sickness of stomach; the next day the catamenia appeared freely, but strange to say none of the symptoms subsided; the vomiting was incessant and the febrile symptoms ran very high; the flow continued for six days very freely, and then ceased, and with it disappeared the febrile symptoms, the sickness of stomach and headache. At the end of four weeks she again began to suffer from headache; electricity was again had recourse to, and the catamenia re-appeared, this time unaccompanied by the severe symptoms which had previously marked its advent.

There is another method of stimulating the uterus which I have practised with much success in such cases. I allude to the use of the so-called "Galvanic"* stem pessary. This little instrument (Fig. 5) is made of copper and zinc, the upper half of the stem being zinc, the lower copper, or, better still, of two parallel pieces of copper and zinc united throughout the entire length of the stem. Dr. Thomas, of New York, recommends a further modification, and in some cases uses a stem composed of alternate beads of copper and zinc, strung together on a copper wire, thus making the stem flexible, which is occasionally an advantage. The bulb to which the stem is attached is hollow, and there is an orifice in its under surface into which the point of a sound being inserted the pessary can be carried up to the womb; the stem is passed through the cervix till its point *nearly* reaches the fundus, and the instrument is then left with the stem in the cavity of the uterus. These pessaries are made of various sizes and lengths, a matter of great importance, as not only does the uterus vary in length in different individuals, but the cervix also will in one case admit a stem much larger than in another; you should therefore

Fig. 5.

Galvanic Stem Pessary.

* While I retain the term "Galvanic," as applied to this pessary, and say I have found it of use, I do not wish it to be understood that I consider it to possess any galvanic properties, which, as such, act on the uterus. There can be no doubt, however, but that when the two metals (copper and zinc) of which the instrument is composed, are in metallic contact, and surrounded by a fluid containing saline matter in solution, a certain amount of electrical action goes on, and that when the stem is introduced into the cervical canal, the salts contained in the uterine secretions are decomposed, and corresponding salts and oxides of zinc and copper are formed, which act on the mucuous membrane lining the uterus.

measure the depth of the uterus before you attempt to introduce one of these pessaries, and select one a *little shorter* than the depth of the womb; taking care also that the diameter of the stem is suitable to the capacity of the cervix; for if you introduce one with too slender a stem it will immediately fall out, or if, on the other hand, it be too thick, the introduction will be a matter of great difficulty, and even if introduced, the instrument will cause so much pain as to render its removal a matter of necessity.

It requires some dexterity to introduce the stem, but a little practice will soon enable you to overcome the difficulty; if the cervix be very narrow it is better to dilate it a little by introducing a single length of a No. 2 or 3 sea-tangle bougie, but the necessity for this does not often occur. I leave this instrument when introduced *in situ* for three or four weeks, unless it should cause irritation or pain, in which case it should of course be removed; but under any circumstances the patient should be examined after a lapse of a month, lest irritation be induced, a result which never occurs if due care be taken. If at the end of a month the desired improvement in the state of the menstrual function has not taken place, it is better to remove the instrument, and re-introduce it after the lapse of a few days. I have several times seen the happiest results follow the use of this instrument in the case of young women who have never menstruated, or in whom the function has been imperfectly performed. It is not so well adapted to the treatment of hospital patients as to those we treat in private: for it is very difficult to keep the former in view for any length of time, or to get them to return after the proper intervals to have the

pessary removed. You saw me introduce one, however, a few days ago, and the case will be an interesting one to watch. The patient is a married woman, æt. thirty-five; menstruation has not appeared at all for the last three years; I cannot detect any symptoms of either constitutional or local disease which can account for this. Medicines having failed to do her good, I have suspended their use; we shall see what the pessary may effect.

There is one form of irregular menstruation which must be classed under the heading of amenorrhœa, for the function is defectively performed. In this form the discharge appears at the regular time, but stops after a day or so, to re-appear, in, perhaps, twenty-four or forty-eight hours—thus coming and going at short intervals. This kind of "interrupted" menstruation, I have noticed several times, in connection with chronic endo-metritis. A very good example of this is afforded in the case of a patient at present under treatment in the pay ward. She is a nurse-tender, and was admitted complaining of severe pain in the back and thigh, which incapacitated her from following her occupation; there is some erosion of the lips of the os; the uterus is heavy and anteverted, and the cervix greatly thickened. Unless in her case we can cure this condition of the uterus, menstruation will not again follow its normal course.

Cases of amenorrhœa depending upon constitutional causes are of more frequent occurrence than those of local origin. You must all be aware that suppression of menstruation, or its appearance as a mere sign, is often an early and ominous symptom in cases of incipient phthisis, and frequently it is the symptom for which we are consulted. Let me here repeat the warning I have so

often given you, when such cases have presented themselves, not to yield to the solicitations of the patient, or of her friends, to attempt to restore the function by the exhibition of stimulating emmenagogues; the attempt would be vain and the result disastrous both to your character and to the patient's health. Females almost invariably look on suppression of menstruation as the cause of their ill health, and will express day after day the certainty they feel that health would be restored if the discharge could be made to re-appear, an assertion often true if only read conversely; the re-appearance of the discharge indicating that health had improved, but not being the cause of that improvement. Thus some women menstruate regularly when resident in certain localities, but never when compelled to leave them. I saw some time since a lady who was quite regular during a two years' residence at Falmouth, though for a long time previous to her going there menstruation had been entirely suppressed. Business matters compelled her to re-visit Ireland, the amenorrhœa soon became habitual; symptoms of phthisis rapidly developed themselves, and she died in a few months of consumption. Need I add that in such cases the lung disease, not the amenorrhœa, is the condition calling for treatment.

All other forms of organic diseases come under the same category, as being frequently the causes of amenorrhœa; but it is not my province to enter on the treatment of these, and the enumeration of them would be tedious. One constitutional disease, however, of which amenorrhœa is a prominent symptom, calls for special notice; I mean anæmia, including under that term chlorosis. In it, as you are aware, the patient presents a sickly, yellowish-

green colour. She complains of pain in the back, of lassitude, and often of headache; nearly always the appetite is bad and the taste depraved; the bowels are constipated, and the tongue generally furred. These cases are unfortunately too common among our town population, especially among those poor women who work hour after hour from early morning till late at night, earning a miserable pittance with the needle. With them we can do but little: country air and a generous diet would soon work wonders for them, but the remedy is beyond their reach. In many, however, some good can be effected by the exhibition of tonics, and especially of iron, a remedy which above all others is here indicated. As constipation is nearly always present, you should combine aloes with it; this greatly enhances its activity; two grains of the sulphate of iron, with a quarter or half a grain of extract of aloes, taken three times a day sometimes acts like a charm.

Another medicine of the highest value is strychnia; five drops of the liquor strychniæ, which is equivalent to the one twenty-fourth of a grain of the alkaloid, gradually increased to ten drops, three times a day, alone or in combination with five grains of the ammonio citrate, or ten drops of the tincture of the perchloride of iron, sometimes produces the most beneficial results, but I think it is more suitable to those cases in which simple debility rather than a chlorotic condition is present. Strychnia, I believe, acts as a powerful stimulus to the ovaries, as well as a general tonic.

When no anæmia is present, and where the indication seems to be rather to stimulate the ovaries and uterus, I have found the combination of five to ten grains of the

hypophosphate of lime, and five drops of the solution of strychnia, productive of much benefit.

I shall allude to but one other constitutional cause of amenorrhœa. It is one of not very infrequent occurrence. I mean a plethoric condition of the system. In such women the complexion is high, the pulse strong; they suffer much from flushing and headache, especially at the time menstruation ought to occur. In such cases active outdoor exercise, a moderately abstemious diet, and the exhibition of the acid saline purgative already recommended in cases of local congestion, will generally produce good results. We should aim at establishing periodicity, and selecting the time in each month when the occurrence of the molimina indicate that menstruation ought to occur, apply two or three leeches to the inside of the thighs or to the verge of the anus; thus relieving the local congestion, and thereby favouring the chance of the natural flow appearing; or, if the patient be married, puncture the cervix and abstract blood directly from the uterus itself.

LECTURE IV.

Dysmenorrhœa—Definition—Spasmodic—Ovarian—Inflammatory—Mechanical—Cause of Pain in—Treatment—Division of Cervix.

INTIMATELY connected with the subject of amenorrhœa, is that of painful menstruation, or dysmenorrhœa, as it is termed; a subject the pathology of which is still far from being clearly understood.

Menstruation, like all the other functions of the body, to be perfectly normal should be painless; but, in point of fact, the majority of women suffer more or less pain and discomfort before the appearance of, or during the flow, while in many the sufferings are very severe. In dysmenorrhœa the pain frequently commences some hours before the discharge appears, increasing in severity as the period approaches, sometimes becoming so intense that the patient cannot move about, but is compelled to lie down, and even to roll in agony on the bed; occasionally, too, nausea and even vomiting occur. In due time the discharge appears, and then in some instances relief is obtained; sometimes, however, the pain lasts during the whole period, or becomes paroxysmal; again, not unfrequently clots, and sometimes shreds are expelled *per vaginam*, and instances are recorded in which large pieces of membrane, and even a perfect cast of the entire cavity of the uterus, have thus come away during attacks of

painful menstruation. This dysmenorrhœal membrane is an exfoliation of the mucous membrane lining the cavity of the uterus, which is cast off as a perfect sac, instead of being detached in shreds. Its expulsion has on some occasions given rise to the suspicion of pregnancy, a suspicion which a careful examination of the bag will speedily dissipate, as of course all trace of an ovum will be wanting.

Authors differ greatly as to the nature of the causes producing painful menstruation; no theory has of late years been so prominently brought forward, or so warmly advocated, as the mechanical one. Mechanical dysmenorrhœa, and obstructive dysmenorrhœa, are terms you will hear constantly made use of. Now, while admitting that mechanical obstruction to the exit of the menstrual discharge occurs, I doubt that it is as frequently a cause of painful menstruation as is generally stated; nor can I admit the correctness of the axiom laid down by Dr. Marion Sims, "that there can be no dysmenorrhœa properly speaking unless there be some mechanical obstacle to the egress of the flow, at some point between the os internum and the os externum, or throughout the whole cervical canal."* Such an unqualified assertion, made by a writer of such acknowledged weight, is calculated to produce much mischief, by inducing surgeons to have recourse to operative interference for the relief of dysmenorrhœa, which in many cases may be wholly unnecessary.

For practical purposes I think it sufficient to class cases of dysmenorrhœa under four heads: namely, 1st, Spasmodic; 2nd, Ovarian; 3rd, Inflammatory; and, 4th,

* *Uterine Surgery*, p. 143.

Mechanical dysmenorrhœa. In addition to these four classes we meet with cases in which pain, sometimes of a most acute character, is experienced at each menstrual period, as the result of chronic inflammation of the ovary, of partial or complete occlusion of the Fallopian tubes, which frequently occurs after attacks of Pelvic cellulitis, and lastly of atresia of the vagina, but I must postpone the consideration of these important affections for the present. I shall have to refer to them again, when discussing the propriety of performing the operation of oöphorectomy.

In spasmodic dysmenorrhœa the pain, as in most of the other forms, precedes the appearance of the discharge. In the majority of cases it is met with, either in delicate girls of feeble constitution, and leucophlegmatic temperament; or again, in women of full habit, especially if they lead an inactive life. I have pointed out to you from time to time, numerous examples of this form of painful menstruation in sempstresses, and in poorly-fed over-worked servants. In these cases the flow is in general scanty, and its appearance does not bring any marked relief, the pain continuing more or less during the whole of the period. It is not, however, always equally severe, but is paroxysmal, being less so while the patient is warm, but becoming aggravated by the least exposure to cold. This form of dysmenorrhœa, is by some writers described as neuralgic; its true nature, however, is very obscure, but its attacks can almost with certainty be cut short by the administration of sedatives and anti-spasmodics; and these are the remedies you should prescribe. I generally give a pill containing half a grain of opium, one of extract of Indian hemp, and two of camphor, every three or four hours, till

relief is obtained, or if for any reason opium is objectionable, I substitute for it two grains of the extract of conium. In some cases the hypodermic injection of a solution of morphia and atropia* affords prompt relief when opium administered by the mouth or by the rectum has failed, but it should not be had recourse to unless the sufferings be very great.

When the attacks have become habitual, and the patient is consequently obliged to have recourse regularly to the use of medicines to obtain relief, I usually direct her to have by her, ready for use, the sedative pills I have just mentioned, or a mixture containing two drachms of tincture of Indian hemp, two drachms of the liquor opii sedativus, two drachms of the compound tincture of chloroform, and water sufficient to make a six-ounce mixture; of this she should take a tablespoonful every three hours. Sometimes five grains of lupuline taken in the form of a pill, thrice a day, from the time the first symptom of the approaching paroxysm is perceived, will stave off the attack altogether. The patient should also take a warm hip-bath every night at bedtime, for a week before the expected recurrence of the menstrual period. This treatment is, however, only palliative, and as the cause generally lies in some fault of the constitution, or system at large, our object should be to correct that condition by treatment carried out during the interval between the menstrual periods. If you can detect symptoms of imperfect digestion, their removal is sometimes followed by

* The following is the formula I use in such cases: Acetate of morphia, four grains; solution of atropia, four drops; water, two drachms; —ten drops of this contain one-third of a grain of morphia, the largest dose which should be administered on the first occasion. It is safer to inject a small quantity at first, and repeat the dose if necessary.

relief of the dysmenorrhœa; while if the patient be anæmic, the exhibition of iron, or sometimes of arsenic, is of the greatest use. I am convinced, however, that many cases of so called spasmodic dysmenorrhœa are due to congestion of the lining membrane of the uterus, and that this is specially the case in women of full habit, who lead indolent lives, and in whom great benefit follows from the adoption of more abstemious diet, and more active habits, together with occasional use of saline purgatives.

(2.) In ovarian dysmenorrhœa, the ovaries are engaged more than the uterus, though the latter organ frequently participates in the abnormal congestion. In it the menstrual period is generally preceded by pain in the ovarian regions, and by a feeling of tension, often amounting to acute pain, in the mammæ, and occasionally by headache. The attacks may sometimes be averted by the use of saline purgatives taken immediately before their anticipated return, and if the case be of any standing, by the administration of the bromide of potassium or of ammonium, in thirty grain doses, three times a day for a week before each menstrual period. Warm hip baths at bedtime should be had recourse to. This treatment, or that of a similar character, directed to relieve or prevent the ovarian congestion, will generally prove successful.

(3.) Inflammatory dysmenorrhœa is a common affection, and the sufferings due to it are often very acute; the pain, however, is generally, although not always, relieved by the appearance of the menstrual flow; a fact capable of easy explanation, for the loss of blood relieves the congestion which exists, just as it would a similar condi-

tion in any other part of the body. In this form, the uterus, or at least its lining membrane is in a state of chronic inflammation; sometimes also there is associated with it an unhealthy condition of the cervical canal; sexual intercourse is often painful in consequence of extreme tenderness of the cervix, a not uncommon result of chronic inflammation of the womb. In the spasmodic form of dysmenorrhœa the pain is nearly always referred to the back, or to the lower portion of the abdomen. In inflammatory dysmenorrhœa, on the other hand, it is often most intense above the pubes, and is sometimes felt along the edge of the false ribs, generally on the left side, shooting up to the shoulder, and down to the ovary of that side.

Now to what is all this suffering due? Are we to believe, as is held by many, that it is caused by retention of the menstrual discharge and consequent distension of the uterus by fluid? a result supposed to be due to the closure of the os internum by the swelling of the mucous membrane, which occurs in consequence of the venous congestion always present at the commencement of each menstrual period. That this may be a cause of painful menstruation I admit, but that it is a very frequent one, I much doubt, and when this is so, it will nearly invariably be found to occur in cases where well marked flexion of the uterus existed previously, the patients being generally sterile, while true inflammatory dysmenorrhœa is frequently met with in women who have borne children, and in whom the cervical canal is straight and patulous. The history of the following case is very instructive, and bears on the point under consideration. The patient, a lady, aged twenty-eight, who had borne five children, the

youngest but fifteen months old, came under my care some time ago; her sufferings dated back several years, during which time she had been twice confined. For two or three days before the menstrual period, which always recurred regularly, she suffered from pain over the uterus, shooting up under the left breast and round to the back. This was very severe during the first day of the flow, then it gradually subsided, and she enjoyed comparative ease for a time. Sexual intercourse had been for a long time attended with pain. She did not complain of the introduction of the finger into the vagina, but the moment it touched the cervix, she cried out, stating, however, that the pain this caused was quite different from that experienced at the menstrual period. The sound passed with the greatest facility through the os internum, but though there was no obstruction to its passage, the moment it reached that point, she suffered the greatest agony; and while previous to the examination she had been free from discomfort, she, at this instant, experienced a severe paroxysm of pain, similar to that from which she suffered so much during the menstrual period.

Now, this case throws some light on at least one variety of inflammatory dysmenorrhœa. No obstruction existed here, yet menstruation was excessively painful, and paroxysms of pain, exactly similar to that suffered during menstruation, were caused by the passage of the sound through the os internum. I believe that this patient was the subject of chronic endometritis; that the whole of the cavity of the uterus, and the os internum specially, was engaged; that when the uterus became congested, as it does at each monthly period, this condition being neces-

sarily aggravated, caused the acute pain from which she suffered, and that this was relieved, when the flow set in, as other congestions are relieved, by local depletion. I think further, that the sufferings experienced by many women at each catamenial period, are not mechanical, but are due to congestion of the lining membrane of the uterus, the congestion occurring at the menstrual period, rendering acutely sensitive a part which, though in an unhealthy state, was not before the seat of pain. It is quite possible, and indeed very probable, that the swelling and thickening of the mucous membrane, which takes place when this congestion occurs, may in numerous cases be sufficient to partially close the os internum, and thus actually oppose an obstruction to the exit of the menstrual discharge; but I cannot concur in the commonly held idea, that it is the general cause of painful menstruation, or agree with Dr. Marion Sims, who says "that if there be much pain either preceding its eruption, or during the flow, there will generally be a physical condition to account for it, and this will be of a nature to obstruct mechanically the egress of the fluid from the cavity of the womb. The obstruction may be the result of inflammation and attendant turgescence of the cervical mucous membrane, whereby this canal becomes narrowed merely by the tumefaction of its lining coat; but by far the most frequent cause of obstruction is purely anatomical and mechanical."

Now in the case I have just alluded to, the canal of the cervix was so patulous that I do not think it possible the lining membrane could swell to such an extent as to close the passage; and if the patient's sufferings were in this case due to mechanical causes, why should the passage of

the sound reproduce so exactly the pain of the menstrual period? In my opinion it was caused by the mucous membrane being in an unhealthy condition, and that therefore anything which increased the existing irritation, whether that were the passage of the sound, or the congestion consequent on the approach of the menstrual period, equally caused pain; in fine, while admitting the mechanical theory as serving to explain the symptoms presented in a certain proportion of cases of dysmenorrhœa, I deny that it does so in the majority.

The occurrence of congestion and inflammation causing dysmenorrhœa is of course well known; and in the foregoing remarks I merely desire to point out that in my opinion the seat of pain is in many cases at, or immediately beyond, the junction of the body with the cervix uteri; that the cause of the pain in many instances is endometritis, and that is not necessarily due to any actual obstruction to the exit of the menstrual discharge. I may add that in the case just alluded to, local depletion and the subsequent application of the fuming nitric acid, perfectly cured the dysmenorrhœa.

The treatment of inflammatory dysmenorrhœa includes three indications.

1st. Removal of all causes keeping up the existing irritation. Foremost among these is the abstinence from sexual intercourse; for not only does the act itself frequently cause pain, and therefore must be injurious, but the occurrence of conception is to be specially avoided, for till the patient is cured, abortion is very liable to occur, to be followed by aggravation of her symptoms. Riding on horseback, fatiguing walks, or even household occupations which necessitate much standing, should be

given up, while the occurrence of constipation is to be carefully guarded against.

2nd. Relief of the uterine congestion. By local depletion, either by means of leeches applied before the menstrual period, or by puncturing the cervix uteri and encouraging the bleeding: this latter treatment you have seen me carry out repeatedly with considerable benefit. It is not so suitable in the cases of young unmarried girls, as it necessitates the use of the speculum. In them leeches may be applied to the inside of the thighs, or to the verge of the anus; mild purgatives should also be administered from time to time. When by these means you have succeeded in relieving the congestion of the uterus, considerable benefit will be derived from blisters applied over the sacrum, or to the abdomen a little above the pubes.

3rd. Establishing a healthy condition in the uterine mucous membrane. If the case be of long standing, and that the symptoms though relieved, do not entirely disappear, showing that a certain amount of endometritis still exists, I recommend you to brush over the whole interior of the uterus with carbolic acid, or, in severe cases, with strong nitric acid. I shall on a future occasion explain to you the mode of carrying out this treatment.*

I have met with but little benefit from the exhibition of medicines in inflammatory dysmenorrhœa. Where ovarian excitement exists, bromide of potassium in twenty or thirty grain doses, taken three times a day, combined with a mild purgative should the bowels be confined, does good; the bichloride of mercury in small doses, con-

* See Lecture XVII.

tinued for a considerable time, has been recommended by several writers ; for myself I must say it has disappointed my expectations. Purgatives, especially the saline, seem to me the only medicines capable of producing real benefit; these, to do good, should be exhibited just before the menstrual period.

4th. It remains for us to consider those forms of dysmenorrhœa which depend on mechanical causes. Of these, there are three varieties ; namely, those in which the cervical canal is so flexed at its junction with the body of the uterus as to obstruct the escape of the menstrual discharge; secondly, those in which inflammation or congestion of the lining membrane exists to such an extent as to cause temporary closure of the canal, or of the os internum ; and, thirdly, those in whom from some congenital malformation, or acquired cause, the cervical canal throughout its entire length, is permanently narrow and constricted. To this last may be added those cases in which fibrous tumours are met in connection with, and often causing dysmenorrhœa.

Painful menstruation is frequently met with in women in whom the uterus is flexed; but though flexions of the uterus, and specially anteflexion, may, and certainly sometimes do, interfere with the exit of the menstrual discharge, and thereby induce pain, this is rarely the case unless the flexion be complicated by the occurrence of chronic inflammation of the endometrium, or by the presence of a fibroid. In the few cases of dysmenorrhœa which depend on flexions of the uterus, and in which no complication exists, we are justified in attempting to straighten the uterus or support the fundus by means of pessaries, before having recourse to surgical treatment, and some-

times good results follow, but pessaries seldom afford more than temporary relief, and are often useless.

Dysmenorrhœa is of common occurrence in women who, although married, are sterile, and in whom flexions of the uterus exist; menstruation prior to marriage having been a painless function. In the majority of these cases I believe the flexion to have been congenital, and that marriage was to them a positive evil; producing congestion in a malformed organ, and giving rise in turn to a long train of distressing symptoms.* In these cases the uterus is generally anteflected, and division of the cervix becomes essential for their successful treatment.

I have already so fully explained my views as to the chief cause of the dysmenorrhœa in cases of inflammatory swelling of the lining membrane of the uterus, that I have but to repeat that, though not in my opinion of frequent occurrence, cases are met with in which the os internum, or some portion of the cervical canal, becomes so narrowed in consequence of the tumefaction of the parts, as to present a mechanical impediment to the discharge of the menses. In such cases, if the treatment I have already recommended fail, I have no hesitation in having recourse to surgical measures with the view of procuring relief; indeed it is obvious that an operation which divides the cervix so freely as does that introduced by Sir James Simpson must be calculated to give permanent relief to the congested organ. I only repeat that the operation should not be had recourse to till other means have been tried. I may here take the opportunity of saying once for all, that as a rule I object to the practice of dilating the cervix in these cases of dysmenorrhœa. Severe inflammation, and even

* See also Lecture X.

death, are recorded as having followed such an attempt; moreover, this mode of treatment, whether carried out by means of metallic dilators or by sea-tangle bougies, is in other respects objectionable. It is painful, and most uncertain in its results; for the cervix after a time invariably contracts, and the patient relapses into her former unsatisfactory state.

Several instruments have been devised for the purpose of dilating the cervix. Of these Hagar's vulcanite bougies,* which very gradually increase in diameter, are the best, but for the reasons I have just given I seldom dilate the cervix in the class of cases I am speaking of, the only exception being that of a married woman in whom no symptoms of endometritis exist. In such, if dilatation by means of Hagar's bougies be practised immediately before a menstrual period, the chance of pregnancy occurring is increased, and if it occur, the dysmenorrhœa will be cured, not, however, as a direct result of the dilatation, for, had not pregnancy occurred, the patient would soon have relapsed into her former condition, but, indirectly, by facilitating the occurrence of pregnancy.

A contracted os, looking almost like a pin hole, and leading to a narrow cervical canal, is not unfrequently seen; this condition is almost invariably associated with sterility, and very often with dysmenorrhœa also. You saw last week a very good example of this in the case of the young woman who sought relief for the latter affection. Menstruation is with her both painful and scanty; the os uteri is so small as hardly to admit the point of a probe; and there can be no doubt but that the cervical

* See Lecture VI.

canal is unduly contracted. I think such cases as hers are fair subjects for operation, for no other treatment will be productive of permanent benefit; but beware of holding out hopes to your patient, that by submitting to the operation she will gain more than relief from the suffering caused by the dysmenorrhœa. When the operation has been performed simply for the cure of sterility, it has often resulted in disappointment; in other words, division of the cervix is, in my opinion, a legitimate proceeding, if performed with the view of curing dysmenorrhœa, specially as is often the case if uterine catarrh co-exists with it; but it is seldom justified in cases of simple sterility, where neither dysmenorrhœa or uterine catarrh exist; because the narrow os and contracted cervical canal are not the cause of the sterility, but merely an index of some congenital condition or defect in the uterus itself which hinders conception. What that defective condition may be we may not be able always to decide.

But the patient I have just alluded to is averse to undergoing any operation, and I have therefore introduced a slender and short-stemmed galvanic pessary. She has worn it for three weeks, and it has already been productive of benefit; for she tells you, that during the menstrual period which has just passed, she was free from pain, and that the flow continued for five instead of two days.* You saw that I had some difficulty in introducing it, mainly because the uterus is slightly anteflected. I had accordingly to expose the os with the duck-bill speculum, then to seize and draw down the cervix with a tenaculum,

* This patient continued for some time to derive relief from wearing the pessary, but on removing it all her bad symptoms returned; therefore, after the lapse of many months, I decided on dividing the cervix. The operation proved successful.

and while the womb was thus fixed, slip in the stem of the pessary. You must always adopt this method when difficulty occurs in the introduction of these instruments. I have known good to result in such cases as the foregoing from wearing a stem pessary, and it sometimes may be tried before advising that an operation be performed.

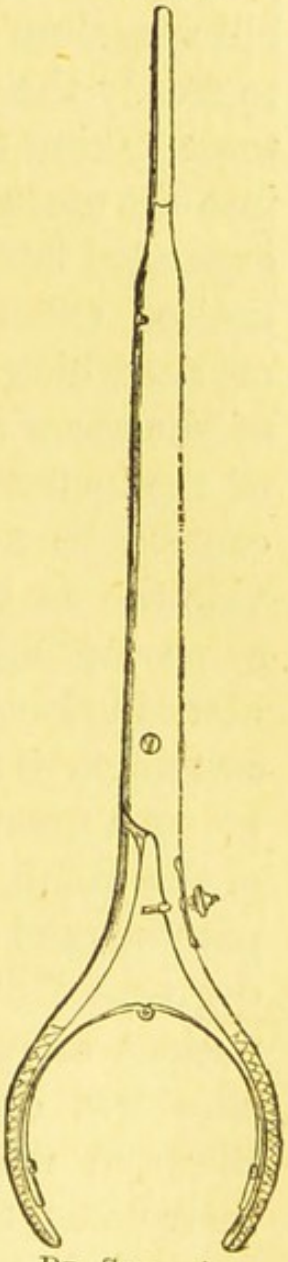
The use of the stem pessary is also occasionally permissible where painful menstruation exists, with either retroflexion, or anteflexion of the uterus; for the stem not only renders the canal patulous, but, by straightening the cervix, favours the escape of the discharge. Unfortunately a certain amount of endometritis commonly exists in such cases, and this frequently prevents the stem being tolerated. To meet this difficulty, Dr. Greenhalgh has invented a soft, flexible stem pessary, made of India-rubber, that can sometimes be worn with comfort when a rigid one could not be borne.

But a large percentage of the cases we meet with in practice derive no permanent benefit whatever from any form of palliative treatment, nor can any favourable result be anticipated, because some portion of the cervical canal is contracted. In some patients the cervix is conical, and terminates in a very small circular os uteri, "the pinhole" os uteri, as it is termed, the cervical canal being generally much contracted. Dr. Barnes is of opinion, that in such cases the obstruction is mainly due to the small size of the os itself, and in this I agree with him; he consequently rests satisfied with an operation which divides the cervix, but does not divide the os internum.

We are indebted for the introduction of the operation of division of the cervix to Sir J. Simpson, who for a time

practised it very frequently, though I believe that before his death his views on this point were considerably modified, and that he did not perform it nearly so often as he had done at an earlier period of his career. His method of performing the operation was by passing an instrument termed a *bistourie caché* through the canal of the cervix, and within the os internum. It contained but one blade, which, when the instrument had penetrated to the requisite depth, was made to protrude, the extent of the protrusion being regulated by a screw. The incision commenced at the os internum, and as the instrument was withdrawn it incised gradually and more deeply the substance of the cervix, until it divided the vaginal portion quite through; the instrument had then to be turned, re-introduced, and the other side divided in like manner. This re-introduction is very objectionable, and consequently various knives (metrotomes) have been invented with the view of obviating it. Of these, those proposed by Dr. Savage and Dr. Greenhalgh are probably the best. I generally use the former (Fig. 6). It is furnished with two blades, the cutting edge of each being directed outwards; and as the back of each blade, when the instrument is closed, projects beyond the cutting edge of its fellow, which it thus overlaps, its introduction into the cervix can be safely effected. If the os be very small, it is sometimes necessary to dilate the cervical canal a little before this step can be effected; one piece of

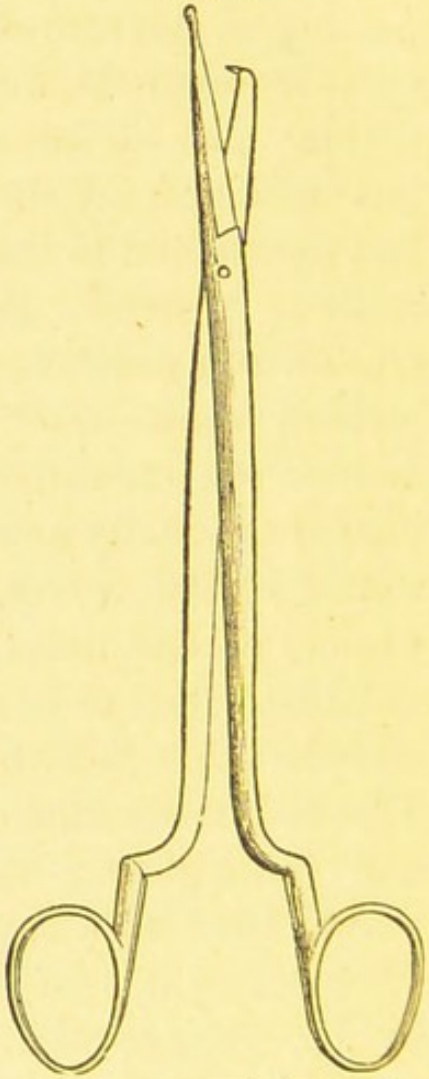
Fig. 6.



Dr. Savage's Metrotome.

sea-tangle will however open the canal sufficiently for the purpose. Having exposed the os by means of the duck-bill speculum and seized one lip with a tenaculum, so as to steady the uterus, you proceed to introduce the metrotome, taking care that it does not pass unnecessarily far into the uterus; the blades are then expanded laterally, and only to the limited extent previously decided on, and which is regulated by means of the screw affixed to the handle of the instrument; for if this precaution be neglected you will divide the os internum too deeply; a proceeding which may cause alarming hæmorrhage, and is nearly certain to be followed subsequently by such great eversion of the lips of the womb, as to leave the neck patulous and gaping to an excessive degree. This condition exists in a patient at present under my care, who was operated on by Sir J. Simpson many years ago. The metrotome, the blades being kept expanded, is now withdrawn; I think it better not to divide the vaginal portion of the cervix with them, but to complete this part of the operation subsequently by means of Kuchenmeister's Scissors, one of the blades of which is longer than the other, and probe pointed; the shorter one is furnished with a hook at its extremity, which, becoming embedded in the cervix, prevents the scissors slipping out while cutting through the tough tissue. The probe-

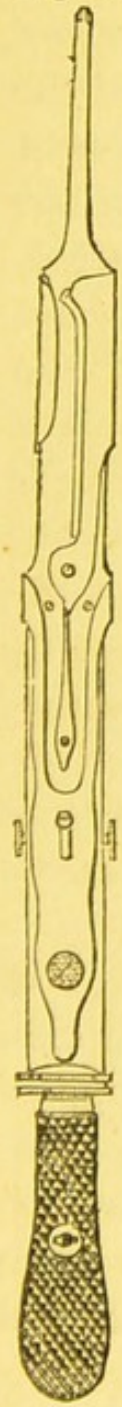
Fig 7.



Kuchenmeister's Scissors.

pointed extremity of the larger blade, is to be introduced into the cervical canal and through the os internum, the other blade being applied to the vaginal portion of the cervix; the part included between them is then to be divided by the closure of the blades. When one side of the cervix has been divided, the blades have to be turned, and the other side divided in a similar manner. My reasons for recommending that the operation be completed in the manner described are, that to enable the blades of the metrotome to cut through the vaginal portion of the cervix, they must be expanded to a degree which, without great care, may permit of their incising the os internum to a dangerous extent; while even when so expanded, a sufficient division of the lower segment of the cervix is not always made, and, moreover, the risk of hæmorrhage occurring is much lessened, if not indeed altogether avoided, by following the method I advise.

Fig. 8.



Dr. Greenhalgh's Metrotome, Closed.

Dr. Greenhalgh's metrotome (Fig. 8) is preferred by many. It was, I believe, the first bi-laterally cutting metrotome invented, and is very ingeniously constructed. By it the entire operation is completed at once. It is easy of introduction, cuts laterally outwards, and the extent of the incision can be regulated with great nicety; but I have now altogether given up using any metrotome.

Fig. 9.

Blades Expanded.

For many years I performed the operation as described, but a more extended experience has convinced me of the correctness of the views held by Dr. Barnes; namely, that in the vast majority of cases the obstruction is situated at or near the os externum, and that therefore division of the os internum is unnecessary. Moreover, I am of opinion that if the os internum be divided the incision nearly always unites, and that no permanent result is obtained. I therefore now always perform the operation of division of cervix in the manner recommended by Dr. Marion Sims; I divide first one, and then the other side, of the vaginal portion of the cervix with Kuchenmeister's scissors, and then if a deeper incision be necessary, cut from within outwards with a narrow bladed knife, the cervix being of course exposed by means of the duck-bill speculum, and the anterior lip of os uteri transfixed and drawn down by means of a tenaculum. By performing the operation in this way you can with great accuracy divide the cervix to the exact extent you wish. Whereas if the metrotome be used, the depth of the incision is in a great measure a matter of chance.

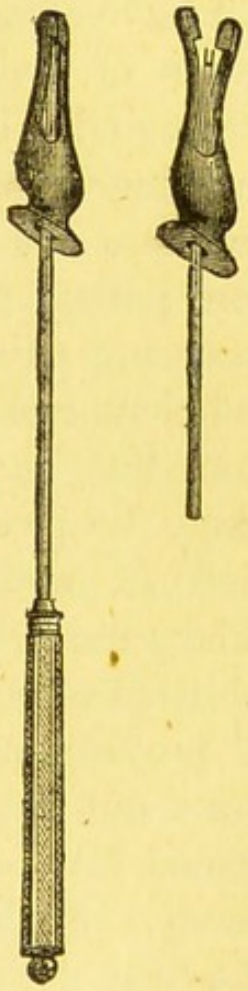
When dysmenorrhœa occurs in sterile women or in virgins in whom well-marked anteflexion exists, I divide the posterior wall only, but I shall refer to this again.

The operation of dividing the cervix uteri is not absolutely devoid of danger, and I have known profuse hæmorrhage to occur both at the time and also some hours subsequently. Cellulitis is also liable to occur if care be not taken.

You should be always prepared for the possibility of hæmorrhage occurring, and be provided with a solution of

the perchloride of iron in glycerine. With this I was formerly in the habit of invariably brushing over the divided surface. I have now given up the practice, because I find if the operation be performed in the manner I advocate, there is little, if any, risk of hæmorrhage; but should hæmorrhage occur, a pledget of cotton saturated with it should be inserted into the cervix, and the vagina then plugged. There is always a great tendency in the incisions to unite; to prevent this, Dr. Greenhalgh advises the introduction into the cervix of an expanding spring stem (Fig. 10). Dr. Graily Hewitt recommends, with the view of preventing contraction, and at the same time of keeping the canal straight, that the patient wear for some time subsequently an ebony stem pessary, a proceeding which in some cases may be useful. But in general these are best dispensed with. I prefer, in the few cases in which I find anything of the kind necessary, to introduce one of Greenhalgh's flexible stem pessaries, but, as a rule, I content myself with passing the uterine sound almost daily for at least two or three weeks subsequent to the operation, and at intervals for some time longer. I find this to be sufficient to prevent the divided surfaces from uniting.

Fig. 10.



Dr. Greenhalgh's Expanding Stem.

Although this operation is a trifling one, and generally perfectly safe, attacks of pelvic cellulitis are very liable to occur, if the patient move about or expose herself to

cold. I therefore invariably keep them in bed for several days, sometimes longer; indeed it is far better to err on the safe side, and for a fortnight to be very cautious about exposure to cold, and the patient should always be kept under observation for several weeks subsequently.

I have already warned you against performing the operation of dividing the cervix uteri unnecessarily, but I feel equally bound to impress on you the necessity of carrying it out whenever suitable cases occur in your practice. It is not merely that by doing so you afford your patient the best chance of escaping from constantly recurring pain, although that alone in many cases is a sufficient reason for having recourse to so safe an operation, but, moreover, long continued dysmenorrhœa is likely to produce very grave consequences. Sterility, metritis, and endometritis terminating in permanent enlargement of the uterus, and perhaps giving rise, in addition to other distressing symptoms, to the occurrence of profuse menorrhagia, may follow, until the patient, worn out by long-continued suffering, becomes a confirmed invalid, or sinks into a state of morose despondency. Such most likely would have been the result in the case of the young girl, M. W., on whom you saw me recently operate. Her sufferings, for several days at each menstrual period, were extreme; she would roll on the floor in agony, and this has been the case since the first appearance of the catamenia, three years previously. On examining her I found the cervix uteri to be abnormally small, and apparently imperfectly developed. Much difficulty was experienced in introducing the sound, so contracted was the cervical canal; and indeed it required the exercise of some skill to detect the os

uteri by the touch, it was so exceedingly small. The result of the operation has been very satisfactory, for the girl has ever since enjoyed freedom from the excruciating pain she had previously periodically suffered. I should add that I had tried the effect of a stem pessary with her before having recourse to the operation, but she could not tolerate its presence.

I have hitherto spoken of the operation of division of the cervix with reference to those cases only in which the cervical canal though contracted is straight. I recommend a different operation when the uterus is anteflected, namely, the division of the posterior wall of the cervix only. This procedure, in the class of cases now under consideration, is strongly urged by Dr. Marion Sims, of New York, and after an extended trial I unhesitatingly confirm his experience of its being far the most satisfactory in its results. In performing this operation the proceedings are varied. The cervix being exposed, and the anterior lip fixed by means of a tenaculum, the probe-pointed blade of Kuchenmeister's scissors (Fig. 7) is introduced into the cervical canal, and the posterior wall is divided up to the reflexion of the vagina. The os internum may then be divided to a limited extent, if it be deemed necessary, by a knife with a very narrow blade, the parts being kept from healing, as in the other operation, by the daily introduction of the uterine sound. I cannot speak too highly of this operation in cases of endometritis, occurring in nulliparous women in whom congenital anteflection exists, giving rise, as is nearly invariably the case, to dysmenorrhœa; but I shall have to recur to this subject when speaking of the treatment of endometritis.

LECTURE V.

Menorrhagia—Definition—Cause of—Constitutional and Local—Subinvolution—Treatment of—Uterine Porte-caustique—Plugging of Vagina.

I PROPOSE to-day, gentlemen, to draw your attention to the subject of menorrhagia; one of the greatest importance, both on account of its frequency and of the serious consequences which follow its occurrence.

The term "*Menorrhagia*," strictly speaking, means profuse menstruation; the ordinary menstrual period being prolonged, or the quantity of blood lost during a menstrual period of average duration being in excess of what is normal. In general both these conditions are present, the period being prolonged, and the quantity of blood lost being excessive; but we not unfrequently meet with cases in which a discharge of blood takes place from the uterus during the interval between the menstrual periods; to such attacks of hæmorrhage the term "*Metrorrhagia*" is by some applied.

Let me first of all impress on you that menorrhagia is not a disease; it is only a symptom of a diseased condition, whether it be of the system at large, or of the organs of generation only. It is therefore incumbent on you, in dealing with every case of menorrhagia which may come under your observation, to endeavour to determine, before

you attempt to treat it, on what that symptom depends. I know of no affection in the treatment of which professional character is so frequently lost, from want of due care in attending to this important point.

Thus, within the last few days I was consulted by a lady who for three years had been the subject of profuse menorrhagia, during the whole of which period she had been under the care of a surgeon in extensive practice. He had prescribed iron and astringents in various forms without benefit, but he never once made, or even suggested, a vaginal examination. I found that the menorrhagia depended on the presence of a large intra-uterine polypus; but the discovery of the cause was in this case made too late. She sank from sheer exhaustion, and died before the polypus could be removed; had the diagnosis been made but a few months earlier, a valuable life would have been saved.

Now the causes on which *Menorrhagia* may depend are twofold—constitutional and local. I shall speak briefly of the former class first, and subsequently enter at length into the consideration of the latter, as being those which are more immediately within the province of the obstetric physician. The general constitutional causes which predispose to menorrhagia are not very numerous, nor is their influence very distinctly marked. The following are the most common:—

(1.) Debility arising from any cause, more especially when the result of prolonged lactation, is, I think, the constitutional cause on which menorrhagia most frequently depends. In such cases the constitution often suffers seriously. Thus a delicate woman continues to nurse, although menstruation has re-appeared, and the

patient, weakened by the double drain, rapidly loses health and strength. In such cases, if nursing be given up altogether and tonics administered, of which strychnia alone or combined with iron, is generally the most useful, a rapid improvement in the general health, and a marked diminution in the quantity lost at each monthly period, often follows. Five grains of the ammonia citrate of iron, with five drops of the liquor strychnia, and three of the solution of arsenic, taken after meals, is an excellent formula. A wineglassful of water should be added to each dose so as to dilute the iron largely.

(2.) Profuse menstruation is sometimes seen in young women of full habit, but of lymphatic temperament. I have met with several well-marked instances of this; in one especially the tendency to menorrhagia was so great, and so difficult to restrain, that on more than one occasion I feared that as a last resource, I should be compelled to plug the vagina. This patient was quite a young girl, who looked the picture of health. In her case, the only remedy which seemed to exert any decided influence in checking the great loss was the application of Dr. Chapman's hot water bags to the spine—a mode of treatment well worthy of a trial, of course in addition to constitutional treatment.

(3.) Again, as age advances and the climacteric period of life approaches, women are liable to menorrhagia, sometimes of a very aggravated character. Not unfrequently some months elapse without the normal discharge appearing, and then it comes on so profusely as to give rise to the suspicion that pregnancy had existed and had terminated by abortion. The same train of symptoms is not very unfrequently met with in recently

married women; from the non-appearance of the catamenia at the regular period, they naturally believe themselves pregnant, till, after the lapse of some weeks, they are undeceived by the return of menstruation in an aggravated form; in both cases, the cause is probably the same —namely, temporary congestion of the uterus, and, probably, of the ovaries. The administration of mild saline purgatives, and in the former class of cases, if the attacks recur, the exhibition of ergot and strychnia will generally check the excessive loss, or prevent its recurrence.

(4.) Disease of the heart is sometimes attended by menorrhagia. This evidently depends on congestion, the results of the retardation of the return of the blood to the right side of the heart, and consequently the loss of blood in these cases seems to give temporary relief. A good example of menorrhagia depending on this cause was seen in the case of a woman, long under observation in this hospital, who for years laboured under mitral obstruction, and in whom the attacks of profuse menstruation sometimes assumed an alarming aspect.

(5.) Analogous in nature to the last mentioned class, are those cases which depend on chronic hepatic disease, or hepatic congestion. However, as alluded to in another lecture, hepatic congestion may cause a diminution, rather than an increased flow, of the menstrual discharge.

(6.) Menorrhagia, too, is met in connection with that form of renal mischief known as Bright's disease, due to the blood being in this disease deprived of its albumen, and consequently in a condition favourable to exudation through the walls of the capillaries; but all these affections fall within the province of my colleagues rather than of mine, and I must therefore leave you to learn

from them the mode in which menorrhagia depending on these causes should be treated.

The local conditions causing profuse menstruation are numerous and very important; they are—

1. Subinvolution of the uterus.
2. Granular erosion of the os and cervix uteri.
3. Inflammation and congestion of the membrane lining the cavity of the uterus, and a granular condition of that membrane.
4. Retention within the uterus of a portion of the placenta or of the fœtal membranes.
5. Congestion of the uterus and ovaries.
6. Polypus of the uterus.
7. Fibrous tumours of the uterus.
8. Inversion of the uterus.

This is a long list, and yet the lesions enumerated in it are all, with the exception of inversion, of frequent occurrence, and all frequently cause menorrhagia. Indeed I think we should add cancer to the list. Some authors, no doubt, object to cancer being considered as a cause of profuse menstruation, and in the majority of the cases of this terrible disease, the discharge to which it sooner or later gives origin, is not in any way connected with menstruation, and therefore to term it menorrhagia is incorrect; but in other cases, especially in those of epithelioma, menstruation is, in the first instance, augmented, and the term is then correctly applied. I think therefore that it is better to speak of cancer as a possible cause of menorrhagia. I shall now proceed to call your attention to each of the foregoing conditions somewhat more in detail.

Subinvolution of the uterus is the primary cause of very many of the ailments from which women suffer. In

the first instance, it is frequently the cause of profuse menstruation; that this should be so is easily understood, for not only is the quantity of blood supplied to the uterus unduly great when this condition exists, but also the mucous membrane lining its cavity becomes frequently unhealthy; then it is the most common of all the causes that produce retroflexion of the uterus, and, at a later date, it predisposes to, if it be not the actual cause of, chronic metritis and hypertrophy of the uterus, while it markedly favours the occurrence of granular erosion of the cervix and of endometritis. I must, therefore, dwell at some length on so important a subject.

When we speak of subinvolution of the uterus, we mean that the process by which the womb regains its original size subsequent to delivery, or abortion, has been from some cause retarded or arrested; this process has been termed involution, and when it is incomplete we talk of the uterus as being in a condition of imperfect involution, or more commonly, of subinvolution.

The involution of the uterus should be completed within a few weeks after the date of delivery. It is one of the most remarkable phenomena which occur in the human body. The uterus, immediately before the expulsion of the fœtus, measures about fourteen inches in length, and weighs twenty-five ounces, often, indeed, even more. Immediately after, its size is diminished to considerably less than one-half its former bulk, its weight being proportionally reduced; while, if the process proceed regularly and unchecked by any cause, the womb will, after the lapse of five or six weeks, be less than three inches in length, and weigh but two ounces. The first step in this process is, that the supply of blood to the uterus is

checked, and the circulation of blood through that organ interrupted, by the contraction of the muscle fibres of the uterus, a process which commences the moment labour terminates, and goes on in a more or less painless manner for some days subsequently; while, at the same time fatty degeneration and disintegration of tissue, on the one hand, and absorption on the other, rapidly complete the work of reducing the uterus to its normal size, and restoring its compactness of tissue.

But you can easily understand that numerous causes may interrupt this process; thus, in weakly, debilitated women, the uterine contractions may not be sufficiently powerful to check the blood supply, consequently the nutrition of the organ may continue almost as active as previous to delivery, and accordingly the uterus will remain in a state which may be considered as one of permanent congestion terminating in hypertrophy. Instances of this are very numerous. A similar result may follow in a healthy muscular woman if she leave the recumbent posture too soon after delivery, and, as many of the lower orders do, return to her ordinary occupations long before the uterus has regained its normal size. Again, pelvic inflammation in any of its varieties is a common cause, interrupting and often arresting the involution of the uterus. Subinvolution may follow on abortion, even when it occurs in the early months of pregnancy, a fact you should not overlook; indeed, my experience leads me to think it is more likely to occur after abortion than after labour at the full term.

The reason why this should be so is easily understood. At the termination of the full term of gestation the uterus is prepared to undergo a process of fatty degenera-

tion and absorption; in fact, this process seems in some cases to commence concurrently with, if not actually prior to, the first symptoms of labour, and it is the natural termination to parturition, the growth of the organ having ceased some time previously, but in cases of abortion not only is the uterus not prepared for the process by which the increase in its size is reduced, but it is called on to undergo this reduction while in a state of rapid growth. The ovum being expelled, the growth of the uterus always ceases, but very frequently no attempt is made by Nature to reduce the size of the organ, and this is specially marked when a woman has aborted several times in succession.

The principles which should guide you in the treatment of subinvolution of the uterus are alike in all cases, but the actual method you will follow, and the agents you will employ in carrying out these principles will necessarily vary in each case, as it is recent, or of long standing, complicated by the existence of congestion, of inflammation, or of hypertrophy of the uterus, its appendages or neighbouring viscera, or by the presence of granular erosion, retroflexion of the fundus, &c.

Subinvolution of the uterus is of such common occurrence, and is met with under such varied conditions, both as regards duration, complications, and symptoms, that it would be impossible for me to enumerate all the phases it presents, or to mention all the points of interest connected with this condition, you must, by watching the cases under treatment in the wards of this hospital and in the out-patient department, endeavour to make yourself familiar with these, but you will find that they all may be roughly divided into three classes, each being, in

point of fact, a different stage of one and the same affection, it being of course understood that many cases will be met with holding a more or less intermediate position between one or other of these classes.

1st. We have those in which the affection is of recent date, menstruation being profuse, and the uterus soft and engorged, as well as enlarged, the os and cervical canal being patulous, the vagina often being tender and inflamed.

2nd. Cases of longer standing, in which the extreme softness of the uterus no longer exists, though induration has not as yet occurred, there is generally copious uterine catarrh, with more or less erosion of the lips of the os uteri, menstruation being, as a rule, profuse.

3rd. Still more chronic cases, in which hypertrophy of the whole organ, and especially of the fundus, has taken place, there is now also much induration; the fundus, which is frequently retroflexed, is tender to the touch, sexual intercourse being consequently painful. Menstruation sometimes continues to be profuse, but very often, as time elapses, it becomes scanty.

(1.) The cases comprised in the first class—namely, those of recent origin, do not come under observation nearly so frequently as the others. If women do not make a good recovery after parturition they generally think that their sufferings are due to mere debility, and that time will set them right; they may be nursing, though unfit to do so, and menstruation may not have as yet regularly recurred; the pain in the back, the copious leucorrhœa, and the inability to walk may not be deemed of sufficient importance to demand special treatment; but still, a considerable number of women do, from time

to time, come under observation within two or three months after their confinements, in whom the uterus will be found to be enlarged, soft, and congested, the cervical canal patulous, and pouring out a copious muco-purulent discharge. The soft and heavy body is very liable to bend backwards, and in time to become permanently retroflexed. In such cases the indications for treatment are clear. The distended blood-vessels of the uterus should be relieved by the abstraction of blood, its muscular fibres should be stimulated to contract by applications made to the interior of the uterus, and by the exhibition of ergot, strychnia, &c. The fundus, if retroflected, should be supported and retained in as nearly as normal a position as possible by means of a pessary, and, at the same time, every effort should be made to invigorate the general health. Menstruation, if profuse, must be restrained, even if for that purpose plugging the vagina becomes necessary, and, should the woman be nursing, she should wean the child. It is in such cases as these that postural treatment, judiciously carried out, is often of so much value.

It is a very hazardous proceeding to apply leeches to the cervix in these recent cases; their application would almost certainly be followed by dangerous hæmorrhage, but blood should be extracted from the uterus at short intervals by puncturing the cervix with a sharp lancet-pointed knife, by which means the quantity taken can be regulated to the greatest nicety. When the cervix is very soft and congested, puncturing has to be done with care, otherwise profuse bleeding may occur. The point of the knife should not, in the first instance, penetrate to a greater depth than about the 1-8th of an inch, if blood

does not flow sufficiently freely another somewhat deeper puncture may be made. The quantity of blood taken at one time should be small—from half-an-ounce to an ounce is quite sufficient to relieve the local congestion; often even a lesser quantity suffices, but the operation must be repeated at short intervals, of two or three days. Should the bleeding be at all profuse it can at any moment be restrained by placing against the os uteri a small pledget of cotton, to which a piece of string may be affixed, so that the patient can remove it herself after a few hours. By adopting this precaution you may feel perfectly sure that no undue loss of blood will occur; indeed, if the patient be seen in your own consulting rooms, or in the out-patient department of an hospital, it is generally wise to adopt this precaution before dismissing her.

Various agents are used for the purpose of stimulating the uterus to contract and of lessening the irritability of the intra-uterine mucous membrane, all of these must, to produce any satisfactory effect, be applied to the interior of the uterus, and be carried up to the fundus; those most commonly employed are—(1) carbolic acid, (2) tincture of iodine, (3) iodine dissolved in carbolic acid (a preparation to which the name of iodised phenol has been given), (4) nitric acid, and (5) the solid nitrate of silver. I give them in the order in which I recommend their employment.*

In recent cases of subinvolution I seldom employ any agent except carbolic acid: it is mild in its effects, seldom causes much pain, and, with care, is quite safe. Let me

* For direction as to the method of applying these agents see Lecture XVII.

here give you one rule from which there should be no exception—namely, never apply carbolic acid or any other agent to the cavity of the uterus unless the os internum is sufficiently patulous to permit of the easy passage of the probe through it. If you neglect the observance of this rule you will certainly get into trouble. Carbolic acid, tincture of iodine, or the iodised phenol should be applied about every third or fourth day, and if much congestion be present the cervix can be punctured immediately upon the application being made. This will have the double effect of relieving pain should the carbolic acid have caused any, and by lessening the congestion, facilitate the contraction of the muscular fibres of the uterus. Carbolic acid applied to the surface of the uterus makes a superficial slough; in fact, it blisters gently the intra-uterine surface. At the moment of application some pain is usually felt, but this rapidly dies away; indeed, it often relieves previously existing pain, specially when that is due to hyperæsthesia of the uterus. Nitric acid or the nitrate of silver are not suitable in recent cases.

I have already said that postural treatment is of much value in cases of subinvolution. By postural treatment, I mean the keeping the patient mainly in the recumbent position, and thus preventing the vessels of the uterus and its appendages from becoming unduly distended with blood. But this method can be carried too far. A patient should never be confined to bed, or even to a couch, for such a length of time as to injure her general health. Consequently, I advise you to allow your patients to take a moderate amount of exercise in the open air daily. Walking for a short time is probably the best kind of

exercise she can have, but she must not stand about, and the moment the walk is over let her lie down; if she be unable to walk, or that it causes pain, driving in an easy carriage or bath-chair must be tried; in fact, the patient should lie almost constantly, except when taking exercise. But many patients cannot, or will not, lie up; you must then content yourself with pointing out how injurious standing or sitting upright for a length of time is, warning the patient at the same time that she will retard her recovery by so doing. As already mentioned, the fundus is frequently flexed in these cases; when this is so, a properly adapted pessary not only often relieves pain, but materially aids our other treatment.

(2.) The condition I have described being overlooked or neglected, the affection passes into another stage. The uterus is no longer unduly soft, but feels firm to the touch, both the body and cervix being enlarged, and the fundus very frequently retroflected, pressure on any part of the organ with the finger generally causes pain; in fact, hyperæsthesia of the uterus exists, and this explains two symptoms, one or both of which are now commonly present—namely, the distress which walking so commonly causes, and the pain the patient often suffers during sexual intercourse. Menstruation still, in far the majority of cases, continues to be unduly profuse, while, on looking through the speculum, more or less erosion of the lips of the os uteri will generally, but not always, be observed. Copious uterine catarrh is also nearly always present.

Here, as in the former case, you must endeavour to lessen the congestion and reduce the size of the uterus, as well as relieve the pain; but your task is now much more difficult; you will often find it hard to obtain suffi-

cient blood by puncturing the cervix, though this generally can be effected by making the knife penetrate to a greater depth, and this should be always tried. The hot-water vaginal douche sometimes acts exceeding well in these cases, and its use should never be omitted, while the application of carbolic acid, or better, the iodised phenol is still needed, and in some obstinate cases nitric acid should be employed. But none of these agents are to be used till the tenderness of the uterus is lessened, and any symptoms of inflammation which exist removed; in fact, you are now dealing with a state of chronic inflammation, the result of neglected subinvolution of the uterus. I must, however, defer till a future occasion entering into details of the treatment you should adopt under these altered circumstances.

(3.) The third class comprises those cases which have passed into a still more advanced stage. The walls of the uterus are thickened and hypertrophied, though the actual depth of the uterine cavity, as proved by the use of the sound, may be less than previously. The fundus and cervix are still generally tender to the touch; and if the body has been flexed in the early stage, the flexion is now incurable. Menstruation in the majority of cases, instead of being profuse, now appears in diminished quantities, though in a few the flow is still excessive. The patient nearly always complains that walking causes distress, of a sense of fulness in the pelvis, and of a distressing feeling as though the uterus were prolapsed. In fact, you have hypertrophy, with hyperæsthesia of the whole uterus, associated with which there is an unhealthy condition of the intra-uterine mucous membrane. The heavy uterus sinks low in the pelvis,

and presses on the viscera, and its natural supports being now wanted, it receives a jar from every motion. Here you have to deal with one of the most troublesome and difficult forms of uterine diseases which it is possible to conceive, and one which will tax all the resources at your command to the utmost.

Local blood-letting now is of comparatively little value, but it may be tried. The action of carbolic acid is too feeble to produce much effect on the hardened uterus. Iodised phenol will do better; but even that agent, strong though it be, is generally insufficient. So, too, is even nitric acid. On the whole, I think in these cases that the solid nitrate of silver is the most efficient agent. Still I very seldom employ it, and only have recourse to it in those cases in which, menstruation being profuse, the other agents I have mentioned have proved inefficient. The free use of the thermo-cautery sometimes is of great use in these chronic cases.* Pessaries in general seldom do much good. Often they cannot be borne. The one I have found most useful in relieving the distressing bearing-down sensation is Salt's watch spring pessary. The chief objection to it is, that being covered with soft rubber, it is acted on by the vaginal secretions, and rapidly becomes coated with a deposit, and consequently must be removed at short intervals for the purpose of being cleansed.

The sufferings endured by patients whose cases have passed into the third stage I have just described are often great and, unfortunately, lasting. I have known young women under thirty years of age to become permanent invalids, with little hope before them of obtaining relief

* See Lecture IX.

from their sufferings. Time sometimes does much; and if the patient can rest she may gradually improve, but among those who have to exert themselves this seldom occurs.

In thus sketching the outline of the stages through which the uterus passes when its involution has been defectively performed, you must not suppose that there is any well-defined division between them. One passes imperceptibly into the other, and numerous modifications of the symptoms and conditions I have described are daily to be met with, as well as many complications from irritation or inflammation of the neighbouring viscera, especially of the bladder, while the digestive functions nearly always become deranged. Nor are you to suppose that this long train of symptoms always sets in at once, or dates necessarily from the most recent pregnancy. On the contrary, it often commences long previously; perhaps after the patient's first or second labour involution of the uterus was imperfectly performed; still the organ remained sufficiently healthy to permit of pregnancy again occurring, and of utero-gestation proceeding to the end of the full term, then labour occurring, unless great care be taken—and sometimes even with the greatest care—involution was still more imperfect than before, and so the case proceeds, till the uterus, unfitted for the office it should perform, allows of the escape of the ovum, and a bad miscarriage or premature labouring occurring, all the patient's sufferings are laid down to it, whereas the evil had commenced a long time previously.

In dealing with weakly, delicate women, it is sometimes impossible to prevent the occurrence of defective

involution after parturition, but these cases are the exceptions; and without doubt all the troubles and sufferings I have described are in general preventible, and such of you as are engaged in the practice of midwifery, should inculcate on your patients the absolute necessity which exists for their giving the uterus time to recover itself after childbirth, and you should point out to them the risks they run if they neglect your advice. This is clearly your duty, and it is a duty which should never be neglected.

As I do not wish to have to refer again to subinvolution, I must diverge for a moment from the subject of menorrhagia, to say, that though profuse menstruation is nearly always an early and common symptom of subinvolution of the uterus, there may be exceptions to this rule, as the following case proves:—A young married woman was admitted into one of our surgical hospitals during the past summer for what was supposed to be an ovarian tumour. She had been confined about three months previously of her third child. Hæmorrhage had followed delivery. She also appeared to have been subsequently attacked by some form of pelvic inflammation. She recovered slowly and had not been able to nurse. The lochia ceased to appear during the attack alluded to, and menstruation had not occurred since delivery. On passing the hand over the abdomen, a large movable tumour could be easily felt lying to the left side; it was very painful to the touch. After a few days this woman was discharged from hospital, her case being considered unsuitable for any kind of surgical interference. As, however, she continued to suffer much distress, she presented herself among the out-patients here, when a careful ex-

amination, made with the aid of the uterine sound, proved the tumour to be the uterus, much enlarged and elongated; in fact, it was a case of subinvolution, with temporary suppression of menstruation. I admitted her into hospital, and introduced ten grains of nitrate of silver into the uterine cavity. This, as usual, caused some pain for a few hours, but it had the desired effect. It stimulated the uterus to set up the process of involution which the attack of inflammation had arrested, and in a couple of weeks she was discharged, the uterus having almost regained its normal size. When admitted, the sound penetrated to the depth of five inches into the uterus.

Fig. 11.

Uterine Porte-caustique.

The mode of carrying out this treatment is simple. You introduce the instrument, which I now exhibit (Fig. 11), into the uterus, just as you would an ordinary uterine sound. It is Sir James Simpson's "Uterine Porte-caustique." It consists, as you see, of a hollow silver tube, in size and shape closely resembling a sound, and containing a flexible stilette which fits it accurately. As soon as you are satisfied that the point of the instrument has reached the fundus of the uterus, you withdraw the stilette and push up by means of it, through the tube, a piece of solid nitrate of silver, reduced to the requisite size and weight, until it is fairly lodged in the cavity of the uterus. In doing this there is but one caution requisite—namely, that as soon as the piece of nitrate of silver has reached

the extremity of the porte-caustique, and before it is finally pushed out of the instrument (a point you can always be certain of by observing how much of the stilette remains still unintroduced), you should withdraw the instrument to the extent of about half an inch; for, if this precaution be not observed, it is possible that the nitrate of silver might be forced into the substance of the uterine wall, instead of being left free in its cavity, an accident which, though possible, is very unlikely to occur.

I have mentioned this plan of treatment because I am satisfied that its value is far from being fully appreciated. It is looked upon by many practitioners as heroic and dangerous. I have practised it occasionally for several years, and have found it to be safe, and in no single instance have I known it produce serious symptoms. That pelvic cellulitis may, under certain circumstances, follow the introduction of the solid nitrate of silver into the uterus is quite possible, and I should not at any time be surprised at its occurrence; but though I have seen cellulitis follow the use of apparently milder applications, it has not as yet occurred in my practice after the introduction of the solid nitrate of silver.

LECTURE VI.

Menorrhagia continued—Granular Erosion of Cervix Uteri—Treatment of—Granular Condition of Cavity—Treatment of—Mode of Dilating Cervix—Sponge Tents—Sea-tangle—Barnes' Dilators—Use of Nitric Acid—Curette—Placenta retained after Abortion.

I HAVE already dwelt at some length on the subject of subinvolution of the uterus, as bearing on that of menorrhagia which is frequently associated with it, and I mentioned that this abnormal condition of the uterus is the most common cause predisposing to the occurrence of erosion of the cervix; but erosion may be met with independent of subinvolution, and is by itself capable of giving origin to profuse menstruation.

Mere abrasion of the lips of the os uteri is not sufficient to produce menorrhagia, but an unhealthy, spongy condition of the cervix is met with, which bleeds on the slightest touch, the surface being granular, the os patulous and the lips everted, a condition quite capable of originating severe menorrhagia. Thus I recently saw a young married woman, who had never been pregnant, who stated that she had become greatly debilitated by the excessive loss which of late occurred at each menstrual period. Ergot and astringents had been freely administered, and she had been ordered to inject into the vagina lotions containing alum and zinc; but this treatment produced no good effect. A vaginal examination proved the

existence of extensive granular disease of the os and cervix uteri. Now, in severe cases such as the one I am referring to, you may rest satisfied that the unhealthy condition of the mucous membrane extends at least as high as the os internum, and that you will fail to effect a cure unless your treatment reach every portion of the diseased tissue; therefore, I commenced my treatment by cauterizing freely the whole extent of the cervical canal, and the vaginal aspect of the cervix, with fuming nitric acid. This did not cause any pain. On examining the os uteri a few days subsequently, I found it in a much healthier condition; the menorrhagia never returned, and although a considerable time elapsed before the uterus regained a perfectly healthy state, still the progress of the case was rapid and the cure perfect, the only treatment subsequently necessary being the occasional application of a twenty-grain solution of nitrate of silver to the os uteri, and, at a later period, of small blisters over the sacrum; finally not the slightest trace of the erosion remained, and menstruation became in all respects normal.

The foregoing case illustrates the mode of treatment which I frequently adopt. If the case be recent, and if you can satisfy yourself that the unhealthy condition of the mucous membrane does not extend very high, brushing the part lightly over with nitric acid, repeating the application if needful two or three times, at about a week's interval, may be sufficient; but the fuming nitric acid, though it acts rapidly, produces a very superficial slough, and in the severer forms of the disease, recourse must be had to the *potassa fusa*, the use of which is too much neglected in the treatment of these cases.* I

* See Lecture IX.

believe that not a little of the opprobrium which rests on obstetric practitioners for the length of time over which their treatment extends, is due to excessive timidity, and to the use of inefficient remedies.

A condition very analogous to that which we can see in the cervical canal, occurs also in the interior of the womb, as the result of congestion and inflammation of the lining membrane of that cavity, and this sometimes even though the vaginal aspect of the cervix uteri be healthy; a fact which is often overlooked. Indeed the majority of systematic writers have till recently altogether omitted all mention of it. Dr. Tanner, in his excellent work on the "Practice of Medicine," mentions the "existence of an unhealthy pulpy condition of the mucous coat" of the uterus as a cause of menorrhagia. My own experience leads me to conclude that while a "pulpy" condition is rare, chronic disease, producing a rough, granular state of the mucous membrane, lining the cavity of the uterus and giving origin to menorrhagia, is far from being uncommon. This condition I believe to be in many respects analogous to that so commonly met with in the eyelid, and you will fail to cure the menorrhagia which it causes, until you have destroyed the granulations on the mucous membrane and restored it to a healthy state, just as you would fail to relieve the ophthalmia depending on granular lids until you have cured the palpebral affection. I may here take the opportunity of laying down a rule, which I advise you invariably to adopt—namely, whenever you meet with a case of menorrhagia *in an otherwise healthy woman*, which a careful vaginal examination proves not to depend on erosion of the os and cervix uteri, on an extra-uterine polypus, on cancer, on ovarian congestion, or some other

evident cause, that you should dilate the cervix and os internum with the view of determining what the condition of the interior of the womb may be. This I hold to be your manifest duty.

I cannot refrain from quoting the judicious remarks of Dr. Tanner with reference to this subject. He says, speaking of menorrhagia—Vol. II., p. 301—"When a woman suffers from repeated attacks of uterine hæmorrhage, which can only be partially or temporarily relieved by rest, nourishing food, and proper astringents, we may be sure that there is some organic disease of the ovaries and uterus; and though the cervix and body feel healthy to the touch, we can be certain that the bleeding is due to some actual disease; that it is not functional." And further on, after enumerating what these causes may be, he adds—"There is only one plan of treatment which can be adopted with a reasonable hope of success, and that is to dilate the os and cervix thoroughly, so as to permit the removal of the source of evil." I fully endorse these observations.

There are two methods practised for accomplishing dilation of the cervix uteri, the one being by means of tents, made of sponge, sea-tangle, or Tupulo wood, which latter has recently been introduced as a substitute for the laminaria; the other by means of graduated bougies. To effect dilatation by means of tents occupies from twelve to thirty-six, or even forty-eight hours according to the condition of the cervix. If the patient has borne children and the cervix be soft, complete dilatation of the uterus can generally be effected by them in twenty-four hours, but if she have not borne children, it in general takes a longer time, and is therefore a comparatively slow process,

whereas if bougies be employed, a few hours may possibly suffice for the purpose. As a rule, I greatly prefer the slower method, namely, by the use of tents, as being safer, and I am of opinion that rapid dilatation should only be had recourse to in women who have borne children, and when the cervix is very soft and dilatable.

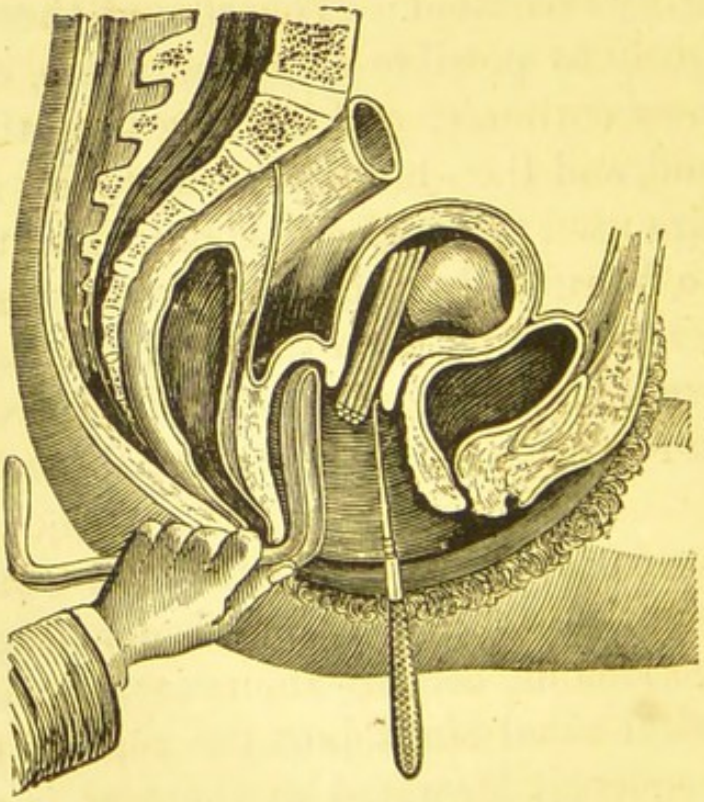
Sponge tents of various sizes are to be had of most instrument makers, or you can prepare them yourself for the purpose. It is merely necessary to cut a fine clean sponge into pieces, conical in shape, and of various sizes and lengths; for you should always be provided with several tents of different sizes before commencing the process of dilatation. The pieces of sponge are next to be immersed in a strong solution of gum arabic and left in it till thoroughly saturated. You should then wrap each piece as tightly as possible with fine twine, commencing at the narrow extremity and winding it on till it reaches the thick end, and then hang them up to dry slowly. Before these are used the surface should, after the removal of the twine, be rubbed smooth. A small-sized tent is to be first inserted; on its removal, after the lapse of from six to twelve hours, a larger one is to be introduced, and the process repeated until the cervix is sufficiently dilated.

I now never use sponge tents; they are troublesome to prepare, give rise to a very fœtid discharge, and are further objectionable, because the mucous membrane lining the cervical canal sinks into the cells of the sponge, and is consequently lacerated as the tent is withdrawn, and the risk of septicæmia occurring is thereby greatly increased. Besides, sponge tents, from their conical shape necessarily dilate the os externum the most, often beyond

what is required; while the os internum may not be opened even moderately. In fine, in my opinion, sponge tents should never be used if sea-tangle can be obtained.

Tents made of seaweed, technically called *laminaria digitata*, have been in use for some years for the purpose of dilating the cervix. The method first adopted was to introduce one, which after the lapse of some hours was withdrawn and another of greater calibre introduced in its place, the process being repeated till the os internum was sufficiently dilated. This process was necessarily very tedious, besides being objectionable in other points of view. It is now given up, and a modification of it, introduced by Dr. Kidd of this city, adopted in its place.

Fig. 12.



Polypus (Case of M. D.)
Sea-tangle in Situ to Effect Dilatation.

This method possesses these three great advantages—it is comparatively rapid; is cleanly; and lastly, and most im-

portant of all, it dilates the canal equally throughout its whole length, except in some cases of rigidity of the os internum, to which I shall allude presently.

Having decided to dilate the cervix, the first step is to expose the os uteri by means of the duck-bill speculum, next to seize the anterior lip with a tenaculum, and with it to draw down and steady the uterus, as shown in Fig. 12. You should previously measure the depth of the uterus, and have ready several pieces of sea-tangle bougies, each piece being nearly the length of the uterine cavity. These you now proceed to introduce; the main difficulty is in the introduction of the first piece, the difficulty being greatly increased if the uterus be retro- or anteflected. When either of these conditions exist you had better first introduce the uterine sound, and slipping in a piece of sea-tangle beside it, withdraw the sound. Short lengths not being so easily manipulated as long ones, I sometimes, when difficulty occurs, take an entire bougie and pass it through the os internum as you would the sound, and then slip pieces of the proper length in beside it; for when one piece has been inserted, it straightens the uterus and serves as a guide to the others. When several pieces have been introduced you can withdraw the long one. The number of pieces you should insert varies in each case. If the patient has never been pregnant and the cervix is rigid, you may not be able to get in more than two or three, possibly only one; but, if she has borne children, and if the cervix be relaxed, you may succeed in introducing five or six, or even more, without difficulty. Indeed I have in such cases introduced as many as ten.

If a small number only have been introduced, it is better to withdraw them after the lapse of nine or ten

hours, and introduce a larger number; but if seven or eight pieces have been inserted, they may be left for twenty-four hours before any further steps be taken. The sea-tangle gradually absorbs moisture from the vagina and uterus, and swells, and by so doing dilates the cervix. This of course, causes pain, which, however, is seldom very severe, and generally passes off after a few hours. If it continue, I usually direct a morphia suppository to to be introduced into the rectum, or administer twenty grains of the hydrate of chloral at bedtime.

Dr. Graily Hewitt, who still advocates the use of the sponge tents in preference to the sea-tangle, states, as an objection to the latter, that they are liable to slip out. This certainly is true, if you use the short tents which are sold in boxes, but these I never employ, and if you use pieces of bougie of the length already specified, and take care that they pass nearly up to the fundus, there is very little chance of their being expelled; I have even on two or three occasions experienced some difficulty in removing them. This has been the case when the os internum was so rigid that it prevented the sea-tangle expanding as freely at that point as it did in the cavity of the uterus and in the cervical canal; the pieces of tangle being thus constricted in the middle, it was necessary to press the index finger of the left hand firmly against the lip of the os uteri, while, with a pair of long forceps held in the right hand, one piece was seized and slowly extracted. These are the cases in which, as just mentioned, the whole extent of the canal is not equally dilated; when this occurs fresh pieces of the tangle must be introduced and time given to allow of their expansion before proceeding to explore the interior of the uterus.

You will, however, from time to time, meet with cases in which, although the sea-tangle has expanded to its fullest extent, still from the size of the tumour, or some other cause, the os internum is not as large as you would desire. Under such circumstances I have completed the process by the introduction of one of Dr. Barnes' dilators. These are India-rubber bags of a somewhat hour-glass, or rather fiddle shape. They are made of three different sizes. One end terminates in a long slender tube, the extremity of which is furnished with a stop-cock. The dilator is introduced in a flaccid state into the uterus on the point of a sound, or held and compressed between the blades of a pair of long slender forceps, the terminal bulging part being carried by them through the os internum; water is then to be gradually forced in through the tube just alluded to, and the dilator left in for an hour or two; by that time it will generally be found to have distended the canal to a considerable extent. The peculiar shape of the bag prevents it, when once it has been distended, from slipping out of the uterus. Dr. Barnes originally introduced these bags into practice for the purpose of dilating the os uteri in cases in which it was desirable to induce premature labour; but their use is now further extended, and we employ them occasionally for the purpose of completing the dilatation of the cervix in the unimpregnated uterus.

You have had frequent opportunities of seeing the process of dilating the uterus in the manner I have described carried out by me, and must have noticed the entire absence of unpleasant symptoms, after a proceeding so apparently severe. I have therefore no hesitation in recommending you to adopt this course in your future

practice, as being one which you have seen productive of such good results in this hospital.

I have never, in my own practice, met with an instance in which unpleasant symptoms followed the attempt to dilate the cervix uteri with Laminaria tents; but I am far from throwing doubt on the accuracy of the statement of others, who have recorded the occurrence of alarming symptoms, or even of death, as consequent on this procedure, and I am prepared for the possible occurrence of such, for cases occur from time to time in which the most trifling exciting cause will be followed by serious symptoms; but, as a rule, I believe when these arise, either during the processes, or in consequence of the dilatation, they so do because unsuitable cases have been selected. Therefore, to guard as far as possible against unpleasant results, I lay down for myself the following rules, which I recommend to you for your guidance:

1. Never to dilate the cervix uteri for the cure of dysmenorrhœa or sterility, depending on a narrow cervical canal or conical cervix.

2. Never to dilate where a large and dense intramural fibroid presses on, and partially obliterates the cervical canal. In both these classes, the cervix should be divided by the knife or scissors in the manner I have, in a previous Lecture described, in preference to attempting to dilate.

3. Never to continue the process for more than forty-eight hours. If the cervix be not sufficiently open then, operative interference should be postponed for some weeks.

4. Never to attempt dilatation where any symptoms of inflammation of the uterus, or surrounding parts, exists.

If you attend strictly to these rules, you will have little to fear in carrying out the process. Of course, if the patient suffer unduly, or that symptoms of inflammation show themselves, it will be your duty to withdraw the sea-tangle without delay, and for the time at least, to give up all attempts to dilate the cervix.

Having dilated the cervix and removed the sea-tangle, you should carefully wash out the interior of the uterus with a solution of the permanganate of potash, or some other disinfectant before proceeding to explore the interior of the uterus. This precaution is of importance both for your own and your patient's sake. Its neglect nearly cost me my own life, the fœtid discharge which was in the womb having inoculated a trifling wound, inflicted on my finger during the removal of a small polypus.

If you desire to practice the rapid method of affecting dilatation I advise you to procure Hegar's Bougies. These bougies are 25 in number, each consisting of a stem of vulcanite, about 12 centimetres (4½ in.) long, which is inserted into a broad flat piece of ebony, 5ctm. long, which forms a sort of handle, and enables us to grasp them firmly while introducing them. Each bougie is slightly curved, and of exactly the same diameter throughout, except at the extreme point which is conical. The smallest bougie has a diameter of 2 mm. and each succeeding one increases in diameter by 1 mm. or by 3 mm. in circumference, till we arrive at 26 mm. in diameter. For difficult cases it is advisable to have the difference between each bougie reduced to ½ mm. The first phalanx of the finger can usually be introduced and the interior of the uterus examined as soon as we are able to pass in No. 16. Hegar uses still larger bougies than these for the dilatation of the

os and cervix during labour, as for instance in placenta prævia. In cases where we want to inject anything into the uterus, or to apply caustics, such as nitric acid, &c., to its interior, or to use the curette, dilatation up to No. 6 in the former and 12 in the latter will be sufficient.

These bougies are easily kept clean and *disinfected*. Before being used they should be placed for some time in a 5 per cent. solution of carbonic acid, and each one lubricated with carbolic oil (10 per cent.) before introduction. To introduce them the woman should be placed on her left side, and after the vagina has been thoroughly disinfected, Sims' speculum is introduced, and the anterior lip fixed by a good vulsellum. One of the bougies is then introduced, and if it passes readily, it is at once removed and the next highest number inserted. As soon as there is any difficulty in the introduction we must proceed slowly, and it is sometimes well in such cases to leave the bougie some time *in situ*, before proceeding to introduce the next. In no case should much force be exerted. Hegar says it is almost always possible to introduce the finger into the uterus after one hour's dilatation, and usually a much shorter time is sufficient. The whole proceeding is rendered much quicker and easier by putting the patient under chloroform, and having bougies which increase only $\frac{1}{2}$ mm. in diameter at a time. This method possesses the great advantages of quickness and safety from infection, and since Hegar has practised it he has entirely given up the use of the sponge-tent and all similar methods of dilatation. I have practised this method in suitable cases satisfactorily.

I have now explained the way in which dilatation of the cervix is to be accomplished. It remains for me to

direct your attention to the mode in which you are to proceed when this having been acccomplished, you desire to clear up any doubt which exists, and satisfy yourself as to the cause of menorrhagia.

We have, in the vast majority of cases, to rely for this purpose on the sense of touch alone, and must accordingly pass the index finger fairly through the os internum, till the tip reaches the very fundus.* To accomplish this by no means easy matter, it is necessary in the first instance, to draw down and fix the womb; this you effect by seizing the anterior lip of the os uteri with a vulsellum, which, when you have drawn the uterus down as low as possible in the pelvis, you entrust to an assistant to hold, while the fundus should be at the same time pressed down by your left hand; the finger well oiled, is now introduced slowly through the os internum and swept round the entire cavity of the uterus. You will thus detect the existence of a polypus or a tumour, no matter how small, should either be present, while the educated finger will recognize the rough, uneven feel which the mucous membrane, if in an unhealthy granular condition, conveys to the touch.

I have already expressed my opinion, that this condition of the interior of the uterus is probably due to sub-acute

* My friend, Dr. Cruise, who has paid special attention to the use of the endoscope, had on several occasions made an examination of the interior of the uterus with that instrument, and is of opinion that in most cases this can be done satisfactorily. In confirmation of which statement I may refer you to Dr. Cruise's Paper, in the *Dublin Journal of Medical Science*, Vol. LXXVIII., for May, 1865, page 333; also to a case recorded by the late Dr. Hayden, in Vol. LXXX. of the same periodical, p. 497; to a paper on Granular Endometritis, by Dr. Churchill, in Vol. I., of the *British Medical Journal*, p. 2; and to an Essay on the Endoscopic Examination of the Cavity of the Uterus, by Dr. Pontaleoni, of Nice, in the *Medical Press and Circular*, for July, 1869.

inflammation. This view I believe to be correct; but be the cause what it may, the mode of treatment should be the same, and that is to destroy these so-called granulations, "and endeavour to excite healthy action in the diseased part." With this object, I invariably make use of the strong nitric acid, applying it with extreme freedom to the interior of the uterus. In such cases it is necessary to reach the entire of the diseased surface. I apply the acid by means of a layer of cotton wrapped firmly round a platinum rod; if that is not at hand, a copper wire or the stilette of an ordinary catheter will do. The os is brought into view by the aid of the duck-bill speculum which protects the posterior wall from any risk of injury, its concavity being smeared with lard to prevent the acid from corroding it, while the anterior wall is guarded by the vulsellum with which the lip is still firmly held; the wire armed with the cotton saturated with the acid, is then passed boldly through a vulcanite tube up to the fundus, swept round the entire of the interior of the womb, and withdrawn. The tube is essential for the protection of the lips of the os uteri and cervical canal from the action of the acid. I am in the habit of using a vulcanite one (Fig. 13), two inches in length, and one-third of an inch in diameter at its lower extremity. This should be passed up to the os internum, and the acid applied through it, or a glass tube may be used for the purpose. The cervix having been previously freely dilated, this can be done without any trouble.*

Fig. 13.

VULCANITE TUBE.

* See also Lecture XVII.

In cases when the disease is of old standing, and the hæmorrhage has been severe, I repeat the application, passing the stilette armed with a fresh piece of cotton, saturated with the acid, a second or even a third time up to the fundus, so as to insure the thorough cauterization of the whole inner surface of the uterus. As soon as the cauterization has been effected, and the tube withdrawn, a piece of cotton, soaked in water, should be at once applied to the os, to prevent the vagina being injured by any acid discharge which might issue from the uterus, and then the lip being freed from the grasp of the vulsellum, and the speculum withdrawn, the patient is to be placed in bed.

The subsequent treatment is very simple. Should the patient suffer pain, which she seldom does to any great degree, I order a morphia suppository to be introduced into the rectum, but in the majority of cases this is unnecessary. Indeed, much less pain is caused by this application than by the introduction of the solid nitrate of silver, though the latter would seem the milder treatment of the two. This immunity from pain after application of the acid is very remarkable.

But in some cases even the application of nitric acid is insufficient to effect a permanent cure, the mucous membrane having become so thickened, or being in such an abnormal condition that the effects of the acid would soon pass off, and the hæmorrhage return. This is specially likely to be so in cases of menorrhagia occurring after abortion; in these you will sometimes feel an elevated patch, marking the site of the incipient placenta, and it is most probably from this, that the hæmorrhage proceeds. Under such circumstances you should remove the un-

healthy portion of mucous membrane with a curette before applying the nitric acid. I shall explain the mode of using this instrument by and by.

I have only once or twice found it necessary to dilate the uterus a second time for the cure of these cases, but it may be necessary to apply the acid again, if after the lapse of some time menstruation continues to be profuse; a platinum or small vulcanite cannula being always introduced, and the acid or other caustic carried up to the fundus through it;* one or two applications of the nitric acid are generally sufficient.

You can doubtless recall to mind several of the cases which have been treated by this method during the past session. The following one, at present in the house, serves as an example:—J. C., a married woman, æt. twenty-eight, admitted 26th Nov. She has never been pregnant. Menstruation regular till within the last few months, when she observed the flow to become much more profuse than formerly, and to last for a greater number of days. Latterly, the interval between each period has been but a fortnight. She has suffered, and continues to suffer greatly, from severe pain over the left ovary and in the back. On making an examination *per vaginam*, the os was found to be relaxed and patulous, the sound penetrated to the depth of more than three inches, and the fundus appeared to be slightly enlarged. The existence of a small polypus being deemed possible, dilatation of the cervix was decided on; five lengths of compressed seatangle were introduced on the morning of the 3rd Dec., but, on withdrawing them next morning, the os internum was found still too contracted to admit of the passage of

* For direction see Lecture XVII.

the finger; Barnes' small-sized dilator was consequently introduced and maintained in the cervix for a couple of hours. On its removal, I was able to introduce the finger, and to reach the fundus, but neither polypus nor tumour could be detected in the uterus. The inner surface, however, was felt to be rough and uneven; the entire of this surface was freely cauterized with fuming nitric acid. This patient was subsequently discharged cured.

Such is the treatment I generally adopt in severe cases of menorrhagia, depending on an unhealthy condition of the intra uterine mucous membrane, and which have resisted ordinary treatment, circumstances, of course, occasionally requiring me to modify it. Were the patient in a very feeble, debilitated condition, I should endeavour, in the first instance, to improve her health, restraining the menorrhagia by plugging, by alum injections, or by hot water bags applied to the spine; but this treatment would be altogether palliative, and I should as soon as possible have recourse to the radical plan I have just advocated. But bear in mind that in by far the majority of cases of the affection of which I am speaking, it is altogether unnecessary to dilate the cervix, for when satisfied as to the nature of the case, you can apply nitric acid or any other agent you may select, through my cannula* without subjecting your patient to that painful process, which is not often needed except in severe cases, or when the diagnosis is doubtful.

Another mode of treatment has been practised to which it is right I should call your attention; namely, the injection into the uterus of astringent or caustic fluids, I do not think this treatment either safe or satisfactory. Inflammation of a serious, and even fatal, character, has

* See Lecture XVII.

followed the injection of fluids into the cavity of the uterus; and I look on it as a hazardous practice. If any of you, gentlemen, should be induced to try it hereafter, let me recommend you, in the first instance, to dilate the cervix, so that the injected fluid may have a ready means of exit, or at least to employ a double tube.

As to the curette, its use is, in many cases, a valuable adjunct to our treatment, but it cannot be relied on alone. This instrument is intended to detach any soft bodies which may exist in the interior of the womb; in plain English, the object is to scrape off portions of its lining membrane if diseased, and if this has to be done almost at random, it it is evidently uncertain whether it will effect the object in view or not. Récamier himself, who invented it, advocates the cauterizing of the interior of the uterus with nitrate of silver after the curette has been withdrawn—a clear proof that the use of the instrument even in his own hands proved inefficient. There are just two cases in which, in my opinion, the use of the curette is useful, first, for the removal of a small polypus the size of a pea or bean, which it is difficult to seize with the forceps for the purpose of twisting off, or of small portions of the placenta which are left adherent, specially after abortion; and secondly, in those instances in which, as the result of long standing disease, the mucous membrane becomes disorganized, and granulations form of such considerable size that nitric acid is not sufficiently powerful to destroy them; then their removal by means of the curette, previous to the free application of the acid, is necessary. But in both cases the

Fig 14.

MARION SIMS' CURETTE.

cervix should have been previously dilated, and the instrument, if possible, guided along the finger to the required point. I use the instrument known as Marion Sims' curette (Fig 14).

4. The retention of a portion of the placenta, or of the fœtal membranes, is too well known a cause of uterine hæmorrhage to need more than a brief notice. Not long since we had in hospital a case where this occurred, and to which I wish to call your attention. This woman was the mother of five children. Early in February she had a miscarriage, at about the fifth month of pregnancy. There was considerable hœmorrhage at the time; the discharge did not entirely disappear for four or five weeks. After an interval of about a fortnight, a red discharge, which she supposed to be the regular menstrual flow, appeared, and continued, with short intervals, till the 1st May, when she came under my care. On examining her, I found the uterus to be much enlarged, the sound penetrating to the depth of four inches. The large size of the uterus, and the freedom with which the sound rotated in the cavity, induced me to suppose that it contained some foreign body, and I determined to explore the interior. I accordingly dilated the cervix, and on passing my finger through the os internum, detected a large body which appeared to be attached by a slender pedicle to the uterine wall. I seized it with a vulsellum, and using very slight traction, extracted what proved to be a large portion of placenta, which had been retained in utero for nearly three months, giving rise to the symptoms I have detailed. The retention of so large a mass as existed in this case is, however, unusual, but small portions remain often enough after abortion. You may remember that I recently

dilated the uterus of a patient who had for three months an almost continuous red discharge, and that on passing my finger into the uterus I detached a little mass not much larger than a pea which had caused all this trouble. That patient is now quite well. Had I not dilated the uterus in this case, and so discovered and removed the cause of the hæmorrhage, the discharge would have gone on for an indefinite time. I may here take the opportunity of pointing out, though it refers rather to obstetrics than to gynæcological, that you will frequently be able to check hæmorrhage depending on the retention of a portion of the ovum in cases of abortion, and obviate the necessity of dilating the uterus by syringing out the uterus with hot water, at a temperature of about 105°. This must be done carefully, but if you pass the point of the tube of the syringe well up to the fundus, and syringe slowly, you will often succeed in detaching any portion of the membranes which may have been retained and stopping the hæmorrhage, or if the whole ovum be still in utero in causing its expulsion. If the os uteri be too small to admit an ordinary gum-elastic or vulcanite tube, you should use a double catheter such as is employed by surgeons in syringing out the bladder in the male.

5. Profuse menstruation, occurring at irregular intervals, is not unfrequently noticed in women approaching the climacteric period, and it sometimes assumes an alarming character. The cause of these attacks is sometimes obscure, but in many instances they depend on congestion of the ovaries or uterus, or an hyperæmia of both these organs. They are most likely to occur in women, who, as is often the case at this period of life, fall into flesh; the attacks are frequently preceded by a feeling of much dis-

comfort, by headaches, and sometimes by tenderness on pressure over the ovaries. During the period, the excessive loss is best checked by rest, the application of Chapman's hot-water bags to the sacrum, and by the exhibition of ergot. But our main efforts should be directed to avert a recurrence of the attack. With this view, the bromide of potassium or of ammonium may be administered, in thirty-grain doses, for some days prior to that on which the flow is expected. Not unfrequently, however, although the patient looks stout and even plethoric, she feels weak, and complains of fatigue on the least exertion, the pulse is feeble, the heart's action weak; therefore, in the intervals between each period you should attend carefully to the general health, see that the diet be nutritious and unstimulating, that open air exercise be taken, while you will at the same time administer tonics, of which arsenic, iron, strychnia, and digitalis are pre-eminently useful.

From what I have told you as to the causes on which menorrhagia depends, you will understand why it is that astringents, and hæmostatics administered by the mouth, are so frequently ineffectual in checking the hæmorrhage. You are not, however, to suppose that they are useless. On the contrary they are frequently productive of much benefit, and generally are valuable adjuncts to our surgical treatment. In cases of profuse menstruation depending on subinvolution, ergot is of great value. I usually prescribe it in the form of the infusion, administering with it, if symptoms of ovarian irritation exist, the bromide of potassium in full doses; or if the patient be anæmic, ten drops of the tincture of perchloride of iron, and from three to five drops of the solution of strychnia to each dose of ergot, and am satisfied that the addition of the latter

drug increases in a marked degree the peculiar action of ergot on the uterus. I have also tried this combination with advantage in cases of post partum hæmorrhage. You have had an example of its effects in the case of the patient, who was admitted for profuse hæmorrhage coming on three weeks after abortion at the fourth month, which I believed to have been kept up by the retention of the placenta, and may have remarked that each dose of the ergot and strychnia was followed by sharp uterine pains, resulting in the expulsion of the placenta. I recommend you to try this in your future practice. Gallic acid, too, alone or in combination with ergot, is an admirable medicine, and often produces excellent effects. I usually give ten-grain doses of both. The mineral acids and acetate of lead are extensively prescribed in cases of menorrhagia. They are, however, very unreliable agents.

LECTURE VII.

Polypus — Varieties of — Mucous — Fibrous — Symptoms of — Operation for Removal of—Advantages of Steel Wire— Modification of Gooch's Cannulæ—Fibrinous and Placental Polypi.

In the preceding lecture I have spoken of those forms of menorrhagia which depend on, or are caused by, an abnormal or diseased condition of the uterus or of its lining membrane; to-day I have to call your attention to an affection as important as any of the preceding, one, too, of frequent occurrence, and which almost invariably gives rise to profuse menstruation. I allude to polypus, which may be defined as the result of an hypertrophy of some portion of the uterine substance, which, taking the form of an out-growth, becomes in time a distinct tumour attached to the wall of the uterus, either by a base of considerable extent, or more frequently, by a well defined pedicle. These growths are met with of all sizes and shapes, sometimes as little stunted bodies only the size of a pea or small bean; sometimes as large tumours occupying the entire cavity of the uterus, enlarged to the size that organ should be at the fourth or fifth month of pregnancy; but more commonly they are seen of intermediate size.

Occasionally the uterus seems to resent the presence of

a polypus which has been developed within its cavity, and by contractions, similar to those of labour, expels it, and thus causes it to assume the form of an extra-uterine tumour; a process which is evidently Nature's attempt, often a successful one, to effect a cure. When this takes place, and an intra-uterine polypus expelled from the uterus reaches the vagina, the hæmorrhage it has given rise to is usually checked, or may possibly cease altogether. But in addition to those of intra-uterine origin, polypi may grow from the cervical canal, just within the os uteri, or spring from the vaginal surface of the uterus.

Numerous varieties of polypi are described by authors, but for practical purposes they may be classed under two heads, namely, the mucous and the fibrous.

The mucous polypus may spring from any portion of the mucous surface of the uterus; but its favourite seat seems to be the cervical canal, and it may not unfrequently be seen projecting from the mouth of the womb, as a small tumour of a bright pink colour, which bleeds on the slightest touch.

These growths, when of cervical origin, seldom attain a large size. The largest of this variety which has come under my observation occurred in a woman, the wife of a cabman. I saw her about twenty-four hours after delivery, and found a polypus, of the size of an orange, hanging partially out of the vagina. It was attached by a long and very slender pedicle to the cervix uteri, the point of attachment being just inside the os. The midwife who attended this woman assured me that her labour had been in all respects easy and natural, and that she did not detect the polypus till after the expulsion of the placenta. Its vitality had evidently been destroyed by the pressure

to which it had been subjected during the passage of the child's head through the vagina; for when I saw it, it already exhibited signs of decomposition. This patient stated that having lifted a heavy weight when in the third month of pregnancy she felt something give way internally, and immediately afterwards perceived a tumour at the vulva. Profuse hæmorrhage followed, which, however, soon subsided, and the tumour receded. During the remainder of pregnancy she enjoyed good health, and, excepting that when fatigued she noticed something appear at the vulva, she was not conscious of the existence of anything abnormal. A mucous polypus of such size as this springing from the cervical canal, is, however, rare.

Another example of mucous polypus occurred in one of our out-patients, an unmarried woman, aged twenty-four. Persistent hæmorrhage, which all astringents failed to check, compelled me to make a vaginal examination, and I discovered one of these polypi, nearly an inch and a quarter in length, but not much thicker than an ordinary quill, hanging out of the os uteri. In the great majority of instances, however, the mucous polypus does not attain a fourth of that size. These small ones are composed nearly entirely of a soft gelatinous structure. They are highly vascular, and often give rise to severe hæmorrhage quite out of proportion to the size of the tumour. They are generally attached to the canal of the cervix by a slender pedicle, and their vitality is very easily destroyed. It is not at all uncommon to meet with several small mucous polypi in the same patient; occasionally they are of a denser texture, a greater proportion of fibro-cellular tissue entering into their structure, and when this is the case they are more likely to attain a large size.

Once detected, the removal of these mucous polypi of cervical origin are a matter of great ease. This can be effected either by torsion or by means of a pair of curved scissors; or better still, by snaring them with a loop of thin iron wire, severing the attachment either by twisting it or by using an écraseur. Doubtless, it seems almost unnecessary to use an écraseur to remove a body as small as a pea or bean, but it is by no means easy to twist off these little growths; it is often imperfectly done, and the consequence is that the operation has to be repeated, and thereby much suffering entailed on the patient. I now always use a fine wire for the purpose of removing them; indeed I have seen such profuse hæmorrhage follow the excision of even a very small polypus, that I do not think I shall ever again use a knife or pair of scissors for that purpose. In all cases, their point of origin should be cauterized with the nitric acid. When they project from the os uteri they can be reached easily, but sometimes they lie higher up in the cervical canal, and then you have to dilate the canal before you can reach them. This proceeding may of itself be sufficient to effect a cure, for so readily are they destroyed by pressure that instances are not of infrequent occurrence in which hæmorrhage having led the physician to dilate the cervix in order to explore the uterus, he has, when this dilatation was effected, found no morbid structure, the sea-tangle having destroyed by its pressure the polypus to which the hæmorrhage was due. The fact of a polypus not being discovered in any particular case, is not, therefore, an absolute proof that one may not have existed.

But mucous polypi are occasionally met with springing from the fundus of the uterus; then their removal is a

matter of more difficulty, for the uterus must be dilated throughout its whole extent, the polypus seized, its attachment severed, and nitric acid freely applied to the interior of the womb. Here is a specimen of a mucous polypus which I recently removed from a patient in this hospital; it is very large, being, as you may see, the size of a goose's egg. The patient from whom this polypus was removed is unmarried, aged twenty-six years. A year and a-half ago she presented herself among our out-patients, and stated that of late menstruation had become so profuse as to debilitate her greatly. This, with some leucorrhœa, was the sole symptom she complained of. Suspecting the existence of a polypus, I instituted a vaginal examination; but, as the uterus proved to be of normal size, I did not consider myself justified in exploring its interior, and contented myself with the administration of ergot and iron. This treatment proved of use, and for a time we lost sight of her, but not long since she again presented herself, and stated that her improvement had been but temporary, that she soon relapsed into her former condition, and, indeed had gradually become worse. The flow, at the time she presented herself, having lasted for quite three weeks, she was now admitted into hospital.

On examining her a large, soft intra-uterine polypus was detected. Its lower segment projected through the os uteri, which was dilated to the size of a five-shilling piece. The sound penetrated into the uterus to the depth of four inches. This patient was placed under the influence of chloroform; a wire was passed round the pedicle, and the tumour removed without difficulty; for, though its size was so great, it being eleven inches in circumference, its texture was so soft that it was easily

severed from its attachment and drawn through the os uteri. The lower portion of the tumour exhibited well-marked signs of incipient decomposition. This case illustrates three clinical facts of considerable value. First, that these polypi may give rise to no symptom save profuse menstruation; secondly, the comparative rapidity of their growth; and lastly, their tendency to cure by a process of loss of vitality. I may further point out that it also illustrates a fact not sufficiently dwelt on, that intra-uterine polypi, in the majority of instances, occur in women who have never been pregnant.

The fibrous polypus is, I think, more frequently met with than the other variety, and is more difficult to treat. The exciting cause and mode of growth of these tumours is still far from being clearly understood. We only know that, as a rule, they spring from the uterine sub-mucous tissue, are composed of firm fibro-cellular elements, and are invariably covered with mucous membrane. In fact, they are "out-growths of and form the substance of the uterus, the mucous membrane and the muscular and fibrous tissue of the uterus growing in a variety of proportions into its cavity" (Paget). These polypi are generally supplied with numerous blood-vessels, which, however, are seldom of any magnitude. They are met with of all sizes, nor does the amount of hæmorrhage necessarily bear any proportion to the size of the tumour; they may be small and sessile, but more commonly are connected to the wall of the uterus by a well-defined pedicle, which, however, varies greatly in thickness and length. We seldom find more than one fibrous polypus in the uterus at the same time. I am aware, however, that there are exceptions to this rule; thus I had the opportunity recently afforded

me by my friend Dr. Kidd of seeing a patient from whom he had removed nine fibrous polypi at one operation.

The fibrous polypus generally grows from the fundus of the uterus, though examples from time to time occur of its being attached to other portions of the uterine walls. But no matter where attached, its course is the same—the polypus generally enlarges, while the whole of the uterus, stimulated apparently by its presence, increases in bulk and density, till, not unfrequently, we are enabled to feel the organ above the pubes. If not interfered with, and if the polypus be pedunculated, it is possible that in time the uterus may expel it, and thus it may become extra-uterine, and even appear at the vulva. Such a course, however, is far from usual. In general the hæmorrhage, which almost invariably accompanies this affection, runs down the patient, and compels her to seek for relief long before that stage can be reached; or, if she fail to obtain the requisite aid, consigns her to a premature grave.

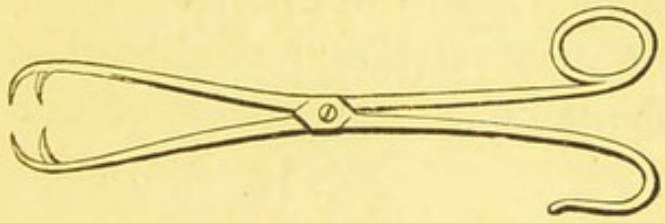
The symptoms marking the occurrence of polypus are threefold; namely, hæmorrhage, leucorrhœa, and pain. Hæmorrhage is, I may say, invariably present. The patient generally first notices the menstrual flow is more profuse than formerly; then that its duration is prolonged, and that leucorrhœa occurs in the interval; pain above the pubes, and over the ovaries, is also sometimes complained of. No age, from puberty upwards, possesses an immunity from this disease. Here, on the table, are specimens of four intra-uterine fibrous polypi removed from patients aged respectively twenty-four, forty-six, thirty-five and fifty-three years, the two former being from unmarried, the two latter from married, women.

The first specimen is the one you saw recently removed

from M. D——, who has just been discharged from this hospital. Her case is a very interesting and instructive one. She is aged but twenty-four years, and is unmarried. Three years ago she began to notice that the catamenia were more profuse than natural; they have continued so ever since. About a year ago she, for the first time, experienced pain in the left side of the abdomen, which at one point was tender to the touch; lying on that side, too, caused her much distress, but she was still able to hold her situation as housemaid. On the 8th of August last the catamenia came on suddenly, and so profusely as to cause faintness. On admission into hospital a day or two subsequently, there was little or no discharge present, but the hæmorrhage had been of so alarming a character, that I deemed it necessary, though she was an unmarried woman, to institute a vaginal examination. The vagina was moderately relaxed, the cervix appeared to be healthy, but the body was anteflexed and heavy. The sound penetrated to the depth of three inches. The cause of the hæmorrhage being still uncertain, I proceeded, in accordance with my invariable rule under such circumstances, to dilate the cervix, and, with some difficulty, succeeded in introducing several pieces of sea-tangle. On attempting to withdraw these after the expiration of twenty-four hours, I experienced great difficulty; for the os internum was so rigid, that it had prevented the tangle expanding at that point, to the same degree it had in the cavity of the womb, and each piece, when finally extracted, was found to be constricted in the centre. Having succeeded, however, in removing them, a larger number were introduced, and next day, I found the cervix was freely dilated throughout its entire length. On introducing the finger

into the uterus, I detected a polypus of considerable size, attached by a short thick pedicle to the anterior wall of the uterus near the fundus; the apparent anteflection of the uterus being due to the fact, that the anterior wall was bulged outwards by the polypus, as shown in Fig. 12 (p. 96). To effect this examination, the anterior lip had to be seized by a vulsellum, and the uterus drawn down in the manner described in my last lecture.

Fig. 15.



VULSELLUM.

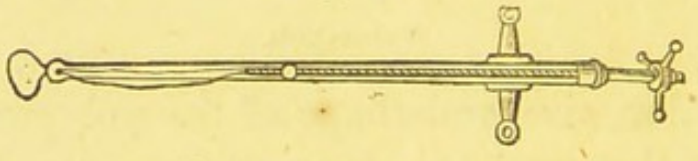
The position, size, and shape of the polypus being thus ascertained, the next step was to remove it. I shall detail to you exactly how this was effected in the case I am referring to, as it will serve as a description of the mode in which the operation should be performed in all similar cases.

The uterus having been drawn down as low as possible by means of the vulsellum, which was fixed in the anterior lip, the index finger of the right hand was introduced till its tip touched the polypus. Another strong vulsellum, such as that shown in Fig. 15, was then taken in the left hand and guided up to the polypus along the finger, and the tumour firmly grasped by it. The latter instrument being intrusted to an assistant, the anterior lip was freed from the one by which it was held. This was done in order to give more room in the vagina, but unless

the polypus be a firm one, the hold we have obtained on the lip of the womb should not be let go.

Steady traction was now exerted on the polypus by means of the vulsellum with which it was grasped, and it was drawn down as low as possible in the pelvis. A long écraseur, made much on the pattern of that suggested by Dr. Braxton Hicks (Fig. 16), and armed with a strong iron wire, was then introduced, the wire being passed over the handles of the vulsellum so as to surround them. The extremity of the écraseur, kept in contact with the finger, was guided up to the polypus, and the wire, after some difficult manipulation, was slipped over the upper surface of the polypus. The point of the écraseur was

Fig. 16.



Wire Écraseur.

then pressed firmly against the lower edge of the pedicle, and kept in as *close contact as possible* with its point of attachment to the uterine wall. This is a matter of great importance, for unless the point of the instrument be kept in the position described, the wire will not be drawn close to the base of the pedicle, and thus the whole of the tumour will not be removed. The écraseur was then slowly but steadily worked, the pedicle cut through in a few minutes, and the polypus, still held by the vulsellum, extracted (Fig. 17.)*

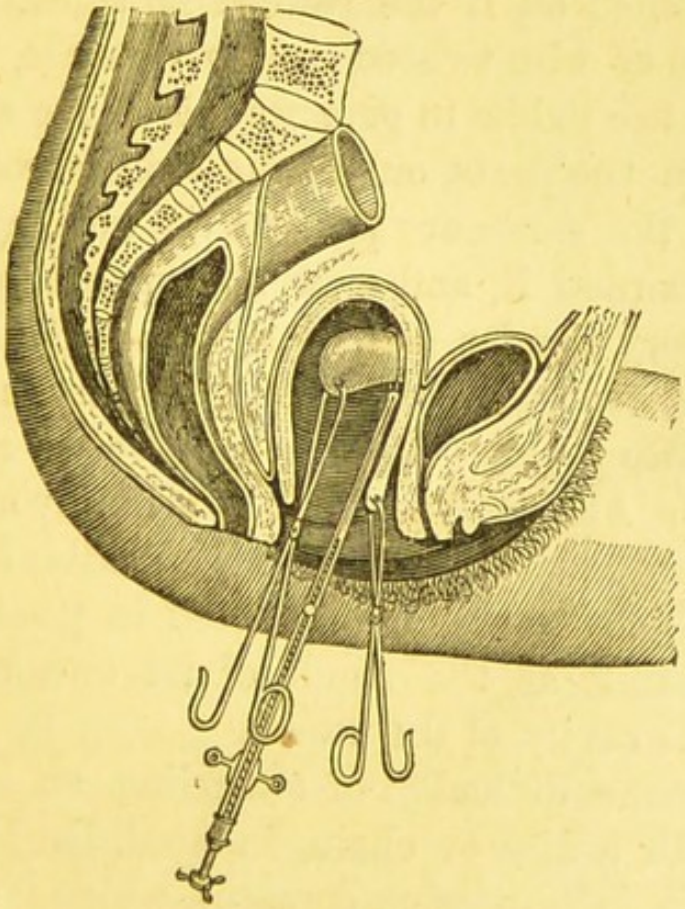
The whole of the inner surface of the uterus was then brushed over with strong nitric acid, with the double

* The operation as here described was first practised by Dr. G. H. Kidd, of Dublin.

intention of preventing hæmorrhage, and of destroying any unhealthy condition of the mucous membrane of the uterus, should such exist. The patient was, of course, under the influence of chloroform during the operation. She recovered without the least drawback, was allowed to walk about the ward in a few days, she has since menstruated normally.

This operation, though it is so easily described, is most

Fig. 17.



Ecraseur Applied for Removal of Polypus.

difficult to perform. The polypus is quite out of sight, and can with difficulty be touched by the finger, even when drawn down with the vulsellum; then the space, in which you must have at least two instruments as well as your finger, is so contracted that one sometimes almost

despairs of being able to carry the wire round the tumour; and even when this is accomplished your wire may break, and all the trouble has to be gone over again. This accident occurred twice in the case of the woman from whom the largest of the tumours I now show you was removed.

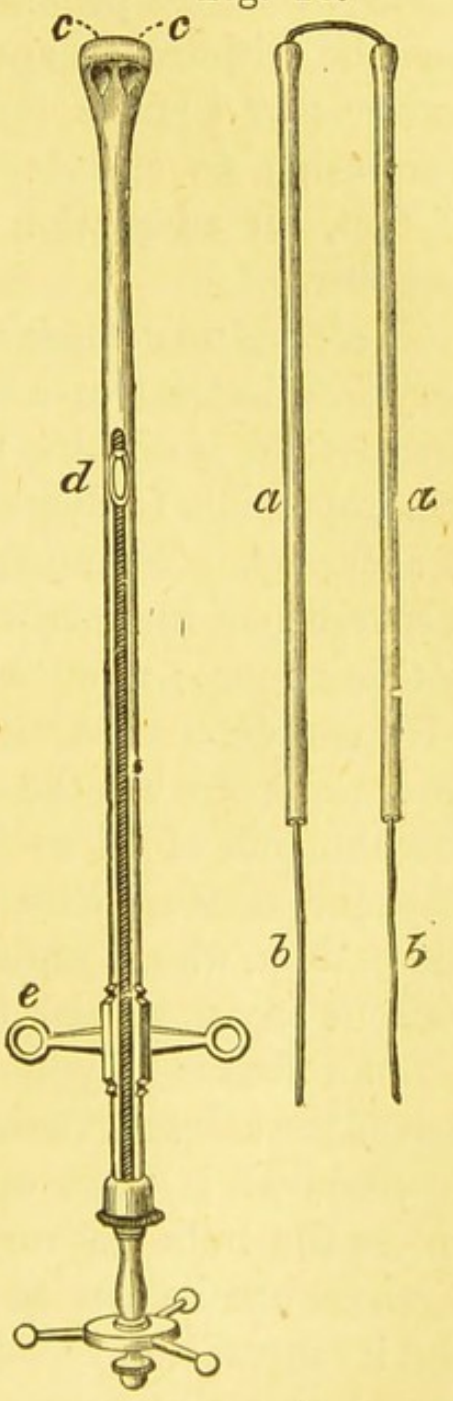
In the case I have just detailed I used a strong iron wire, and though the base of the polypus was three-quarters of an inch in diameter, it was sufficient for the purpose; still, as already mentioned, a single iron wire cannot be relied on if the pedicle be thick. I formerly used a cable of wire twisted tightly together, but some of the strands are liable to give way, and the ends become entangled in the parts, or, getting twisted round the extremity of the écraseur prevent it working; therefore I have discarded it, and now always, except when the pedicle is very slender, employ a strong steel wire,* such as that used for piano strings. For introduction of the steel wire into practice for this purpose we are indebted to Dr. Kidd. Although very stiff, it is hardly more difficult to manipulate in the uterus than the flexible iron wire, for the loop, which is always constricted in passing through the os, expands as the result of its own elasticity on reaching the cavity of the uterus.

The extreme difficulty of encircling an intra-uterine polypus with a wire or chain, induced Dr. Marion Sims to invent an intra-uterine écraseur, which is a marvel of ingenuity but very complex, and in practice has proved a

* Dr. Braxton Hicks, who was, I believe, the first to advocate the use of the wire cable, still gives it the preference, and is of opinion that a cable of well-annealed steel wire, not too smoothly coiled, answers much better than a single strong wire. He lays much stress on having the head of the écraseur slightly curved, so that there may be no angle on which the wire can cut, and on having the eye very much rounded at the edge, so that the cable may not be frayed.

failure. I tried it in two cases, and found it impossible to adjust, and consequently have been compelled to abandon its use.

Fig. 18.



Dr. Atthill's Écraseur.

Influenced by this difficulty, I was led to consider whether a less complicated instrument could not be devised, which would enable the operator to attain the desired end. I accordingly had this écraseur (Fig. 18) made by Weiss. It differs from an ordinary long wire écraseur only in having the end modified, so as to allow of the passage through it of two slender silver tubes, identical with those so well known as "Gooch's cannulæ." These (*a*, *a*) armed with a wire (*b*, *b*) of any strength can be passed with ease up to the base of the polypus; they are then to be separated, and, while one is held firmly, the other is carried round the pedicle. This can always be accomplished when a silken or hempen ligature is used, but it is very difficult indeed, to carry a stiff wire round a large tumour with them. However, I have done it, and cases from time to time occur in which this method proves very useful. Having once got the wire round the

tumour, the cannulæ are to be passed through the openings (*c*, *c*) in the extremity of the écraseur; the écraseur is then to be pushed up, guided by the cannulæ, till it comes in contact with the pedicle of the polypus, the cannulæ can then be withdrawn, and the wire being attached to the écraseur at *d* and *e*, the operation is completed as if we were using an ordinary wire écraseur. This is, in point of fact, an adaptation of the cannulæ of Gooch to the écraseur.

There has no greater advance been made in uterine surgery than in the treatment of intra-uterine polypi. Before the method of dilating the cervix uteri was introduced, it was impossible to diagnose their presence with any degree of accuracy. We might suspect their existence from the occurrence of hæmorrhage, and of uterine leucorrhœa, but nothing more; now, to use Dr. Marion Sims' language, "We can determine with the minutest accuracy not only their presence, but the size, shape, position, relations and detachments of all such tumours," and, by means of the écraseur, remove them in a short time without pain to the patient, who is under the influence of chloroform, and without any great risk to her life.

But a fibrous polypus may spring from the vaginal portion of the cervix, as well as from the interior of the uterus; its removal is then comparatively an easy matter; for unless the bulk be very great, the chain or wire of an écraseur can be carried round it without much difficulty, and its separation accomplished in a few minutes. These polypi, as well as those of intra-uterine origin which, having been expelled from the womb, have become vaginal, do not bleed so freely as those contained within the uterus. Dr. M'Clintock, in his work "*On Diseases of Women*,"

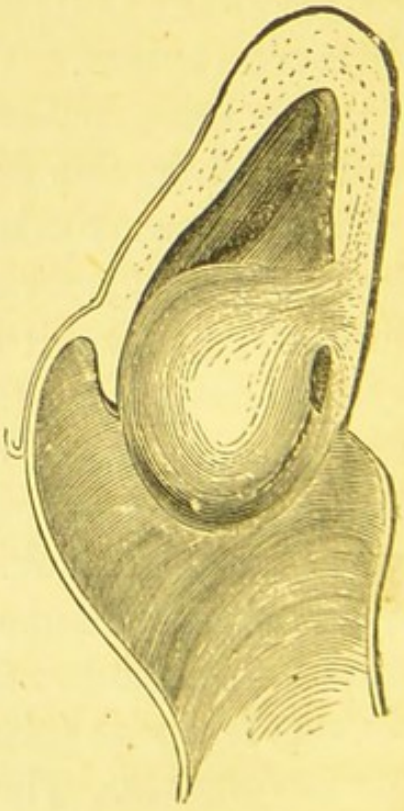
relates a striking example of this. He removed an enormous fibrous polypus which weighed thirty-four ounces, from the vagina of a woman aged fifty, and yet for two years previously she had not had any red discharge.

Here is a specimen of a remarkable form of fibrous polypus. You see it has a double attachment to the uterus. This patient was admitted into hospital suffering from profuse hæmorrhage. On making a vaginal examination, a large, firm, smooth, tumour was found projecting through the os uteri into the vagina. Anteriorly, and rather to the right side, this tumour could be traced up to the os, with the anterior lip of which it was continuous, and presented the character of a sessile polypus springing from the margin of the os uteri and lower segment of the cervical canal. The finger, passed up over the posterior surface of the polypus, could not reach the upper margin of its attachment. The sound penetrated to the distance of nearly three inches beyond the furthest point the finger could reach in this direction.

The patient having been etherized, the tumour was drawn down by means of a vulsellum, and, with some difficulty, I succeeded in carrying a steel wire, attached to a long écraseur, over the posterior surface of the polypus. The wire, however, broke before constriction had proceeded to any great extent, the attachment being evidently very dense and thick. A strong annealed wire was now in like manner carried over the tumour, but with no better success—it also broke; and a third attempt, with a very strong steel wire (piano string), resulted in the breaking of the écraseur. The attempt to remove the tumour with the écraseur having thus failed, I determined to detach it, if possible, by means of a pair of curved scissors. This

proved to be a matter of much difficulty, the tissue being extremely dense; but after the expenditure of considerable time, I succeeded in cutting through the portion attached to the anterior lip. However, when this was accomplished, I was disappointed at finding that the true pedicle had not yet been reached, but that the tumour sprang from a point in the uterine wall much higher up. The severance of the inferior attachment having given more room, and the tumour been well drawn down by means of the vulsellum, I at once proceeded to complete the operation. This was accomplished partially with the scissors and partly with a scalpel. Considerable hæmorrhage followed, to restrain which I applied the actual cautery, freely, to the bleeding surface; but, as it still continued, a pledget of cotton saturated with a solution of perchloride of iron in glycerine was inserted into the uterus and the vagina plugged with cotton wadding. Some hours subsequently, violent and incessant vomiting set in. This I attributed to the irritation caused by the pressure of the plug, for on removing it the vomiting ceased. No further unpleasant symptoms followed, and the patient made a rapid and good recovery.

Fig. 19.



Fibrous Tumour with Double Attachment.

The tumour, on examination, proved to be a fibrous polypus. It weighed half a pound, its greatest circumference was seven

inches, that of the true pedicle, four inches. The most remarkable point connected with the case was that the polypus had two attachments. It appeared to have been doubled back on itself, the point of the tumour having become so firmly and evenly united to the right side of the os uteri, that it was continuous with it. This condition is represented in the annexed woodcut (Fig. 19). The union I presume, must have occurred as the result of some inflammatory attack which took place when the point of the tumour had reached the os uteri, and that as the tumour subsequently grew, the descent of the point being arrested by its union to the lip of the uterus, the central portion was forced downwards, and thus became the most depending part. The length of the polypus, when *in utero*, measured from its pedicle to the most depending point, was five inches, but, when removed and unfolded, it measured seven and a-half inches.

This woman was in a very anæmic condition, and the heart's action extremely feeble. These circumstances induced me to select ether as the anæsthetic to be employed, and the result was very satisfactory. The pulse never failed, nor, during the whole of the long period she was under its influence—for the operation occupied an hour and a quarter—was it once necessary to withdraw it. The sickness which subsequently followed, I do not attribute, for the reason already stated, to the effects of the ether.

In addition to the two classes of polypi I have just spoken of, and which are undoubtedly out-growths from some portion of the uterine substance, two others are recognized by pathologists, to which I must allude. The one is termed the fibrinous, and is looked upon by

some authorities as the result of abortion. "The embryo having been extruded, the remains of the ovum left behind, form, with the extravasated blood, the foundation of a fibrinous polypus;" others believe these tumours to be "metamorphosed and adherent coagula of retained menstrual blood."

Next, the possibility of the remains of the placenta being capable of giving rise to polypoid bodies in the uterus has also been advocated, especially by Dr. Stadfeldt, of Copenhagen, from a translation of whose paper by the late Dr. W. D. Moore, in the *Dublin Quarterly Journal* for November, 1863, I have quoted the foregoing extracts, the perusal of which will amply repay any of you who may desire to become better acquainted with this subject. Dr. Stadfeldt does not believe that those small portions of the after-birth which nearly always remain after the placenta has been detached, and which usually come away with the lochia, are capable, even if retained, of giving origin to "placental polypi," but only when portions varying in size "from that of a walnut to that of a goose egg or larger, and which contain one or more cotyledons of the placenta" are left behind, and remain firmly attached to the uterine wall.

Ably adduced, however, as are the arguments of Dr. Stadfeldt, I am not satisfied that his views are borne out by the facts brought forward in support of them. They amount to this: that in four cases large portions of the placenta were found after death adherent to the uterus in women recently delivered; the longest interval which elapsed between delivery and death being but four weeks; in his other cases but a few days intervened. With similar instances every obstetric physician is familiar.

In the case related at the conclusion of my last lecture, I removed a portion of placenta which had been retained in the womb for nearly ten weeks after delivery, and which doubtless was during that time gradually being loosened from its attachment to the uterine wall, and its connection was probably only completely severed by the traction I made use of. That it was still connected with the uterus we may, I think, safely infer from the fact that the mass was not in any degree decomposed; but the persistence of vitality in a portion of placenta adherent to the uterus is a very different thing from its development into a polypus.

I may here allude to those soft, pearl-coloured bodies which are occasionally met with in the cervix uteri, and which are sometimes, though incorrectly, termed cystic polypi. They are composed of an albuminous, gelatinous fluid enclosed in a delicate membrane. They appear sometimes to be simply enlarged or hypertrophied Napothian glands, but are occasionally new growths. I pointed out to you an example of the latter form in one of the out-patients a few days ago, in whom a polypus grew from the lip of the os uteri; it was the size of, and not very dissimilar in appearance to, a grape, and had *not* caused hæmorrhage. When I attempted to seize it with the forceps, it broke, and discharged its contents. I cauterized its point of attachment freely with nitric acid, and when the woman presented herself again, after the lapse of a few days, no trace of this little polypus remained. In none of the cases which have come under my observation have they been of greater size than a hazel nut or grape, nor am I aware of any instance in which they were attached high up in the uterus. They nearly invariably grow from

some portion of the cervical canal, and are always sessile, that is, grow directly from their point of origin without the intervention of a pedicle; two or more may, and frequently do, occur at the same time. When once detected they are easily destroyed, either by pressure or by torsion. If situated within the cervical canal, they generally give origin to a glairy discharge, and nearly always cause hæmorrhage.

LECTURE VIII.

Fibrous Tumours—Definition of—Varieties of—Sub-peritoneal — Sub-mucous — Intra-mural — Enucleation — Intra-uterine Injections—Influence of Pregnancy—Spontaneous Cures.

I SHALL proceed to-day, gentlemen, to direct your attention to the subject of fibrous tumours of the uterus, a subject of even greater importance than that of polypus, which was last under our consideration, and unfortunately oftener beyond the reach of surgical interference. They are of very common occurrence.

A fibrous tumour may be defined as a growth composed of tissue, identical in structure with that of the uterine wall, but "disconnected" from it, being in general surrounded by a capsule of dense fibro-cellular tissue, which "is peculiarly dry and loose, so that when one cuts on the tumour it almost of itself escapes from its cavity" (Paget, *Surgical Pathology*). This fact of the fibrous tumour of the uterus being by means of its capsule disconnected from the surrounding tissue, distinguishes it from the ordinary fibrous polypus; a distinction which often cannot be made during life. The annexed woodcuts, copied from Paget, illustrate the difference between these two growths; the one (Fig. 20) being a section of an uterine out-growth or polypus, the other (Fig. 21) of a uterine fibrous tumour; the former being "continuous," but the latter "disconti-

nuous," with the substance of the uterus, although both in outward appearance are very similar.

It would be quite impossible in the brief limits of a clinical lecture to enter at any length into the pathology of a subject so extensive as that of fibrous tumours of the uterus. I can only glance at a few of the leading characteristics, referring such of you as desire further information on this interesting subject to the works of Paget, West, M'Clintock, Matthews, Duncan, and others.

Fig. 20.

Uterine Out-growth.

Fig. 21.

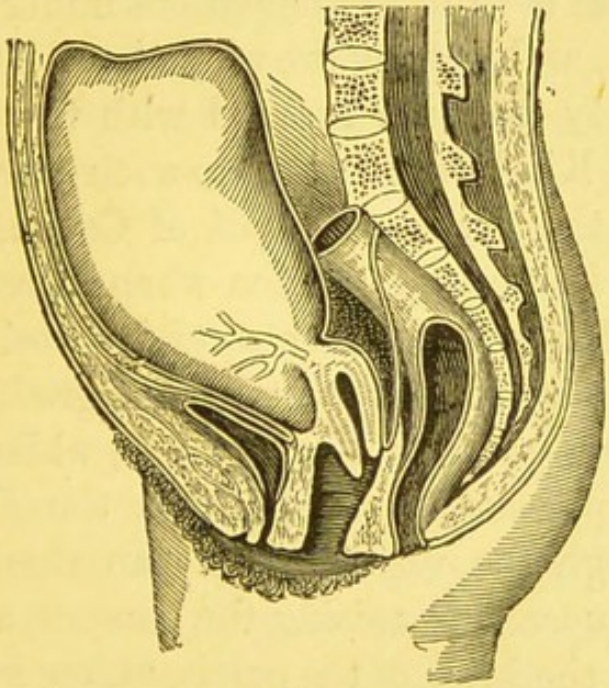
Uterine Fibrous Tumour (after Paget).

Fibrous tumours are met with of all sizes, from that of a grain of shot upwards; those of large size being by no means of unfrequent occurrence, while cases are on record in which they have attained a size greater than that of the uterus at the full term of pregnancy, and a weight of 70 lbs. or even more. Again, they may be solitary, but usually two or more are present in the same patient; they may spring from the peritoneal surface of the uterus, and can be felt through the abdominal wall: they may grow from the sub-mucous tissue of the uterus, or finally be developed within the walls of the organ. Consequently fibrous tumours are spoken of as belonging to one of three classes—namely, sub-peritoneal, sub-mucous, and intra-

mural, according as they are found to grow in one or other of the situations I have designated.

The sub-peritoneal or extra-uterine must be dismissed after a brief notice. They vary in size and appearance in even a greater degree than either of the other varieties; sometimes being numerous, small in size, and sessile, giving the surface of the uterus a nodulated appearance; or, on the other hand, they may be attached by a short and thick pedicle, as shown in Fig. 22, and sometimes, though

Fig. 22.



Sub-peritoneal, Fibro-cystic Tumour.

very rarely, by one so long and slender as to permit the tumour to float as it were free in the abdominal cavity, and finally even to dissever itself from all connection with the womb, and possibly to become attached to some portion of the peritoneal surface. When sub-peritoneal fibroids are pedunculated they sometimes descend into the pelvis, and then, by their pressure on the neighbouring organs, give rise to most distressing symptoms. When

this occurs the patient's sufferings are sometimes very severe, incessant desire to micturate, or total inability to pass water being frequently experienced. Of course it is impossible to give relief unless the tumour be raised from its position, and replaced above the brim. This is always a matter of great difficulty, sometimes an impossibility. The tumour invariably lies in the posterior *cul de sac*, between the rectum and the uterus, occupying much the same position which the impregnated uterus does when retroverted. With the view of raising it above the brim, the best course is to bring the patient under the influence of chloroform, and passing the whole hand into the vagina, to make steady pressure upward with the finger on the tumour. Dr. Kidd has adapted to such cases the method suggested by the late Dr. Halpin, of Cavan, for restoring the uterus to its normal position when retroverted during pregnancy. He introduces one of Barnes' largest sized India-rubber bags into the rectum, and gradually distends it with water by means of a syringe, while at the same time steady pressure is made with the finger on the tumour through the vaginal wall. In this way you will occasionally succeed in raising the tumour, and making it slip up above the brim of the pelvis, unless indeed the case be of long standing, and that it be bound down by adhesions; should such exist, your efforts will be not only useless, but injurious.

Sub-peritoneal fibrous tumours do not necessarily give origin to menorrhagia; indeed, as a rule, they do not seem to influence menstruation at all. Thus, in the case delineated in Fig. 22, the catamenia were quite regular. These tumours also generally spring from the posterior surface of the uterus or from the fundus. This, however,

is far from being always so; for in the patient from whom the drawing (Fig. 22) was made, the tumour grew from the anterior wall. This case was interesting too, as affording an example of that form of the disease termed *fibro-cystic*, in which a cyst is developed within the structure of the solid tumour.

The patient was under the care of my friend, the late Dr. Morgan, in Mercer's Hospital, through whose kindness I had an opportunity of seeing her. She appeared to be about thirty-five years of age, was married, but had never been pregnant. She stated that two years ago she detected a small, hard, movable tumour in the left iliac region; that a year subsequently she perceived what she supposed to be another distinct tumour in the right side; the latter was, however, but a projecting portion of one large central growth, which had steadily increased till she had attained the size of a woman near the full term of pregnancy, but she did not think that for the last few months she had become larger. Menstruation appeared regularly at intervals of three weeks, fluctuation was everywhere very distinct, and there was universal dulness on percussion. On making a vaginal examination, the tumour could be easily felt blocking up the brim of the pelvis, The anterior lip of the os uteri, which was greatly hypertrophied, projected into the vagina, the uterus lying quite behind the tumour. The diagnosis of uterine cystic disease was made, and all idea of surgical interference was given up. This patient subsequently died of an attack of acute peritonitis, and we had an opportunity of verifying our diagnosis. The tumour, which was of enormous size, consisted mainly of an immense cyst; it sprang from the anterior and upper surface of the

uterus, being connected to it by a short, thick pedicle. The woodcut, which accurately represents both the size, shape, and position of the tumour, was taken from a drawing made by my friend and former pupil, Dr. Hamilton Moorhead. Such tumours as that of which the foregoing is an example are now treated by the abdominal section, the operation being in the main similar to an ordinary ovariotomy, and the results obtained are encouraging. The operation, however, should not be undertaken unless the patient's life be in evident danger from the rapid growth of the tumour, the risk of life being greater than after ovariotomy.

The sub-mucous, pedunculated, fibrous tumour is, prior to its removal, in no way distinguishable from and is to be treated in a manner identical with the ordinary fibrous polypus of which I have already spoken. I shall not, therefore, allude to it any further, but shall proceed to the consideration of the third and most important variety of these tumours.

Intra-mural, or, as they are sometimes termed, parietal or interstitial fibrous tumours, are of frequent occurrence. They differ from the sub-peritoneal in two important features—namely, that they nearly always cause menorrhagia, and frequently pain, often of a very severe character, which is aggravated on the approach of each menstrual period, while their presence induces enlargement of the uterus, an effect not usually produced, at least to the same degree, by the sub-peritoneal variety. Thus, in the case just alluded to, though the tumour weighed upwards of 11 lbs., and was at least 25 inches in circumference, the uterus was of nearly its normal size and shape; while the presence of even a very small

intra-mural tumour has been known so to stimulate the womb that it has grown to a length of five or six inches; while its walls have attained a thickness of an inch or more.

The growth of an intra-mural fibrous tumour is sometimes very slow. In a case at present under my observation, and in which the cavity of the womb has attained a depth of five inches, no appreciable change has taken place during a period of several years. On the other hand, the tumour sometimes steadily increases in size, and then one of three results must occur—either it will bulge out the peritoneal surface of the uterus, and possibly may become a sub-peritoneal tumour, or it may continue to grow in the substance of the uterus, the whole of the organ enlarging as the tumour increases; or it may project into the uterine cavity carrying before it a covering of the muscular tissue of that organ. It is easy to conceive how this latter process, if continued, may result in the formation of an intra-uterine tumour, connected with the wall by a covering consisting of muscular tissue continuous with that of the uterus and of the mucous membrane covering it; and that this may in time elongate, and as it lengthens become more slender, till finally it passes out of the uterus; or even, the pedicle giving way, may be expelled from the vagina. Nearly all writers, with the exception of Dr. Matthews Duncan, admit the possibility of such an occurrence. He however denies that the uterine wall ever elongates before the true intra-mural tumour, but that the tumour is expelled *bare* into the uterine cavity, enucleation of the tumour, a process to which I shall have to refer by and by, having taken place spontaneously. However, one thing is quite certain, that these growths

frequently present themselves as well-defined tumours projecting into the cavity of the uterus.

Here is a specimen of a tumour so circumstanced; you see that it is connected to the uterine wall by a very extensive attachment, the circumference of the base being greater than that of any other portion of the tumour. It was taken from the body of a patient who recently died in hospital. She was a married woman, aged fifty-three. About five years ago she ceased to menstruate, but after a considerable interval again observed a sanguineous discharge to appear. This at first recurred with tolerable regularity, then gradually became more and more profuse, till finally it was continuous. Some months ago she perceived a tumour in the abdomen, which at one point, on the left side, was extremely tender to the touch; she also experienced constant pain in and was unable to lie on that side. When admitted into hospital she was in a very anæmic condition.

On passing the hand over the abdomen a large tumour could be felt lying rather to the left side, which, as I have already mentioned, was at one point very tender to the touch. On making a vaginal examination this tumour proved to be the uterus greatly enlarged. The sound passed to the depth of five inches. I at once proceeded to dilate the cervix with sea-tangle, on withdrawing which this large tumour was detected projecting into and filling up the whole cavity of the uterus. The patient's condition rendered it absolutely necessary that its removal should be immediately attempted. I endeavoured to accomplish this with Marion Sims' uterine écraseur, but, as stated in a former lecture, I found that instrument quite unsuitable for the purpose. I then tried an ordinary wire écraseur,

and succeeded in ensnaring the tumour, but the wire (an iron one) broke. Three times I succeeded in encircling the tumour with the wire, but the strain to which it was subjected was too great, and on each occasion it broke. As the patient was now much exhausted I desisted from any further attempt, besides I hoped that the great pressure to which it had been subjected might have been sufficient to destroy the vitality of the tumour, and that it would slough off. Matters went on very well for three days; indeed on the third day she expressed herself as being quite well. There was not any hæmorrhage; she had no pain on pressure, and the pulse was quiet; but on the night of the fourth day she was suddenly seized with a violent rigor, complained of intense pain over the abdomen, sank into a state of low, muttering delirium, and finally died comatose.

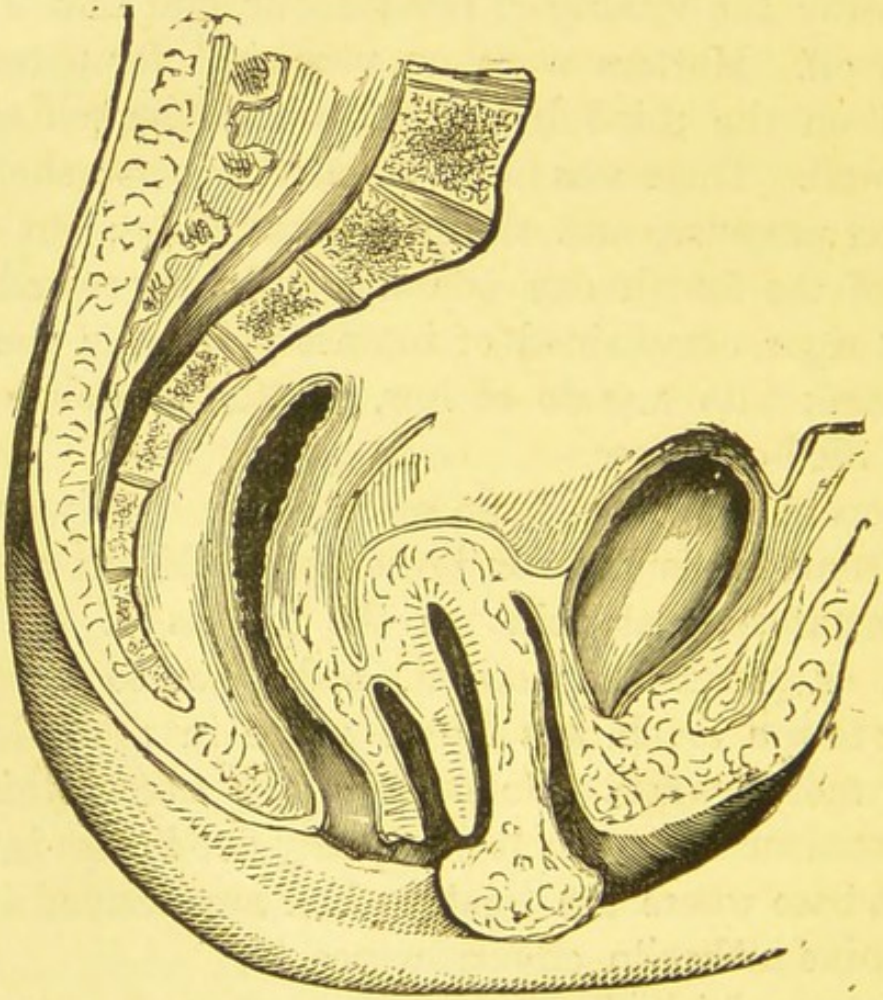
On opening the abdomen after death hardly any trace of peritoneal inflammation presented itself, but on raising the omentum, that point on the fundus of the uterus which, as previously noticed, had been so excessively tender to the touch, was found to be in a condition of actual mortification. On opening the uterus this enormous tumour was seen; it was nearly five inches in length, and its base where the ligature had surrounded it, measured nine inches in circumference.

This case fairly illustrates the great danger of any attempt to remove fibroids having extensive attachments to the walls of the uterus by means of the écraseur; the mortality attending the operation, in such cases, being, as far as my experience goes, very high indeed, I have consequently abandoned the operation.

The body is the usual seat of intra-mural fibroids, but

they may be developed in any part of the uterine wall. Thus I recently removed one which was embedded in the anterior lip of the os. The patient was an unmarried woman, aged about thirty. She stated that for some months past she had suffered much discomfort from a sense of weight and fulness in the vagina, and that recently

Fig. 23.



Intra-mural Fibroid of Cervix.

she perceived a tumour protrude from the vagina, which receded when she lay down but always reappeared when she walked about. Menstruation continued perfectly normal.

On examination, an ovoid mass of the size of a hen's egg

was seen projecting from the vagina, its long diameter being parallel with the vulva. The protrusion consisted of the anterior lip of the uterus, which was elongated and thickened; the uterus itself being drawn down by the weight of the tumour till it rested on the perineum, the os uteri being close to the vulva. The condition of the parts is correctly represented in the annexed woodcut (Fig. 23).

The diagnosis of a fibrous tumour embedded in the anterior lip of the uterus having been made, I amputated the elongated portion of the cervix, by means of the galvanic knife, hoping by that method to lessen the risk of hæmorrhage, which the thickened and hypertrophied condition of the part led me to think would be likely to occur—an opinion which the event verified. The apparatus employed was Grenet's. The galvanic knife consisted of a loop of platinum wire about half an inch in length, connected by means of the ordinary wire conductors with the battery.

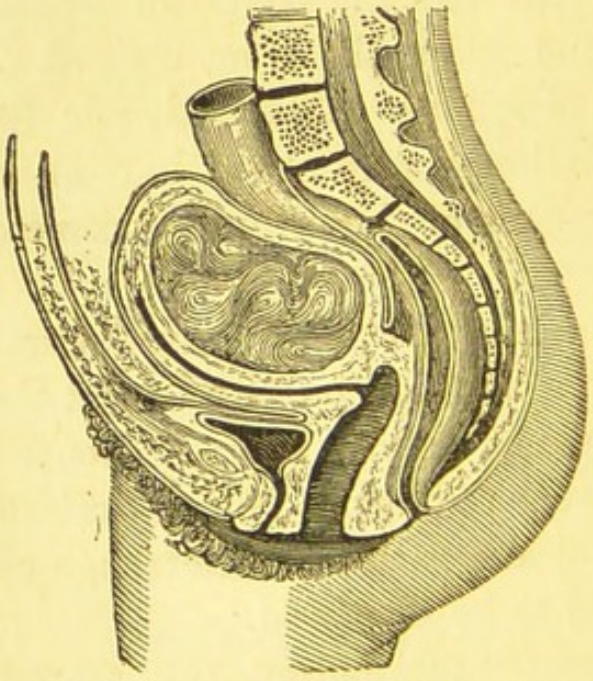
The cervix measured 3½ inches in circumference at the point selected for amputation. The great thickness of the tissue to be divided, and its extreme denseness, rendered the operation very tedious. The cauterization was sufficient to prevent any serious hæmorrhage occurring; still two articles had to be ligatured.

On subsequent examination, the amputated lip was found to contain a perfect fibrous tumour enclosed in its capsule.

In general, however, fibrous tumours appear as mere protuberances, bulging out the uterine wall, as is shown in Fig 24. Such tumours as these cannot be removed with an écraseur, and yet you cannot leave them alone

for health is undermined, and life itself frequently endangered by the hæmorrhage arising from their presence. The treatment to be adopted in such cases necessarily divides itself into the palliative, and the radical; the former consists of restraining the profuse flow, which occurs at each menstrual period, by plugging the vagina as recommended in a former lecture, and by the administration of ergot alone or in combination with iron. But this plan of treatment is irksome to the patient, and can only be looked on as a means of delaying the fatal results, which, if the hæmorrhage continue, must ere long follow unless more energetic means be adopted.

Fig 24.



Intra-mural Fibrous Tumour (after Sims).

Medicines without number have been administered with the view of causing the absortion of fibrous tumours of the womb. I have tried fully and freely most if not all of them, and believe them to be of no use. It would be waste of time for me to go through the long list of drugs

which have been recommended in these cases. I do not wish to deter you from trying them in your future practice; they will probably do no harm, but I think I can promise that they will effect little good. For myself I have lost all faith in the resolvent powers of medicines in the disease at present under consideration.

The very limited good produced by medicines has induced obstetric surgeons to adopt energetic measures for the treatment of intra-mural fibroids; no less than eight methods having been recommended, and practised with the view to the radical cure, of these embedded fibrous tumours. They are—1st, incision of the cervix uteri; 2nd incision of the tumour; 3rd, incision into the tumour and destruction of a portion of its tissue, a process to which the term gouging has been applied; 4th, enucleation of the tumour; 5th, avulsion, or the forcible tearing away of tumour from its attachment; 6th, the formation of a slough in the tumour and intervening portion of wall of uterus, produced by the use of the actual cautery; 7th, the removal of the uterus, the cervix alone being left by the abdominal section; and lastly, the removal of both ovaries. The object of this latter proceeding being, the bringing about artificially of the climacteric period, which is generally followed by the cessation of the hæmorrhage, and the gradual atrophy of the uterus and tumour.

The treatment by incision of the os is founded on a theory of the late Mr. Baker Brown's, according to which, "the division of the os and cervix uteri, permits the fibres of the body of the uterus to contract upon the contained tumour, and thereby to compress the vessels and prevent hæmorrhage." Whether this be the true explanation or not, one thing is quite certain, that the operation is

occasionally followed by good results, and in the case of very large tumours, which are contained within the uterus, and when the cervix is thinned and spread over them, it is fully justified.

I sometimes practice incision of the cervix with a different object, namely, for the relief of pain. In some cases, though there is but little hæmorrhage, severe pain is experienced at each menstrual period. Observing in one case that this pain was of an intermittent character, and evidently due to contractions of the muscular fibres of the uterus, I was led to the conclusion that by dividing the cervix fully I would lessen their tension, and probably relieve the pain, while if any tendency existed to spontaneous enucleation of the tumour, the division of the cervix would facilitate its expulsion from the uterus. Marked relief from pain has followed in two or three cases in which I carried out this practice, and I think it calculated to effect much good in suitable cases.

Incision of the tumour has been practised by Dr. Altee, in America, by Dr. Tracy, of Melbourne, and others, with success—a success which is probably due to the fact that the vitality of these tumours is nearly, if not altogether, destroyed by the incision having divided their capsules; for the fibrous growth itself is endowed with but a very low degree of vitality. I have on several occasions incised these tumours with the effect of moderating the hæmorrhage for a time, but it is an operation that cannot be relied on. To be enabled to practice incision, the os uteri must first be dilated freely; this proceeding is also essential, as a preliminary step to effecting enucleation.

Enucleation—that is the cutting down on, and division

of the capsule, the tumour being then seized and turned out of its capsule—is an operation suggested by a consideration of one of the processes by which Nature occasionally effects a spontaneous cure; the capsule and investing covering of the tumour becoming thinned at one point by a process of absorption, the contained tumour is then pushed out by the contractile powers of the uterus, and so finally expelled. Enucleation is advocated by Dr. Matthews Duncan. He also practises the operation of avulsion: that is the seizure of the tumour with a strong vulsellum and forcible avulsion of it from its attachment.

Avulsion is adopted by Dr. Duncan in cases in which spontaneous enucleation has already partially begun, or where that process, having been artificially commenced, has advanced to a certain extent. He advocates the practice in cases of fibrous tumour in which the patient's life is in great danger.

In the following case I successfully practised avulsion, enucleation of the tumour having been previously effected:—

C. S——, æt. 40, a widow; admitted into the Rotunda Hospital June 8, last. She stated that she has had two children, and always enjoyed good health till the birth of her last, sixteen years ago, after which she observed the menstrual periods to become profuse, and occasionally to re-occur twice in the month. Of late the intervals became longer, but the loss continued as profuse and as weakening as ever, and accompanied by great pain. In March last the hæmorrhage was so profuse that she was confined to bed for five weeks, and has suffered ever since from excessive weakness, and pain in the back and above the

pubes. She also suffered from a profuse leucorrhœal discharge of a yellow colour and fœtid odour.

On passing the hand over the abdomen, a large tumour of very dense structure could be felt rising out of the pelvis and reaching to within an inch of the umbilicus; this, on a bi-manual examination, proved to be uterine. The sound passed to the depth of nearly seven inches, the os uteri was patulous, and through it the finger reached a globular tumour, apparently embedded in the uterine wall.

The diagnosis of intra-mural fibroid was made.

It being evident that this woman would soon sink from the combined effects of the uterine hæmorrhage and profuse leucorrhœal discharge, I decided on attempting the removal of the tumour.

June 25th.—As a preliminary step, the patient being brought under the influence of chloroform, the cervix was divided freely on both sides by means of a pair of strong scissors, no hæmorrhage followed. She was then ordered the following mixture :—

R. Liq. ferri perchloridi, ℥ij.;
Liq. ergotæ (B.P.), ℥iv.;
Inf. ergotæ, ad ℨviij.

An ounce three times a day.

July 13th.—Being again brought under the influence of chloroform the tumour was seized with a strong vulsellum, and its base, easily reached through the now patulous cervix, was with a knife freed from its attachment to the uterine wall, to the extent of nearly two inches; an incision dividing the capsule was also made into the tumour on its anterior surface. A moderate amount of blood only was

lost, and it was not found necessary to have recourse either to the plug or the use of the perchloride of iron.

After the lapse of a couple of days the patient was again put on the ergot mixture already mentioned, with this remarkable result, that whereas when previously administered it did not seem to produce any effect, now the same medicine brought on powerful uterine action; each dose produced this effect within half an hour of its being taken, and the pains continued for four or five hours. Indeed such extreme suffering was produced that the patient absolutely refused to continue the medicine. This remarkable difference in the action of the ergot was probably due to the fact that its capsule being divided, the tumour was now, as it were, a foreign body in the uterine cavity.

27th.—A large section of the tumour has passed through the os uteri, and the rim of the os can be felt grasping the centre of the half expelled tumour.

August 10th.—The pains have ceased for the past day or two, and the ergot no longer induces uterine action. On examination the tumour is found to occupy the position of the fœtal head in the second stage of labour; the os uteri can no longer be felt. In fact the tumour has been expelled from the uterus, and is only attached to the fundus by a comparatively small base, and is virtually "enucleated."

No hæmorrhage whatever had occurred since the operation of July 13th. There is, however, a very copious vaginal discharge, brownish in colour, constantly present. The patient did not suffer any pain, but complained of great debility. It being evident that nature would do no more, and it being impossible to leave the patient in her

present state, the removal of the tumour by *avulsion* was decided on. The patient was accordingly brought under the influence of ether, and the projecting portion of the tumour being seized with a strong vulsellum, traction was employed, the left hand of the operator being introduced between the tumour and the pelvic wall, and the detachment of the tumour aided by the fingers of that hand. The tumour was thus finally torn from its attachments, and completely removed.

The cavity was now sponged out and plugged with pledgets of lint saturated in a solution of perchloride of iron. The hæmorrhage during the operation was inconsiderable. The tumour, which was of an irregular ovoid shape, weighed 13½ oz., and measured five inches in its longest diameter.

This patient made a rapid recovery.

There are less heroic modes of treatment, I would have you bear in mind, and under certain circumstances practice, before having recourse to surgical measures. One is the injection, after previous dilatation, of tincture of iodine, or of the liquor of the perchloride of iron, into the uterine cavity. This practice is warmly advocated by Dr. Routh, of London, and, if the cervix and os internum be first dilated, so that the injection may have a free and rapid exit, I do not think that it is likely to be followed by unpleasant symptoms. I know that marked benefit followed the injection of the tincture of iodine in the case of a lady, whom I had an opportunity of seeing, and in whom alarmingly profuse menstruation, dependent on the presence of a large fibroid, occurred from time to time.

Dr. Matthews Duncan has recorded two cases in which

he successfully restrained dangerous hæmorrhage, depending on the existence of a tumour in the uterus, by the injection, in each case, of one drachm of the liquor ferri perchloridi Dil., by means of a hollow sound, into the cavity of the womb. In his cases the cervix does not seem to have been dilated, a precaution I should always adopt.

The hypodermic injection of ergot has, for some years past, been extensively practised for the control of various forms of hæmorrhage, and with considerable success; latterly the same treatment has been adopted with the view of checking *post partum* hæmorrhage with good results, the main objection to its use being, that troublesome sores are apt to form at the site of the operation. Dr. Hildebrandt* has published the particulars of numerous cases in which he has practised the sub-cutaneous injection of ergot in the treatment of fibrous tumours of the uterus. He comes to the conclusion that ergot thus used is a powerful agent. In one case, a tumour which reached above the umbilicus is reported to have disappeared; in a second, a tumour, extending as high as the false ribs, descended below the umbilicus, and in four other cases, in which the treatment was otherwise less complete, there was an amelioration of the general and local condition. According to him, ergot thus employed, rectified menstruation in almost all the cases, rendering its recurrence regular, less profuse, and above all, less painful. It is true, as Dr. Hildebrandt remarks, that it is not easy to state precisely how the ergot acts; but he adds that it is very likely that, as a result of the contractions produced by the ergot in the nutritive vessels of the tumour, and in consequence of

* *Gazette Hebdomadaire de Médicine et de Chirurgie*, Vol. IX., page 443.

the compression exercised in all directions by the contractions of the uterine walls, the nutrition of the tumour is impeded, and that in time fatty degeneration and absorption follow. It is probable that intra-mural tumours are more easily acted on than sub-peritoneal. Dr. Hildebrandt's formula is: watery extract of ergot, three parts; glycerine, seven parts; and distilled water, seven parts. Such a solution is better, in his opinion, than an alcoholic one, as its use does not produce so much pain, and is not so liable to be followed by the formation of abscesses. He recommends that the injection should be made in the lower segment of the abdominal walls, between the umbilicus and pubis, and says, that after the operation the patient may be allowed to walk home. There is no doubt but that an aqueous solution is less liable to be followed by unpleasant consequences than a spirituous one. I at first adopted Dr. Hildebrandt's formula, and injected from three to five drops of the liquid extract of ergot on each occasion. Encouraged by his experience I injected, as you may remember, about three minims of the liquid extract of ergot under the skin of the abdomen, in two of our out-patients a few days since, and allowed them to walk home. Both suffered severely; one was confined to bed for three days subsequently, so intense was the pain she experienced, and so considerable the inflammation which ensued. I should not recommend you to employ the hypodermic injection of ergot, unless the patient could remain at rest.

But I have no hesitation in saying that the addition of glycerine is most injudicious. Since I have ceased to add it to the solution I have not had any unpleasant results.

I have given the hypodermic injection of ergot a full

and fair trial both in hospital and private practice. The details of the following cases will enable you to judge for yourselves as to the results which may be expected from this mode of treating uterine fibroids. They are doubtless too few in number to lead to any definite conclusion, but I think they establish two facts: 1st. That the hypodermic injection of ergot is often most efficacious in restraining uterine hæmorrhage depending on the presence of a fibroid; and 2ndly. That the treatment is not altogether unobjectionable. In three of my cases troublesome abscesses formed sooner or later, in two of the patients giving rise to considerable constitutional disturbance, while in a fourth I was obliged to abandon the treatment in consequence of the excessive pain it caused. It is worthy of special notice, however, that since I omitted the glycerine, no abscess or sore followed the injection.

Case I.—M. H——, aged 41, suffered from very profuse menstruation, the periods being invariably ushered in by such intense pain that for a long time previous to her admission into hospital she had been in the habit of taking large doses of opium nightly. On admission a tumour, as large as the fœtal head at full term, could easily be felt in the abdomen. The sound penetrated to the depth of 4½ inches, and after a careful examination, the diagnosis of fibrous tumour of the uterus was made. As the case seemed a very suitable one in which to try the effects of the hypodermic injection of ergot, I at once commenced this treatment, using for the purpose the *extractum ergotæ liquidum* (B.P.) in the proportion of three parts of the extract to seven of glycerine and seven of water, this being the formula recommended by Prof. Hildebrandt. The first injection of twenty minims of the

solution just named, containing about ℥iiiss of the ergot, was made on the 1st November, during a very profuse menstrual period. In about three hours it markedly checked the flow, but the pain caused was so intense that I did not venture to repeat the injection for several days; the flow, I should add, entirely ceased on the second day after the injection. On this occasion, and on all the subsequent ones, the fluid was injected behind the great trochanter, the needle being made to penetrate into the substance of the glutæus muscle, on either side alternately, to the depth of upwards of half an inch, previous experience having proved to me the correctness of the observation made by Dr. Keating, in *The American Journal of Medical Science,* that the tendency to inflammation occurring after the injection of ergot, is much lessened by passing the needle through the cellular tissue into the substance of the muscle.

The second injection was made on the 9th November, and the third on the 16th. From that date the injections were repeated on every second or third day, and once or twice on two days in succession, according to the intensity and duration of the pain produced by the operation, until fifteen injections had been given. Two abscesses then formed on the site of the two last injections, and these became so very painful and troublesome that the treatment had to be discontinued for three weeks.

The effects hitherto observed were these:—1st. Very intense and long-continued pain always followed the injection. The duration of the pain was from five to twelve hours, after the lapse of which time, it gradually subsided, leaving her greatly exhausted. She was unable to sleep during its continuance. I was therefore obliged, except on

two occasions, to allow at least forty-eight hours to elapse between the injections. 2ndly. The duration of the catamenial periods, which on admission had been fourteen days, was, on the recurrence of the first period after the ergot had been injected, reduced to four days; on the second to two days, and on the third to one day. 3rdly. The *periods* were rendered free from pain; formerly the pain at these times had been very intense. It is necessary to add that the two last injections were not made in accordance with the rule I had laid down, namely, that the needle should penetrate deeply into the substance of the muscle, for during my absence the needle was introduced on one occasion over the head of the femur, and on the other occasion very near the crest of the ilium.

It was not until the 5th January 1874, that the abscesses and sinuses resulting from the injection of the ergot, had sufficiently healed to permit a resumption of the treatment. On recommencing I resolved to employ a different preparation of ergot, and accordingly procured some of "Wigger's pure ergotin."

This, instead of being a liquid, is a granular substance, and very insoluble; I injected two grains of it on the 5th. The catamenia had appeared two days previously; the flow lasted four days without pain. I consider this satisfactory state, however, as due to the previous treatment. On the 10th, having passed the sound into the uterus, the flow returned and continued for four days more; and again, after an interval of but four days, the discharge reappeared, continuing for six days, the hypodermic injection being repeated daily. On the 2nd February I made the following note—"The hypodermic injection of the Wigger's ergotin did not cause any pain,

but it seems to be inefficacious, for the profuse metrorrhagia has returned."

I now decided on trying Bonjeau's ergotin; this is a thick fluid, easily mixable with water. I injected ♏iv of it dissolved in ♏xx of water. This caused some pain, less, however, than that produced by the English preparation. The injections were from this date continued regularly, ♏v of ergotin being injected every second day.

March 11th.—Catamenia came on after twenty-four days' interval, accompanied with intense pain, which was only relieved by the hypodermic injections of morphia. The flow ceased on the seventh day. I believe Bonjeau's ergotin to be less efficacious than the English preparation, but on the other hand to be much less irritating.

Shortly after the last date this patient was compelled to return home. She resides in a very remote part of Ireland; and I have been unable to learn anything of her present state.

Case II.—This case is of little practical value, excepting so far as it illustrates the difficulty of carrying out the treatment of fibrous tumours by the hypodermic injection of ergot.

A. M——, aged 25, a pale, unhealthy-looking woman, six months married, presented herself among the out-patients of the Adelaide Hospital. She stated that of late she was hardly ever free from profuse and weakening hæmorrhage. Her appearance fully confirmed this statement; she was evidently anæmic and in very bad health. On examination a large interstitial fibroid was diagnosed. In her case I commenced treatment by injecting ♏iv of Bonjeau's ergotin, dissolved in fifteen minims of water. The fifth injection, however, was followed by the forma-

tion of a very painful and troublesome abscess, and on recovering from it she left hospital, nothing would induce her to permit the injection to be repeated. I think it probable that the rapidity with which abscesses formed in this case, may be accounted for by the fact that the woman was evidently ill-fed, and in a thoroughly bad state of health.

Case III.—An unmarried lady, aged 48, came under my care in February, 1874, at the termination of a very profuse menstrual period. She stated that eight years previously she had detected a tumour in the abdomen, which had gradually increased to its present size. Menstruation had for many years been profuse, becoming markedly so during the last two years, with occasional hæmorrhagic discharges during the intervals, never, however, till recently of sufficient severity as to cause alarm. She had always been more or less of an invalid, and was, moreover, the subject of well marked cardiac disease. The tumour was very large—it reached nearly to the umbilicus. The sound penetrated to the depth of five inches. The diagnosis of fibrous tumour was made. When I saw her first she was in a state of great danger. The excessive loss of blood had reduced her to a condition of extreme debility. She fainted constantly; the pulse was small, feeble, and intermittent. Under treatment she gradually improved; but being convinced that a recurrence of the profuse loss would probably prove fatal, I determined to try the effects of the hypodermic injection of ergot, not, however, without considerable hesitation, for in her debilitated state I dreaded the formation of abscesses, which my previous experience had shown me were so prone to occur.

I should add that at this time the periods recurred at

intervals of not more than fourteen days, and that during this interval she was seldom free from a slight red discharge.

The first injection of two grains of Bonjeau's ergotin was made on the 20th February, the same formula being used as in the former case. The needle was inserted behind the great trochanter, and made to penetrate to the depth of at least an inch. No pain followed. From that date to the 20th of March the injection of the Bonjeau's ergotin was continued with tolerable regularity on every second day; occasional intermissions, however, occurred, when from a feeling of excessive debility, arising generally from the heart's action being more than usually irregular, she seemed unable to bear the pain, trifling though it was. Five grains of the ergotin were during this period injected on each occasion. The hæmorrhage returned on the 20th March so very profusely that I was obliged to plug the vagina; the interval had, however, lengthened a little.

After an interval of three weeks I recommenced the injections. When it had been employed for some days one improvement in her condition was noticed, the slight red discharge, which had never been absent for more than a few hours together, ceased to appear; the interval between the period also was prolonged, the flow not appearing on this occasion till the 8th May—an interval of a whole month. The loss on the 10th was very heavy, but the period lasted only five days. This result I looked upon as most satisfactory, but at this juncture the seat of the last injection inflamed, and after much suffering an abscess formed, and though opened in good time, a troublesome fistulous sore resulted, which healed up very slowly. The treatment, therefore, was necessarily suspended.

On the 22nd she unfortunately caught cold, and suffered from an attack of rheumatic fever. This attack greatly reduced her strength, and shortly after she died rather suddenly, with the symptoms usually attending the formation of a clot in the pulmonary artery. There can be no doubt but that the injection of Bonjeau's ergotin in this case was productive of marked good. The sanguineous discharge which had been for a very long time constantly present disappeared; the interval between the periods lengthened from fourteen to twenty-four days, and the periods themselves became correspondingly shortened; but, notwithstanding every possible precaution, an abscess formed.

The results so far obtained discouraged me greatly, and for a time I discontinued treating fibroids by the hypodermic injection of ergot, but Dr. Hildebrandt's further published statements as to his continued success induced me to give it another trial. I resolved, however, to omit the glycerine from the solution, and to use the *extractum ergotæ liquidum*, B.P., dissolved in water alone, and since doing so I have not been once troubled by the formation of abscesses and sores, which in my former cases had given rise to such pain and suffering. The following is a brief abstract of some of the cases I have recently treated:

Case IV.—Mrs. ——, a widow, aged 38, never pregnant, the subject of a large intra-mural fibroid; suffered from sense of weight, prolonged but not profuse menstruation, and an intra-menstrual flow, lasting for two or three days. I injected ℥v of the *ext. ergotæ liq.*, with ℥x of water twice a week for fifteen weeks, with the following results: total cessation of the intra-menstrual discharge of blood, and shortening of the menstrual period by about thirty-

six hours, no pain following the injection either in the tumour or at the seat of the injection, which was made behind the trochanter in each side alternately.

Case V.—A married woman, never pregnant, the subject of a large intra-uterine tumour; menstruation recurred at intervals of fourteen days, lasted for ten days or longer; is blanched, anæmic, and very feeble.

Ergot injected six times at intervals of two days; pain experienced at seat of the first injection, but not subsequently; menstrual flow did not come till after an interval of twenty-four days, and lasted but six days; on its cessation dilated uterus and removed an intra-uterine fibrous polypus.

Case VI.—M. G——, æt. 48, unmarried, admitted 6th January in a state of extreme anæmia, pallid and ex-sanguine, the result of long-continued uterine hæmorrhage; she was the subject of a huge intra-mural fibroid, very hard in texture, and easily felt through the abdominal parietes. It reached to within an inch of the umbilicus, and dipped deep into the pelvis. Menstruation lasted usually for fourteen days, and in fact she has during the past year been seldom free from a red discharge. She was also in constant pain.

January 14th.—℥v of the liquid extract of ergot and ℥x of water was injected into the substance of the glutæus muscle; this was repeated on the 17th and 20th January; she felt pain in the uterine tumour in about an hour after the injection had been made. From this latter date the ergot was injected every second day, and now she stated that severe pain commenced, in the tumour immediately after the injection, and lasted for five or six hours. But little pain or soreness was felt at the seat of injection,

which was made into the substance of the muscle on each side alternately, the needle always penetrating to the depth of an inch or more. A menstrual period commenced on the 22nd January, and lasted to the 28th.

7th February.—Severe pain experienced in back and stomach, followed by vomiting, relieved by hypodermic injection of morphia; injection of ergot suspended.

9th.—Injection of ergot resumed.

13th March.—Since last date the injection of ergot has been practised regularly every second day; great pain referred to the rectum now experienced after defecation; catamenia appeared on the 18th, after an interval of three weeks; is stronger, and were it not for the great pain would be decidedly better.

To have gr. 4 iodoform in a suppository each night, ℥vii of ergot to be injected daily, with ℥vii of water.

18th.—Iodoform suppository has been of much use in relieving the pain experienced in the rectum, also that felt in tumour; it gives as much relief as a morphia suppository, and does not cause sickness.

3rd April.—Menstruation appeared on the 1st, lasted only two days, tumour seems smaller.

21st May.—Menstrual period just over, lasted four days; now experiences incessant pain of the most wearying character, sometimes agonizing, demanding the repeated administration of morphia hypodermically; appetite quite gone, confined altogether to bed from the pain.

The injection of ergot had been now carried on continuously for more than four months, and upwards of sixty injections had been given, but though the hæmorrhage had been controlled, the patient's condition was in no way improved, and I reluctantly abandoned the treat-

ment. The result was that the hæmorrhage returned with such violence as to necessitate plugging the vagina; all this time, however, she was free from the least tendency to the formation of sores or abscesses at the site of the injections, and this although more than sixty had been given.

The conclusions to be deduced from the foregoing cases are these:—

1. That *Wigger's pure ergotin* is inert, and useless for the purpose of hypodermic injection.

2. That *Bonjeau's* ergotin, hypodermically injected, exerts a marked effect on cases of uterine fibroids, lessening the amount of blood lost and shortening the periods, but that its use is liable to be followed by the formation of abscesses.

3. That the *extractum ergotæ liquidum*, B.P., is still more efficient in checking uterine hæmorrhage occurring in these cases, but that its use sometimes causes severe pain, and that troublesome abscesses occasionally form at the site of the injection, though these are not likely to occur unless glycerine be added to the solution.

I should add that I have also tried the ergotin discs prepared by Messrs. Savory and Moore, but I do not think them to be at all as efficient as the liquid extract.

From what I have already said you will gather that I am not an advocate for surgical interference in cases where large uterine fibroids exist, if it can possibly be avoided. My reasons for arriving at this conclusion are two-fold, namely, that the vast majority of such cases go on tolerably well for years, and that if by plugging the vagina, by the hypodermic injection of ergot, or the use of other means at our disposal, we can check profuse menstruation when

such exists, there is every probability of the patient's condition improving when she arrives at the climacteric period, and when the uterine functions cease to be actively performed. But on the other hand cases are from time to time met with in which surgical interference is imperatively called for. That of M. B——, whose case I have just been alluding to, is one of these. You remember that by the hypodermic injection of ergot we succeeded in restraining the excessive menstrual flow, but that her condition did not improve; that she became day by day more anæmic and weak, apparently as a result of the excessive pain from which she suffered, pain so intense that the administration of morphia by the rectum or by the skin was imperatively required, not once, but three or four times during each twenty-four hours. Her appetite failed, she became daily more pallid, and if possible more emaciated; life could not under such conditions endure very long. She begged too that something might be done which would afford a chance of relief from her sufferings, and expressed herself quite indifferent as to the result, life having become unbearable to her. But any possible operation involved grave responsibility, as well as serious risk. We had to deal with a tumour which extended to within an inch of the umbilicus, and dipped down deep into the pelvis. The os, which was very small, lay far back, and could only be reached with difficulty; the sound penetrated to the depth of five inches, proving that the whole uterus was implicated. The tumour itself was firm, and dense to a degree, and I was satisfied that to dilate the os uteri, and attempt the removal of the tumour through it, would be a futile as well as a dangerous proceeding. I therefore, after much consideration, re-

solved to attempt its enucleation by the use of the actual cautery, applied freely through a speculum to the anterior portion of the cervix, which was stretched out over the tumour, and projected so much in front of the os that it could be reached without much difficulty. I decided on adopting this course in consequence of the satisfactory results of this treatment obtained by Dr. Greenhalgh, of London. The following conditions are, according to him, essential for success in such cases:— 1st. That the tumour be intra-mural. 2nd. That it extend down to, and involve the neck of, the uterus. 3rd. That it bulge out the neck, so that on introducing the speculum the portion of the neck selected can be easily reached by the cautery. All these conditions existed in the case now under our consideration. Accordingly, having placed the patient under the influence of chloroform, I introduced a full-sized speculum, and through it applied the actual cautery, causing it to burrow deeply into and through the texture of the cervix till it penetrated into the substance of the tumour. I then placed in the vagina a pledget of lint, saturated with glycerine, and withdrew the speculum.

On recovering from the effects of the chloroform the patient expressed herself as being freer from pain, and easier than she had been for a long time previously; this condition, I pointed out to you, was probably due to the lessening of the extreme tension of the uterine tissue, which had so long existed, caused by the steady growth of the tumour within its substance.

On the separation of the slough the tumour could be felt through the opening formed in the wall of the uterus like a fœtal head inside a rigid os uteri. I now divided with a

knife the portion of the uterine wall intervening between the opening made by the cautery and the canal of the uterus, thus laying bare the surface of the tumour to a considerable extent. The results obtained were twofold, namely, relief from intense pain, and diminution of the amount lost at the menstrual period, for the next period was by no means excessive. The actual cautery was applied on four occasions, at intervals of some weeks. As a result, the condition of the patient greatly improved, though the tumour remained nearly as large as ever; still her general health is now fairly good, and she is able to earn her livelihood as a needlewoman.

The removal of both ovaries, as a means of arresting the hæmorrhage, is an operation now performed with fairly good results in cases in which it cannot be controlled by other measures, and in such cases it is a perfectly legitimate operation, but unfortunately one often of very great difficulty, for the ovaries generally lie deep in the pelvis, and when a tumour of any size exists are almost out of reach. The operation, consequently, under such circumstances is hardly feasible; nor when they have been successfully removed is it always followed by the arrest of the hæmorrhage, while the mortality after it is considerable.

The operation of hysterotomy, that is, the extirpation of the uterus, has also of late been repeatedly performed with success in cases in which life was seriously endangered from the occurrence of uncontrollable hæmorrhage, or from the tumour pressing on the neighbouring viscera to such an extent as to endanger life. And it has been contended that it is not necessarily more dangerous than ovariotomy. In this opinion I cannot, however, agree. But I must refer you to the work of Mr. Spencer Wells

on "Ovarian and Uterine Tumours," and to the writings of other authors for further information on this important subject.

I have now given you an outline of the pathology and treatment of the various forms of fibrous tumours, but there yet remain two interesting and important phases of their history, to which I must allude before concluding the subject; the one, the increase and subsequent decrease in their size, which is sometimes observed; the other, their occasional absorption, transformation, or even elimination.

All fibrous tumours, especially the sub-mucous, when they hang into the cavity of the uterus are liable to become œdematous, and to this cause many of the recorded cases of enlargement and subsequent decrease in their size is referable. But in addition to this cause menstruation and pregnancy undoubtedly influence both the condition and size of these growths. In many cases a fibrous tumour, which ordinarily is productive of no discomfort to the patient, becomes at each menstrual period the seat of pain. This is a fact I have several times noticed. That actual increase in bulk should also occur at the epoch is easily understood. The following case illustrating this is recorded by Dr. Ernest Lambert, of Paris:*—"Age of patient, thirty-eight; for ten years past a tumour appeared before each menstrual epoch, disappearing in turn to re-appear again; for a year past it ceased to disappear, and had become the seat of severe pain." After death a large fibrous tumour was found growing from the anterior surface of the uterus. From

* *Etudes sur les Grossesses de Myomes Uterins. Par le Dr. Ernest J. Lambert. Paris.* 1870.

same author I quote the two following instructive cases:—The first is on the authority of M. Depaul, who relates that having been summoned to a patient at a distance from Paris, he found three physicians in attendance on a primipara, supposed to be three months pregnant. She had suffered for some time past great difficulty both in passing water and in defecation, and for four days previous to M. Depaul seeing her had been unable to empty either the bladder or rectum, even the catheter could not be passed except with great difficulty. She suffered from the most powerful expulsive pains, and her agony was very great. M. Depaul recognized the existence of a large fibrous tumour which filled the pelvis; the patient's state was one of great danger. With difficulty he reached the os uteri, introduced the sound, and brought on premature labour. The next day a fœtis, "flattened like a sheet of cardboard," was expelled; in a short time this tumour had decreased to a third of its former size, and at the end of four months was not larger than a small apple; it was situated in the anterior wall of the uterus, near the neck.

The second case was that of a woman, æt. forty-four, who had given birth to several children; she was admitted into hospital on the 21st of March, 1869. The membranes had ruptured before her admission, and the feet of the child were in the vagina. The child was extracted alive, and in a few minutes the placenta was expelled. On placing the hand on the abdomen shortly after a tumour as large as a child's head was felt at the fundus of the uterus; supposing that it was a case of twins a vaginal examination was made, but no fœtus could be felt. As the placenta had come away, and as there was not any

hæmorrhage, it was not deemed right to explore the interior of the uterus, but the hand laid on the abdomen easily detected the presence of a tumour as large as the head of a fœtus at the eighth month of pregnancy; below this large tumour a smaller one could be felt, which was supposed at first to be the elbow of the child; careful auscultation, however, failed to detect the sounds of a fœtal heart; the diagnosis seemed very obscure. The woman declared that there was no cause for anxiety, as she had these tumours after each confinement, and that they always disappeared in a short time. The next day the large tumour was unchanged, but in place of the sharp projecting tumour a globular one of smaller size existed; two days later the large one only could be felt. She died of fever on the 12th of April, twenty-three days after delivery. On making a *post mortem* examination two fibrous tumours were discovered, the larger the size of a hazel nut, the other still smaller. Dr. Lambert concludes by saying, "we saw in this case a woman in whom at the moment of her accouchement there existed in the parietes of the uterus, tumours of which one had the volume of the head of a fœtus at the eighth month; these tumours could be as clearly made out as if they had been laid bare, for the abdominal walls were very thin and flaccid, and the autopsy discovered but two little fibrous tumours, of which the largest was but the size of a nut." It would be quite foreign to the scope of these lectures for me to enter on the subject of the influence which fibrous tumours exercise on pregnancy, but the two cases just quoted clearly prove that pregnancy stimulates them to a very dangerous degree; and this knowledge should certainly induce us to warn any woman in whom they exist, should she

consult us on the subject, that marriage ought not to be thought of.

Fibrous tumours when left to themselves not unfrequently undergo changes which may not only alter their character, but also result in an actual cure. One of the most remarkable of these changes is the development of cavities, or cysts, in their substance. These are especially likely to form in tumours, the texture of which is loose. According to Sir J. Paget, this may be due either to a local softening and liquefaction of portions of the tumour, with effusion of fluid in the part affected, in which case the cavities are irregular and without distinct parietes; or they may be true cysts, their cavity being lined by a membrane. In either case they may be small and numerous, or of such great magnitude as to be mistaken for and treated as ovarian cysts; a very serious mistake indeed, and one unfortunately too often made. I shall, however, have more to say with reference to this point when I come to speak of ovarian tumours, and shall therefore defer making any further remark on this part of the subject for the present.

But Nature also makes an effort, and not unfrequently a successful one, to effect a cure in these cases. Dr. M'Clintock has pointed out five methods by which this result may be attained—namely, by 1st, absorption; 2nd, calcareous transformation; 3rd, detachment; 4th, sloughing or disintegration; 5th, expulsion by the uterine contractions. Examples of absorption have been frequently recorded, and are sufficiently numerous to induce us to postpone surgical interference if the symptoms be not urgent, and especially if the patient be near the climacteric period. I have two such cases at present under

observation. In one, menstruation, which for several years past has been very profuse, is now at the age of forty-nine become much more moderate in quantity; this patient refused to submit to any local treatment.

Cases are met with in which calcareous deposits have been formed in the substance of fibrous tumours, and it is possible that the process may extend to the entire tumour. Here is a specimen of such which I removed after death from the body of on old woman who died of pneumonia in the Adelaide Hospital.

Detachment and separation is most likely to occur in cases of the sub-mucous variety, for in the intra-mural the formation of a long pedicle is very unlikely, and, according to Dr. Matthews Duncan, never does take place, and unless this happens the spontaneous detachment is a very unlikely occurrence.

But on the other hand, in the case of the embedded intra-mural tumour, a cure sometimes results by a process of sloughing, which either gradually breaks up the growth, or if that process be confined to its muscular and mucous coats, frees the tumour, and permits its spontaneous enucleation.

Expulsion is but a variety of the curative process last spoken of; the uterus nearly always makes an attempt to expel any substance which is formed within its cavity, consequently polypi and fibrous tumours are, as a matter of fact, frequently extruded by its contractions; but in the case of the latter the expulsion seems to be of but doubtful occurrence, unless as the final stage of the process of spontaneous enucleation just spoken of.

I have purposely avoided at present entering into the question of the differential diagnosis of fibrous tumours,

because I think I shall treat this part of the subject with greater advantage when considering that of ovarian disease, with which alone it is likely to be confounded, for to mistake a fibrous tumour for pregnancy is hardly possible; the size and shape may, indeed, resemble that of the pregnant uterus, but the slow increase in its size, and the occurrence of menorrhagia, should alone in most cases suffice to prevent error. There is one symptom, however, often present in a fibrous tumour which may mislead the careless observer, and that is the occurrence of a *bruit de soufflet*. It is of but little value as a diagnostic sign, and I merely mention it to put you on your guard lest you should be misled by its occurrence to suppose pregnancy existed. You must not, however, forget that pregnancy is not incompatible with the presence of a fibrous tumour, and a very serious complication it is.

LECTURE IX.

Inflammation of the Cervix Uteri—So-called Ulceration of—Symptoms of—Treatment of by Local Depletion, Nitric Acid, and Potassa Fusa.

THE great frequency with which inflammatory affections of the unimpregnated uterus occur, resulting as they do in some of the most distressing and intractable ailments to which women are liable, renders the subject of inflammation of the womb, to which I propose to call your attention to-day, one of great importance.

The cavity of the uterus is divided into two parts by the os internum; the upper part, that of the body, is triangular in shape, and lined by a mucous membrane, which, according to the researches of Dr. John Williams,* becomes thickened at the approach of each menstrual period, then appears to undergo a process of fatty degeneration and rapid decay, and finally is disintegrated and cast off, forming with blood and mucus the menstrual discharge. It is of a light grey colour, and smooth on the surface. The lower part, commonly designated the cervical canal, is circular, bulging in its centre, and contracted at each extremity. It too is lined with mucous membrane, continuous with that of the body, but differing from it in being thinner, and in being arranged in transverse folds, which form the *arbor vitæ*, the interstices between which conceal numerous mucous follicles and glands. Both

* *Obstetrical Journal*, No. XVII., page 324.

these portions may simultaneously be the seat of disease, or one may be attacked independently of the other.

When speaking to you on the subject of menstruation I pointed out the important part which the mucous membrane lining the cavity of the uterus played in the performance of that function; how easily the discharge which at the catamenial epoch it pours out might be checked, and the ill results to be anticipated from such an occurrence. But, in addition to affections following on interrupted or suppressed menstruation, an unhealthy condition of both the body and cervix is likely to occur as the result of abortion, or of imperfect recovery after labour at the full term, when the involution of the uterus being retarded, that organ remains enlarged and congested, a condition most favourable to the occurrence of inflammation. Other causes too, not so clearly traceable, produce congestion and inflammation of the cervix, and as frequently of the body of the uterus.

Inflammation of the cervix is never of a very acute character, but the cases we meet with in practice vary greatly in intensity. The more acute form has two well-marked stages. In the one active congestion of the part exists, manifested by great vascularity of the mucous membrane covering the vaginal portion of the organ, which becomes of a bright pink colour, and by engorgement and tumefaction of the substance of the cervix, which, however, feels soft and elastic to the touch. In the other, the mucous membrane, being denuded of its epithelial covering, presents the appearance of an irregular abraded surface of a deep red hue, which pours out a profuse muco-purulent discharge, and is studded with numerous papillæ. The os uteri is patulous, while the cervical

canal is generally blocked up by a thick, tenacious discharge secreted by the cervical glands. This in appearance resembles the white of egg, and is always pathognomonic of endo-cervical inflammation. If you succeed in removing it, and get a glimpse at the membrane lining the interior of the cervix, you will find it also to be of a bright red colour; we seldom see a case in the very early stage of the disease, the symptoms rarely being then sufficiently severe to induce the patient to seek medical aid. But in general ere long the inflammation extends to the cervical canal, and then, her sufferings being increased, she applies for relief.

We have at present in the house a well-marked example of inflammation of the neck of the womb in the first stage, occurring in an unmarried woman. The mucous membrane covering the cervix is smooth, nor does abrasion at any point exist; the os uteri is patulous, and a copious, transparent, tenacious discharge issues from the cervical canal, proving that its lining membrane participates in the disease.

Now contrast the appearances presented in this case with those you saw in the patient occupying the opposite bed. S. B., æt. thirty-four, has had two children, her illness dates from the birth of the last, two years ago. The cervix is greatly thickened and indurated; its vaginal portion, which is of a deep red colour, instead of being smooth and even as in the other, is covered over with little red papillæ which bleed on being touched, while a copious muco-purulent discharge, that has to be wiped away before the parts can be seen, exudes from its whole surface. The os uteri is very patulous, and is plugged with a mass of tenacious, opaque mucus, which, when

removed after much trouble, discloses a cervical canal, whose lining membrane is seen to be congested and covered with large vascular elevations. Here you have an example of the second stage of cervical inflammation; the substance of the cervix is thickened as in the former case, but in addition induration exists, and the mucous membrane is denuded of its epithelium. The surface thus exposed is covered with granular looking elevations, which indeed have sometimes been mistaken for granulations; they are not, however, new growths at all, but merely the papillæ which abound in this situation, hypertrophied by the existence of the surrounding inflammation. Finally, you have a profuse muco-purulent discharge secreted from the diseased surface, the unhealthy condition of the mucous membrane, with its enlarged and prominent papillæ secreting a muco-purulent discharge, being a secondary condition the result of the previously existing inflammation.

This latter affords also an excellent illustration of the condition termed "ulceration" of the cervix; a term the accuracy of which has been warmly disputed. Dr. Bennet defends its use, and, on the authority of Petit, defines ulceration as "a solution of continuity from which is secreted pus, or a puriform, sanious, or other matter." But as we usually associate the idea of ulceration with a loss of substance of greater extent than that produced by the mere removal of the epithelium, I am inclined to agree with the view held by Dr. Farre, that the term ulceration should only be applied to cases in which the loss of substance extends deeper. However, if Dr. Farre's definition be strictly adhered to when speaking of affections of the uterus, examples of ulceration of that organ will prove to

be very rare. I have never seen a single instance of true ulceration of the cervix uteri, as defined by him, unconnected with specific disease; indeed I do not believe that such occurs. All this, however, is a mere dispute about a term, and although it is not strictly correct, still the word "ulceration" continues to be frequently applied to the condition we are considering.

But cases less severe than the one of which I have been speaking constantly occur. In some there is a mere abraded circle of limited extent surrounding the os uteri, a condition which terminates abruptly just inside the os; or you may have cases intermediate in severity, in which the vaginal portion of the cervix being denuded of its epithelial covering presents an irregular surface of a deep red colour, studded with the hypertrophied papillæ I have already spoken of, the cervical canal, however, not being implicated in the disease. Such a surface as that which I have last endeavoured to describe almost invariably secretes a copious purulent discharge, and in addition there is usually a certain amount of vaginitis present. You had an excellent example of this in the case of Mrs. H., in whom the discharge was so profuse and weakening that it was for its cure she sought relief.

The milder forms of abrasion of the cervix are not of themselves of any great importance; they seldom give rise to distressing symptoms, nor do they necessarily cause sterility, even when as severe as in the case of Mrs. H., for she became pregnant long before the abrasion was cured; but then the mucous membrane of the vaginal portion of the cervix alone was engaged. It is quite otherwise when that lining the cervical canal is implicated, for in that case the os becomes patulous, its lips are

everted, and a copious, viscid discharge is invariably poured out by the cervical glands; this completely fills up the os, and is seen hanging from it as a rope of thick, semi-opaque mucus. Such a discharge is an effectual bar to conception, and is pathognomonic of cervical disease; whenever you see it you may at once pronounce that the patient is suffering from inflammation of the mucous membrane lining that canal. Perhaps the best name for this condition is *endo-cervicitis;* by many, however, it is termed *cervical catarrh.* In it the lining membrane, being congested, is of a deep red colour, subsequently hypertrophy takes place, and the rugæ become prominent, while its surface is covered with numerous vascular papillæ. When this stage is reached, not only is the os patulous, but the cervical canal is relaxed throughout its entire length, as high at least as the os internum.

If you proceed to introduce a sound in a case such as I am describing, you will probably find it a matter of considerable difficulty. This difficulty is caused by the point of the instrument becoming entangled first in one, and then in another, of the folds of the hypertrophied mucous membrane, and it is only after the lapse of some time and the exercise of much patience that these difficulties can be overcome, and the cavity of the uterus reached. Some drops of blood are nearly certain to follow the withdrawal of the sound, which should not occur when the lining membrane of the cervical canal is in a healthy condition.

In addition to these local changes, symptoms of a general character are invariably present; thus the patient is nearly sure to complain of back-ache, and of pain and tenderness on pressure over the ovary, especially on the left side; pain too is frequently complained of along the

edge of the false ribs. When this is severe, and particularly if it becomes aggravated at the approach of the catamenial period, I look on it as indicating that the disease has extended up to the os internum. Then irritability of the bladder and often distressing pruritus are frequently present, and after a time menstruation is very likely to become profuse and weakening—indeed not unfrequently it is for the cure of the menorrhagia that we are consulted. This was so in the case of Mrs. B., to whom I alluded when speaking of menorrhagia, and of several others whom from time to time we have had in hospital.

A very instructive case was that of the young married woman, Mrs. ——. Her illness commenced soon after marriage; she did not suffer much pain, but latterly had hardly ever been free from a sanguineous discharge; there was also profuse leucorrhœa present. Before coming under my observation she had taken various astringents without benefit. The cause of the failure of this treatment was apparent, for on making a digital examination the cervix felt as soft as a piece of sponge; and on looking at it through the speculum it presented an appearance which I can only compare to that of a large raspberry. The slightest touch was followed by copious bleeding. You saw that with the view of checking the hæmorrhage I brushed over the surface with the saturated solution of perchloride of iron in glycerine; this answered that purpose effectually; subsequently, as you may remember, I repeatedly applied the fuming nitric acid, and the part gradually assumed a more healthy appearance. She was discharged cured, but not till after the lapse of many weeks. I was inclined to attribute the condition of the

cervix in this case to excessive sexual intercourse in a young woman of delicate constitution.

In the foregoing outline I have endeavoured to trace the progress of a case commencing in inflammatory congestion of the substance of the cervix, in which the mucous membrane covering its vaginal aspect participating in the disease becomes after a time abraded; that lining the cervical canal also being implicated. This is a very common course for the affection to follow, and an example of it is afforded in the patient to whose case I have just drawn your attention. It is, however, far from being the invariable one; for without doubt inflammation in many cases first attacks the cervical mucous membrane, abrasion of its vaginal surface following, the inflammation and consequent induration slowly extending into the substance of the cervix.

But we may have cervical catarrh, indicating the existence of inflammation of that canal, while the mucous membrane covering the lips of the uterus remains perfectly healthy. When this condition exists we generally find that the case is one of long standing, and that it has crept on slowly and insidiously, the patient dating back the commencement of her illness many years. I shall refer to this condition again by and by.

Your treatment of cases of inflammation of the cervix uteri must be guided by the stage which the disease has reached and the form which it has assumed, as well as by the patient's state of health. We seldom see the acute form till the stage of abrasion has been reached. It was recently the custom to treat all such cases on one method, namely, by applying nitrate of silver, either solid or in solution, to the surface of the cervix—a treatment in general altogether insufficient, and sometimes positively

injurious. Bear in mind that you are dealing with inflammation, or, at least, congestion of the organ, and it is rational that your first step should be to relieve that congestion by local blood-letting. There are two ways of effecting this—one by the application of leeches, the other by incising or puncturing the cervix. Leeching is a very troublesome and tedious process, as well as most uncertain in its results; at one time you cannot get the leeches to take at all, or at most not more than one or two, at another they will bite freely, and perhaps, in spite of all the care you can take, will fasten on the vagina, and profuse bleeding may follow. I have seen such profuse bleeding follow the application of leeches as to compel me to plug the vagina; I therefore now, as a rule, rely on the other method, and practise it very much in the same way as recommended by Dr. Hall, of Brighton, in the *Lancet* for the 3rd September, 1870.

Fig. 25.

Hall's Knife.

Merely scarifying the surface of the cervix is not sufficient, especially in a case of a very chronic nature and accompanied by induration; I therefore always puncture the vaginal portion of the cervix, tolerably deeply, in two or three places. The depth to which I make the point of the knife penetrate varies from $\frac{1}{8}$ to $\frac{1}{4}$ of an inch, according as the cervix is soft and vascular, or firm and indurated; for in the former case it bleeds very freely, in the latter it is sometimes difficult to obtain a sufficient quantity of blood. Dr. Hall has had a knife specially made for the purpose by Coxeter (Fig. 25), but I often use a long, straight-backed, French

bistoury, terminating in a very sharp point, which, if the former is not at hand, answers very well. One great advantage of this plan of treatment consists in the ease and rapidity with which it can be performed. Having exposed the cervix with an ordinary speculum, you make two or three punctures rapidly, and then allow the requisite quantity of blood to flow through the speculum, on withdrawing which the bleeding, unless the part be very vascular, generally ceases; the operation seldom causes pain; if it does, it subsides in a few minutes. You can practice this treatment with equal facility in the wards of the hospital, in the extern department, in your own study, or at the houses of your patients.*

You have seen how extensively I have carried out this system of local depletion, and how often considerable relief has followed its use. Of course it is not invariably successful. I have found it productive of benefit even in cases of chronic inflammation of the cervix, although the induration then so constantly present often prevents our obtaining a sufficient quantity of blood.

My rule, then, in nearly all cases of inflammation of the cervix uteri is, first, to relieve the congestion by puncturing the part. I only omit this when menorrhagia depending on a granular condition of the cervix is present; for should such exist, depletion is in general unnecessary and appears sometimes to be injurious. Your object in the latter case should be to check at once the weakening discharge. This is best effected by applying freely to the diseased surface the strong nitric acid, or a saturated solution of the perchloride of iron in glycerine, which is much less irritating than either the tincture or the liquor

* See also Lecture V.

and is generally sufficient, if applied freely, to check temporarily the bleeding. To apply these you should always expose the cervix with one of Fergusson's glass speculums, and make your applications through it. However, this proceeding is but palliative, and as in all severe cases the membrane lining the interior of the cervix is implicated in the disease, it is essential to treat every portion of the unhealthy surface. In the majority of cases the cervical canal is relaxed, and the os uteri so patulous that this can be effected without difficulty. I apply carbolic acid in mild cases, but in severe cases, the strong nitric acid freely, to the whole of the cervical canal in the manner recommended in a previous lecture. This was the course adopted in the case of the woman S. B., of whom we have been speaking. I confined her to bed for three or four days subsequently, and then treated the still unhealthy surface by the application of a solution of tannic acid in glycerine of the strength of ten grains to an ounce. I strongly recommend the use of this application in cases of abrasion and inflammation of the cervix after nitric acid or potassa fusa has been applied; it is especially useful if vaginitis be present. Saturate a pledget of cotton in the glycerine, pouring about a drachm of it into the palm of the hand; and soaking it up with the cotton. Repeat this process several times till the cotton is thoroughly saturated, and then, attaching a piece of string to facilitate its removal, introduce it up to the os uteri through the speculum, and leave it there for twenty-four hours; the patient can withdraw it herself by means of the string. This treatment is often productive of great benefit; the tannin acts as an astringent, while the glycerine produces a copious watery discharge. The result of this combined

action is that the surface of the cervix, on the withdrawal of the cotton, looks paler and altogether much cleaner and healthier. If much irritation exists in the vagina, omit the tannin and use plain glycerine, as it relieves the vaginal congestion more effectually than when it contains an astringent. It was from Dr. Marion Sims' excellent work on Uterine Surgery that I first learnt the great value of glycerine in the treatment of uterine disease, and I daily appreciate it more. Remember, however, that glycerine must be very freely used; I commonly employ from half an ounce to an ounce for a single application. The quantity which even a small pledget of cotton will absorb is surprisingly large.

If the nitric acid be freely applied to the vaginal aspect of the cervix and to the whole length of the cervical canal, and that the unhealthy surface be subsequently dressed with the glycerine of tannin, you will in many instances effect a cure in the course of a few weeks. We had an example of this in the patient alluded to. If the surface be indolent, it may be necessary to apply to it occasionally a solution of nitrate of silver, of the strength of from twenty to thirty grains to the ounce. In cases of less severity I sometimes use, instead of the nitric acid, the zinc points introduced into practice by Dr. Braxton Hicks; or, if the nitric acid has failed to effect a cure, I introduce them subsequently; they are often productive of great benefit, specially when no induration exists. They cause, however, a good deal of pain and considerable local irritation.

From time to time you will meet with cases in which the various modes of treatment I have recommended, including the repeated application of the fuming nitric acid, will

fail to effect a cure: this is likely to occur when the entire substance of the cervix is implicated; when both the mucous membrane lining its canal and that covering its vaginal aspect, being in an unhealthy condition, are studded with vascular papillæ, and at the same time the cervix itself greatly engorged, and frequently, in my opinion, also œdematous. Menorrhagia was present in all the cases of this form of uterine disease which have come under my observation; all of them, too, were of considerable standing.

Take as an example the case of Mrs. ——, who has only been recently discharged from hospital; her illness commenced three and a half years ago, and appears to have had its origin in a well marked attack of inflammation; for she suffered at the time from acute pain over the left ovary, which only yielded to the application of leeches and other antiphlogistic treatment. Latterly she experienced much pain before each menstrual period, while the flow became very profuse and lasted for seven or eight days. The uterus proved on examination to be considerably enlarged, and was also anteflected; the cervix was elongated, tumefied, and engorged; its vaginal surface was covered with large, highly vascular granulations, from which the hæmorrhage evidently proceeded; a similar condition existed in the cervical canal. I therefore dilated it, and applied the strong nitric acid freely to the diseased surface, but I was disappointed in the result. The next menstrual period was so profuse that I had to plug the vagina, and though I applied the nitric acid repeatedly, she improved very slowly indeed. I now determined to have recourse to potassa fusa, and to destroy with it, if possible, the whole of the diseased sur-

face. Whenever this caustic is used it should be applied through a glass speculum, and rubbed freely against the part, till you are satisfied that the tissues have been destroyed to a considerable depth; a pledget of cotton saturated in vinegar should be previously inserted between the lower lip of the os uteri and the edge of the speculum, so as to neutralize any of the potash which may escape, and which would otherwise irritate the vagina; that canal should also as a further precaution be washed out with vinegar immediately after the application. In this case I cauterized the whole surface of the cervix in the manner described; this did not cause much pain. The only local treatment I subsequently adopted, was placing in the vagina daily, pledgets of cotton saturated with glycerine. Of course I confined the patient to bed for several days. The slough was thrown off in less than a week. The surface then presented a very healthy appearance, and healed up rapidly, so that at the expiration of about three weeks I was able to allow the patient to return home cured.

In these severe cases the total destruction of the diseased surface by caustic potash is by far the most effectual means at our disposal; and if care be taken to limit the application to the cervix, and if the vagina be washed out freely immediately afterwards with vinegar, no injury to that canal nor any unpleasant consequences need be feared.

The milder cases of abrasion of the cervix will generally yield to the use of nitrate of silver or carbolic acid. Tincture of iodine sometimes seems to agree, but I do not rely on it. I have, however, noticed that its use seems sometimes to allay the back-ache from which the subjects of uterine diseases suffer so much. I use a saturated

solution of carbolic acid in spirit, and in mild cases it answers very well.

In concluding my remarks on the treatment of the more acute forms of cervical inflammation, especially when, as nearly always is the case, the disease implicates the membrane lining its canal, I must repeat that you have to deal with a most troublesome and often an intractable affection, and one which frequently can only be cured by active and energetic measures.

I have now given you an outline of the history and treatment of the more acute forms of inflammation of the cervix terminating in congestion and thickening of the mucous membrane lining its canal, and of the follicles with which that membrane is studded, while its vaginal portion denuded of its epithelial coat is covered with numerous vascular papillæ; these little bodies, projecting as they do from a rough and abraded surface, and secreting a copious muco-purulent discharge, having been sometimes mistaken for granulations. The term ulceration is often applied to the condition I have described; a term the correctness of which is very doubtful, there being no excavation and but little loss of substance, while the discharge is merely the ordinary product of inflammation of a mucous membrane.

I shall now proceed to direct your attention to those still more common cases of what we must call chronic inflammation of the cervix. In it you have considerable thickening and induration of the whole substance of the cervix, which feels hard, and frequently is very sensitive to the touch. A vaginal examination, or the introduction of a speculum, causes considerable pain, while sexual intercourse may for the same reason be unbearable. We

frequently find this condition associated with flections of the uterus; when these occur the fundus generally participates in the sensitive condition of the cervix.

On exposing the cervix with a speculum its surface will frequently be found to present its normal appearance. If any abrasion exists it will generally be confined to a narrow rim surrounding the os uteri, which is frequently patulous, and, in women who have borne many children, sometimes nodulated and irregular, this condition being apparently due to lacerations which may have taken place during labour. In addition you not unfrequently have the tenacious discharge issuing from the lips of the os uteri, which is pathognomonic of disease of the cervical canal. These cases of chronic inflammation and induration of the cervix, with little or no abrasion of the mucous membrane, are met with constantly, especially among women of the lower class, who leave the recumbent posture and engage in their ordinary avocations a few days subsequent to delivery or abortion. But it is far from being restricted to them; you will meet with numerous examples of it among delicate women in the upper classes also.

I do not think that there is any affection more distressing than chronic inflammation of the cervix. The pain in the back, the ovarian pain, and the pain felt along the inside of the thighs, is even more severe than that experienced in the more acute stage, while sexual intercourse often becomes unendurable. The unfortunate patient never seems to be free from pain even for a day, while it is sure to become aggravated by fatigue, by exposure to cold, and by the approach of each menstrual period. In addition irritation of the bladder, manifested by frequent desire to micturate, often becomes a very troublesome and distress-

ing symptom. This symptom is one common, no doubt, to other affections of the uterus, but I think I have observed it more frequently in conjunction with chronic inflammation than with any other. In fine, though not likely in itself to shorten life, chronic inflammation of the uterus often renders the patient little better than a confirmed invalid, and makes life itself a burden.

The constant distress and even actual pain which patients suffer when labouring under chronic inflammation of the cervix frequently gives rise to the suspicion of the existence of cancer; but the mobility of the uterus, the absence of hæmorrhage, and of a fœtid discharge, will generally enable you to assure your patient that, though likely to be for a long time a sufferer, she is not labouring under malignant disease. The induration too resulting from chronic inflammation of the cervix is very different from that caused by the deposit of cancerous matter, the surface in the former being smooth, in the latter nearly always irregular, and frequently presenting at one point a sharp, well-defined edge, indicative of the existence of cancerous ulceration. I have known the nodulated condition of the lips of the uterus, which is sometimes met with in women who have borne many children, and in whom the cervix has become indurated, to be mistaken for malignant disease; but these irregular projections, surrounding as they do the os uteri, are very different in feel from those produced by cancer. The induration which takes place in cases of chronic inflammation of the cervix is, according to Dr. Bennet, due to the effusion of plastic lymph into the tissue of the cervix.

I have already noticed that the occurrence of extensive abrasion of the vaginal surface of the cervix is compara-

tively rare in these cases: it is not easy to explain this circumstance. I am, however, inclined to think that the access of the disease is so very slow, that while lymph is gradually deposited in the tissues of the cervix the mucous membrane escapes being implicated; it is different, however, with respect to the lining membrane of the cervical canal, which is frequently engaged to a greater or less degree; it is not vascular and engorged as in the more acute forms, but thickened and hypertrophied. In fact, whilst in the acute form you have a soft, tumefied cervix, its surface denuded of epithelium, and secreting a copious muco-purulent discharge, the cervical canal participating in the disease, and menstruation at the same time being nearly always profuse, you have in the chronic form a hard, indurated cervix, frequently covered with an apparently healthy mucous membrane, while a copious tenacious discharge, indicative of chronic inflammation of its lining membrane, is seen to issue from the cervical canal, menstruation being very often diminished in quantity. These cases have long been the opprobrium of obstetric physicians, while their extreme frequency give them an importance which the direct effects they exercise on the duration of life do not warrant.

The modes of treatment suggested for the cure of this affection have been very numerous. Nitrate of silver, nitric acid, the nitrate of mercury, and iodine have been all repeatedly tried with the like result, and that generally is—failure. Equally inefficacious, as far as the local disease is concerned, but probably more injurious to the general health, have been the long courses of the iodide of potassium and of the bichloride of mercury, to which such patients have been subjected. In my opinion medicines are nearly useless in this disease.

The failure of all ordinary means, induced the late Sir James Simpson to try what good could be effected by the employment of potassa fusa applied directly to the indurated cervix, with the view, "partly of destroying the indurated tissues by direct decomposition, and partly to soften down the remainder by new inflammatory action." He found it "far more manageable, speedy, and certain than any other method." I have myself used the potassa fusa with success, and I have never seen any unpleasant consequences resulting from its application. I do not, however, make use of it in cases of chronic inflammation of the cervix; still I would not object to your using it should the means I usually employ fail to effect good results.

I have already (page 185) explained to you the mode in which this powerful caustic should be applied, and the precautions you should adopt to prevent its injuring the vagina, and therefore need not repeat them here. I may, however, add that when much induration exists, one application will seldom be sufficient, and that it may be necessary to apply the caustic, a second or even a third time, after the lapse of two or three weeks.

Dr. Greenhalgh treats cases as these I now speak of by the application of iodized cotton to the cervix. The cotton is first uniformly saturated with glycerine, a strong solution of iodine is then added and equally diffused under pressure in a closed vessel; twenty per cent. of iodine may thus be combined with the cotton.* The size, or weight, of the pledget of cotton to be used, is, therefore, determined by the quantity of iodine

* The iodized cotton can be had of Messrs. Savory and Moore, 143 New Bond street, London; or of Graham and Co., 30 Westmoreland street, Dublin.

required. A pledget of the requisite size is placed in contact with the cervix, and outside this, a roll of cotton saturated with glycerine; strings are attached to these to enable the patient to remove them, when necessary. The iodized cotton doubtless exerts a marked influence on the cervix, and many cases derive considerable benefit from its use; but I find, on the other hand, that not a few patients are unable to tolerate the strong taste of iodine which is perceived in the mouth in a very few minutes after its application, and remains for a long time. In some patients too it produces considerable irritation of the vagina, though in the great majority of cases the glycerine prevents this occurring.

But by far the best results I have obtained in the treatment of this obstinate affection, have been from the free use of the actual cautery. I always employ Paquelin's thermo cautery, using one of the smallest of the platinum points, and making it penetrate to the depth of about half an inch into the substance of the indurated cervix. I apply it through an ordinary glass speculum, and it rarely causes any pain. The cautery should be used at intervals of a week or two, the length of time between each application being regulated by the state of the cervix, the track made in its substance being always allowed to heal before the cautery is again used.

At first I was in the habit of using the cautery at the patient's house, and keeping her in bed for at least the remainder of that day; but I found that it caused so little discomfort, that I now generally use it in my own study. I have carried out this treatment steadily both in private practice, and in this hospital, for the last three years, without once knowing any unpleasant results to

follow; and I have no hesitation in commending it to you. Should you not have the thermo cautery at hand, a slender metal rod, made red hot in a spirit lamp, will answer very well.

I have also tried electrolysis in these cases, driving one needle into each lip, to the depth of about half an inch, but I cannot say that I am satisfied with the result; and while patients seldom seem to feel any pain from the use of the actual cautery, they complain much of the discomfort, if not actual pain, which the electric current causes.

I have already alluded to lacerations of the cervix uteri as being of not uncommon occurrence during parturition, and these when they extend deep are a not unfrequent cause of *post partum* hæmorrhage. Sometimes these unite perfectly, and the cicatrix may be seen subsequently through the speculum as a white line, but in the majority of instances union never takes place, and the os uteri remains "fissured" as it is termed, a matter in general of no great importance, but sometimes the laceration extends deeper, and then, specially if it be bi-lateral, results in eversion of the lips of the os, and considerable irritation of the everted surface may follow. For a time the condition usually escapes notice, but sooner or later it excites a greater or less amount of local and constitutional disturbance, the symptoms being those met with in the severer forms of cervicitis, for which the mode of treatment already laid down generally suffices.

Dr. Emmet lays great stress on this condition, assigning to it the origin of nearly every possible form of uterine disease, including epithelioma, and insisting that these cases should always be treated by surgical means.

His operation consists in fixing each flap of the torn cervix with a tenaculum, then denuding each of the torn surfaces by means of knife or scissors, and bringing them into apposition by means of wire sutures.

In severe cases this method is perfectly justifiable, and in some should certainly be practised, but the cases demanding the operation are, in my opinion, but few, and judging from the records published by Emmet and others I believe that the tendency is often to perform it unnecessarily. Such of you as desire to learn Emmet's views on this subject will do well to study his work on the diseases of women, in which he states them at considerable length.

LECTURE X.

Endo-Metritis—Definition of—Two Classes of—Treatment of—Division of Cervix in Chronic Metritis.

I have hitherto spoken only of inflammation of the cervix uteri and of the lining membrane of its canal, but the body also is liable to be effected in a similar manner, and cases of chronic metritis and of endo-metritis are very common.

I wish you to understand that when I speak of endo-metritis, I refer to inflammation of the interior of the body of the uterus only, that is of the part lying above the os internum. This term is used by some, I think erroneously, so as to include inflammation of the canal of the cervix also. Inflammation of this latter portion should be spoken of as endo-cervicitis, a term made use of by Dr. Marion Sims, and which I prefer as being more definite than any other.

Endo-metritis, formerly looked on as a rare affection, is, now that its symptoms are better known, recognized as a disease of frequent occurrence. It is met with in women who have never been pregnant, and not seldom even in virgins; it also occurs frequently as a result of imperfect involution of the uterus, and in aggravated cases may terminate in complete disorganization of the intra-uterine mucous membrane. Such extreme cases are, however, rare.

All cases of chronic endo-metritis naturally divide

themselves into two classes, namely, those which occur in women who have borne children, and those who never have been pregnant. The course, symptoms, and treatment of these two classes are essentially different. I will speak first of the disease as it occurs in those who have borne children.

In the great majority of such cases, the patient's attention will be attracted to her condition by the occurrence of derangement of the menstrual function, which, generally in the first instance at least, becomes profuse, and often painful; leucorrhœa, too, is generally present.

On proceeding to examine the patient the cervix will be found to be thickened, the os patulous, perhaps the lips everted, and possibly in a state of granular erosion, while a copious discharge, thick, opaque, and tenacious issues from it; the cervical canal also is patulous, and the sound will pass with ease through the relaxed os internum. Nevertheless its introduction often causes pain, either at the os internum, or when its point reaches the fundus. If the sound causes pain as it passes through the os internum, menstruation is, I believe, always painful; but if the extreme sensitiveness is confined to the fundus, this may not be so. Dr. Routh is of opinion that in some instances that portion of the endo-metritum situated between the openings of the Fallopian tubes on either side may alone be diseased, and he terms this "fundal endo-metritis." I much doubt, however, if the affection be ever limited to so circumscribed an area.

As the disease progresses the mucous membrane lining the body of the uterus becomes disorganized. This is manifested, as already pointed out, by derangement of the menstrual function, which becomes painful,

or profuse, or both, and it is not till this stage is reached that, as a rule, the patient seeks medical aid; doubtless she will in general have previously complained of pain in the back, of a feeling of weight in the pelvis, and perhaps of a bearing down sensation, but when contrasted with the disease as it occurs in the unmarried or sterile woman, endo-metritis in the woman who has borne children produces comparatively little discomfort, and, except when the patient is run down by profuse or constantly-recurring hæmorrhages, comparatively little constitutional disturbance.

Here is a typical case:—Mrs.——, aged 25, gave birth to her first and only child three years ago. She nursed but a few months, and then, menstruation recurring normally, she weaned the child. Shortly after, her husband became ill, and for many months she tended him by day and night, notwithstanding which her general health continued tolerably good, and it was not till after the lapse of quite a year that the occurrence of repeated attacks of profuse menstruation, latterly accompanied by acute pain, compelled her to seek relief. In her case the os uteri was very patulous, and the cervical canal blocked up by a mass of thick, semi-purulent mucus. When the point of the sound reached the os internum she complained of sharp pain. I treated this patient by the application of carbolic acid to the fundus, applying it twice a week for about two months. The first menstrual period after the commencement of this treatment was perfectly painless, but was very profuse, and lasted for seven days; the next was equally painless, and was over in four days. Since then the function has been perfectly normal, and the uterine catarrh has disappeared.

The treatment just mentioned will often prove efficacious, provided the case be of recent origin; but if of long standing, and if copious uterine catarrh or menorrhagia be present, more active treatment is called for.

In all cases where much tenderness on pressure exists, local blood-letting should first be practised; this is a rule from which I make few exceptions. Local blood-letting relieves the pain to a considerable degree, and certainly favours the action of other treatment, whether that be medicines administered by the mouth, or applications made directly to the diseased surface.

Local depletion is a very old practice of recognized value. It has, however, fallen into disuse, apparently because, when carried out by means of leeches, it is troublesome, and, moreover, is often attended with unpleasant consequences.

I practice it, as you are aware, by puncturing the cervix. If the cervix be soft and spongy it must be done cautiously. The quantity of blood taken can be regulated to a nicety, but a few minutes are occupied in the operation, and no pain is caused. The bleeding generally ceases the moment the speculum is withdrawn; if it should not, a pledget of cotton must be placed in the vagina, and left *in situ* for a few hours; but it is seldom that even this is necessary. Local depletion does not produce as beneficial results in cases of corporal endo-metritis as it does in cases of cervical congestion; the benefit, therefore, resulting from the practice will be in an exact ratio to the amount of cervical disease which may exist.

Local depletion is, however, in cases of endo-metritis, but a preliminary step; it is invariably necessary to adopt treatment which will act directly on the diseased surface

—that is, on the mucous membrane lining the body of the uterus.

There are three methods of making applications to the interior of the uterus: one is by injecting fluids into its cavity; another, the introduction of ointments by means of Barnes' ointment repositor, or of a piece of solid caustic into it, by means of Simpson's intra-uterine *porte caustique;* and a third is the passing up to the fundus of a probe or stilette armed with a layer of cotton, saturated with carbolic acid, nitric acid, or some other active agent.

The first of these methods I entirely disapprove of, as it is a practice not free from danger; and not on that ground only, but also because it is much less certain and satisfactory in its results than either of the others.

The second I occasionally practice, and in cases of imperfect involution of the uterus, where no inflammation exists, the action of the nitrate of silver often produces excellent results; but it is not, so far as my experience goes, a good method of treating endo-metritis.

The third method, namely, the application of strong caustics to the interior of the uterus, of which, in my opinion, the fuming nitric acid is one of the best, is a practice now extensively carried out, not only in this city, but also in America. I always use either carbolic acid or the iodized phenol in the first instance, and if these fail, have recourse to nitric acid.

However, some practitioners still have a great dread of applying powerful caustics to the interior of the uterus, a fear which is totally groundless. Nitric acid seldom causes any pain whatever, if properly applied;* in this

*For directions as to the mode of using carbolic and nitric acid see Lecture XVII.

respect its application differs entirely from the injection of even weak solutions of any caustic into the uterus, grave symptoms, and even death, having followed the latter practice. Therefore, while I advocate the use of carbolic or nitric acid as safe applications to the interior of the uterus, I strongly object to the intra-uterine injection of any fluid in the treatment of the class of cases under consideration.

Of numerous cases of endo-metritis, in the treatment of which I used nitric acid, I shall give very briefly the details of the following. The patient was a widow, and her last child had been born twenty years ago. Of late menstruation had become profuse, and was attended with very severe pain. She also suffered from constant pain in the left side, felt most intensely at a point midway between the spine and crest of the ilium. This pain, at first experienced only at each menstrual period, became after a time constant, being aggravated in intensity during the periods, sometimes indeed becoming at those times absolutely intolerable; there was also tenderness over the right ovary. The uterus was tender to the touch, enlarged, retroflected. The introduction of the sound caused much pain, and some blood followed its withdrawal. The cervix was swollen and much engorged. To relieve this condition I punctured it. It bled freely, and, hoping to lessen the ovarian congestion, I directed 25 grains of the bromide of potassium to be taken thrice daily. This treatment was continued for some time, blood being extracted locally at intervals of five days. The result was that the cervical engorgement was removed, menstruation became somewhat less profuse, and the ovarian pain much mitigated in severity; but treatment having been discontinued

for a short time, the whole train of bad symptoms returned, and I became convinced that no permanent relief would be obtained unless I treated the interior of the uterus directly. I accordingly explained my views as to the nature of her case to this lady, and to her son, himself a surgeon. She consented to undergo any treatment which promised relief from her sufferings. I commenced by dilating the cervical canal so freely that I passed my finger through the os internum and up to the fundus of the uterus. As I had anticipated I detected a rough granular condition of its lining membrane; the lip of the uterus was then seized with a vulsellum and drawn down. My vulcanite cannula was introduced into the cervix to protect it from the action of the acid, and a wire armed with a roll of cotton, thoroughly saturated with the fuming nitric acid, was passed through it up to the fundus and retained there for some seconds; this was done twice, so as to secure a thorough cauterization of the whole interior of the uterus. No pain followed. I kept this lady in bed for some days as a precaution, but no other treatment was adopted. The next period came on a little before its time, and was profuse, but attended with less pain. Since then her condition has steadily improved, the periods now last but three or four days, and are almost painless. This lady had been treated in various ways without benefit before she came under my care. I may here remark that if nitric acid be applied shortly before a menstrual period, that period is likely to be profuse; but this by no means indicates that the treatment is a failure, the subsequent ones, as in the present instance, frequently becoming normal.

To guard against misapprehension, I think it right to

add that, in advocating the method of treating endo-metritis by the application of nitric acid, as practised in this case, I must be understood to refer only to cases in which menorrhagia, purulent discharges, or profuse uterine catarrh exist, or to cases in which other means have on a full and fair trial, failed to effect a cure. In many cases of chronic endo-metritis the cervical canal is so patulous that my cannula can be easily introduced,* and the nitric acid applied through it By this means we avoid having to dilate the cervix. This saves the patient much pain, and is, if carefully carried out, very efficacious.

Whenever endo-metritis exists for any considerable length of time, the mucous membrane lining the cavity of the uterus is thickened, and is liable to become covered with numerous elevations, sometimes minute, sometimes so large as to be distinctly felt by the finger introduced through the cervix; in such cases, therefore, we are compelled to dilate the uterus to enable us to remove these with the curette, nitric acid being subsequently applied.

The occurrence of this condition I have already dwelt on when speaking of menorrhagia, to which it nearly invariably gives origin. We have recently had in our wards a well-marked example of this, the particulars of which I have detailed in a former lecture (Lecture V). The patient suffered from such irritability of the bladder that for years past she had been obliged, even during the night, to micturate at least every hour. This was her most distressing symptom, but of even more importance was the menorrhagia, which had gone on increasing in severity for ten years, and had rendered her perfectly exsanguine. In this case I dilated the cervix, and passing

* See Lecture XVII.

my finger up to the fundus, found the lining membrane of the cavity to be in a roughened, granular condition. I used the curette, cauterized the interior of the uterus freely with the strong nitric acid, and had the satisfaction of seeing her completely relieved from the vesical irritation, and of discharging her, after the lapse of a few weeks, perfectly cured of the menorrhagia from which she had so long suffered.

But, as already mentioned, you frequently have endo-metritis associated with endo-cervicitis, and as the latter is the most obvious, all the symptoms may possibly be referred to it, and the existence of the former overlooked. Consequently you may be surprised to find, when you have cured the cervical affection, that the patient's sufferings are not alleviated. Dr. Marion Sims points out this in his work on *Uterine Surgery*, and I am able to confirm the accuracy of his observations.

Endo-metritis occurring in virgins, or in women who have never been pregnant, runs a very different course. In the great majority of cases these will seek medical aid either for the cure of sterility or, more generally, with the view of procuring relief from the sufferings which they experience at each menstrual period. I will first trace a case as it occurs in a married woman. She on being questioned will, as a rule, tell you that prior to marriage menstruation had been normal, or at least attended with but little suffering; that after marriage the function gradually became more painful, and that it increased in intensity till she was compelled to seek relief. On making a vaginal examination we generally find the cervix uteri to be conical, and sometimes elongated, swollen, and congested; frequently, too, indeed, I think in the ma-

jority of cases, the fundus will be found to be anteflected, occasionally it is retroflected, the os uteri is generally small and annular, and frequently we will be able to see a clear and slightly viscid discharge to exude from it.

Now, the pathology and causation of these cases is, I think, this—they always occur in women in whom either the cervical canal is contracted and the cervix conical, or in whom congenital anteflection of the uterus exists; the canal, narrow though it be, sufficed before marriage to permit without difficulty the exit of the menstrual discharge; but, under the influence of the excitement caused by sexual intercourse a greater quantity of blood flows toward the uterus and ovaries; the mucous membrane lining the cavity becomes unduly swollen and vascular, and, as a result, an increased amount of blood is at the menstrual period poured out into the cavity of the uterus; the swollen condition of the mucous membrane at the os internum and in the cervical canal renders the originally narrow passage almost impermeable, the menstrual flow is retarded, and, as a result, the blood coagulates in the distended cavity, small clots are formed, and these becoming virtually foreign bodies, excite the uterus to contract, and after much suffering are expelled; relief then for a time is obtained, but the same process recurs over and over again, and in time permanent irritation of the intra-uterine mucous membrane is set up. And now the patient's sufferings are not confined to the menstrual period alone, for, in consequence of the unhealthy condition of the intra-uterine mucous membrane, its secretion is increased in quantity and altered in character; it becomes viscid, and exudes slowly from the uterus. Often its exit is impeded to such a degree that it distends the

cavity, inducing permanent dilatation, and often hypertrophy of the whole organ, aggravating the previously existing irritation of the lining membrane, and causing great distress and pain to the patient.

If these cases are neglected the whole system suffers. The ovaries are specially liable to be implicated, the irritation set up in the uterus seems to be propagated to them; they become enlarged, painful to the touch, and a source of great suffering; the bladder also often sympathises, and the patient suffers from irritability of that viscus; then reflex irritations manifest themselves; the breasts become painful, the appetite fails, and often there is nausea and even vomiting. In a word, chronic endometritis in a nulliparous woman is a most serious affection, causing the greatest sufferings, and undermining health, not rapidly, indeed, but surely, while sterility is an invariable result.

Unfortunately, too, it is a most obstinate affection. If the case be of old standing the hope of doing much for the patient is but small; if, however, it has not gone on too long the prospect of effecting a cure is good; but to do this it is essential to bear in mind the pathology of the disease, the basis of which is, that the conical cervix and contracted canal, coupled with anteflexion when this exists, prevents the menstrual discharges and viscid secretions of the diseased lining membrane from obtaining easy exit.

The first step then towards affecting a cure is to ensure the free escape of the contents of the uterus. With this view the cervical canal must be rendered permanently patulous, and this can only be ensured by dividing the cervix. I lay it down as a rule, from which there are

few exceptions, that it is almost impossible to cure chronic endo-metritis in the nulliparous female when the cervix is conical and its canal contracted, unless the cervix be divided; and this I believe to be absolutely true when the affection co-exists with either anteflexion or retroflexion. I have tried every other possible method, including dilatation of the cervical canal, and the free use of nitric acid, to find my patient after the lapse of a few months in no way improved. The following affords a striking example of this. It is interesting, too, from the fact of its being the first case in which I divided the cervix for the cure of endo-metritis, my previous operations having always been for the relief of painful menstruation.

Mrs. L., aged 36, married ten years, came under my care four years ago. She stated that previous to marriage she had always enjoyed good health, but that some months subsequently she suffered from a severe attack of pain in the region of uterus. This after a time subsided, but from that date she never was perfectly free from suffering, and of late, though naturally of very active habits, she has been compelled to give up taking exercise nearly altogether; for years, too, she had been off and on under medical treatment, without ever obtaining permanent benefit.

She suffered from constant headaches, these occasionally being very severe, from indigestion, flatulence, and constipation. She was unable to walk, for on attempting to do so she was always seized with pain, referred to a point corresponding to the fundus of the uterus. This pain lasted for some time, then she would obtain relief, and after this invariably perceived a copious viscid discharge to exude from the vagina. These attacks of pain, and

subsequent leucorrhœal discharge, occurred even when she kept quiet, though then the intervals between them were considerable. Walking, however, always brought them on. I subsequently satisfied myself that these attacks of pain were due to the efforts of the uterus to expel the copious secretion which collected in it.

On making a vaginal examination I found that the cervix was conical, and the os so small that I could not introduce an ordinary sound, but had to use a fine probe; the fundus was large and heavy, and slightly painful to the touch; there was no abrasion, but though pressure with the fingers on the fundus caused but little pain, sexual intercourse was always productive of suffering.

I decided on treating this case by applying nitric acid to the fundus, but as this was impossible in the contracted state of the cervical canal, I introduced a length of No. 3 sea-tangle bougie into uterus, and after the lapse of twenty-four hours was, on withdrawing it enabled to introduce my platinum cannula, and through it to apply the fuming nitric acid. The result was for the time very satisfactory. She improved wonderfully, lost most of her distressing symptoms, and I saw no more of her for four months. Then she again consulted me, saying that she was as bad as ever, and on making a vaginal examination I found that she had relapsed into her former condition—the os uteri was as small, and the catarrh as copious as ever. On considering this case I became convinced that till I gave free exit to the pent-up viscid discharge no permanent benefit would follow, and believing that division of the cervix would alone affect this, proposed the operation to her. She at once agreed to submit to it, and I

accordingly performed it, dividing the cervix bi-laterally, in the manner described in a previous lecture. The result has been most satisfactory. She recovered without any drawback; has ever since steadily improved, and now, after the lapse of several years, is quite free from suffering, is able to take long walks, and leads a most active life.

After the divided surfaces have healed, and that no danger of exciting inflammation exists, it is generally necessary to apply carbolic acid, or some other caustic, up to the fundus; in fact, I always keep the patient under observation for some weeks subsequent to the operation. The length of time during which it is necessary to continue intra-uterine medication subsequently must depend on the previous duration of the disease, as well as on the severity of the symptoms. In the case just related I applied carbolic acid to the fundus, subsequently to the operation, at intervals of about four days, for five weeks.

This patient has remained sterile; indeed, I had no hope that conception would follow in her case on the cure of the endo-metritis; the disease was of too long standing. As a rule, I object to perform the operation of dividing the cervix, simply with the view of removing sterility; conception, doubtless, frequently occurs after the operation, not because the spermatozoa can now enter the uterus through the enlarged os uteri, which they were unable to do previously (for I disbelieve that theory), but because the membrane lining the interior of the uterus being rendered healthy, conception becomes possible. The following case is an example of this:

Mrs. K., aged 26, had resided in India ever since her marriage, five years ago, and had never become pregnant.

Menstruation was normal, and nearly painless. She suffered, however, constantly from backache, and much discomfort in the left ovarian region; was quite unable to take exercise, as walking brought on pain. She was specially anxious to have a family, and returned from India, and sought advice, more with the view of having sterility removed, than for the relief of her sufferings. On examining her I found the cervix to be conical and the fundus acutely anteflected; there was also a good deal of uterine catarrh. The probe passed to the depth of nearly three inches. As this case was by no means a severe one, and evidently not of long standing, I decided on endeavouring to avoid dividing the cervix, and accordingly introduced an anteversion pessary, punctured the cervix, applied carbolic acid to the fundus, gave bromide of potassium in full dose, and found the patient's condition steadily to improve. All her symptoms subsided; the flexion of course remained unaltered. After a time I sent her to Ems, where she remained for some weeks, and returned in a very satisfactory state. Her husband who, during this time had remained in India, now joined her, and they travelled about for a couple of months. On returning to Dublin, just a month before they were to start for India, she called on me and said she had again of late begun to suffer as much as ever, and on examining her I found her to be in exactly the same condition as when I had first seen her five months before, the uterine catarrh being as copious as ever.

I at once told her that all she had done had been useless, and that there was no chance of a cure except she submitted to have the cervix divided. She readily

consented. I divided the posterior wall of the cervix only, this being the operation I always perform in cases of anteflexion. She sailed for India in four weeks from the date of the operation, soon after became pregnant, went to the full term of utero-gestation, and gave birth to a healthy child.

I have given these two cases in detail because they show how useless any attempt to cure endo-metritis in sterile women is, unless, as a preliminary step, free exit is afforded to the discharge which invariably collects to a greater or less extent in the cavity of the uterus. And if I have succeeded in impressing this fact on your minds, your failures in your future practice will be lessened very considerably.

In my opinion, the only mode of obtaining a permanently patulous os uteri, is by division of the cervix, for after dilatation, no matter how practised, it invariably contracts to its former size, unless indeed, as sometimes, though rarely happens, pregnancy occurs immediately. Dilatation, therefore, is not suitable in the case of unmarried women at all; in the case of the married it is justifiable, but seldom, beneficial; this, at least, is the result of my personal experience of both methods.

I have performed division of the cervix for the cure of endo-metritis upwards of seventy times; in nearly all the cases, either anteflexion of the uterus, or a conical cervix and small os uteri existed. I regret that I am unable to give any accurate statistics of the results, because the large majority were hospital patients, who were lost sight of; but the fact of their not re-appearing in the extern department, is presumptive evidence that good resulted from it; but occasionally, after a long

interval, we hear of some of them. Thus, no later than yesterday, a woman presented herself here, being in the eighth month of her pregnancy, whose cervix I divided for the cure of dysmenorrhœa and endo-metritis, just a year ago. At that time she had been six years married, and was sterile; her sufferings at each menstrual period having been very severe. Again, you may remember the case of the patient on whom I operated a few weeks since. She told us that she came from a remote country district to be treated, because a neighbour of hers, who had been a similar sufferer, and sterile, was now pregnant, after treatment here. On referring to our case book, it appeared that I divided the cervix in her case also. Among my private patients, I have had very satisfactory results, and in addition to the case I have already detailed, pregnancy has followed in several others. This is easily understood, because, in my opinion, by far the most common cause of sterility is the existence of that unhealthy condition of the cavity of the uterus, which we term "endo-metritis;" and that affection being cured, by judicious treatment carried on after division of the cervix, pregnancy is very likely to follow. In one case only that I am aware of, has no good whatever resulted from the operation. In that case, being very anxious to accelerate the cure, I applied carbolic acid to the fundus a week after the operation. This was a most unfortunate step, for cellulitis set in, and as a result, chronic ovaritis of a very distressing character has occurred. Now, I never make any intra-uterine applications till the divided surfaces have healed perfectly.

I have already given my opinion very distinctly as to the uselessness of attempting to treat such cases as I am

now speaking of, by dilatation. The case of Mrs. L., which I have just related, is an example of its inutility. The following one is still more striking:—

Miss ——, aged 30, consulted me three years ago. She always suffered from pain at the menstrual periods, the sufferings gradually becoming worse, and lasting longer, till now she was laid up for quite a week on each occasion. She has lost flesh, appetite bad, and is dyspeptic. She also complained of distressing pruritus. On examining her I found the uterus to be much enlarged, the fundus to be acutely retroflected, and tender to the touch. The passage of the sound caused pain, and there was copious uterine catarrh. She stated that she had been under the care of a well-known London practitioner, who had dilated the uterus; that she was much better for a time, but that after the elapse of two months all her symptoms had returned. I wrote to the practitioner in question, who kindly replied to my queries, and stated that Miss ——'s condition was, when treatment was first commenced, exactly as I have described; that the cervix had been "dilated with laminaria tents, and held straight subsequently by Williams' stem and shield; while in London she was greatly relieved, but she had written afterwards to say that the benefit did not last." I divided the cervix in this case, and subsequently treated her by repeated applications of carbolic acid to the fundus, the uterus being supported by means of a Hodges' pessary. She improved greatly, and after three years has not relapsed; the uterus is still retroflected.

The following also is a very instructive case, showing that mere division of the cervix, without subsequent treatment, is seldom sufficient to effect the cure of dysmen-

orrhœa depending on the existence of endo-metritis, in a patient in whom anteflexion of the uterus, and a conical cervix exists. The patient was a young woman, eight years married. From the first, menstruation was painful, but soon after marriage the periods began to be much more so, the pain gradually increasing in intensity as time passed on. Sexual intercourse had also of late become almost unbearable. On examining her, the os uteri was seen to be small, the cervix to be conical, the fundus acutely anteflected, and very painful to the touch; hence the dyspareunia. The clear viscid discharge, pathognomonic of the existence of endo-metritis, could easily be made to exude from the os, by pressing the point of the speculum against the cervix, thus showing that the cavity was full of fluid. I performed Sims' operation, dividing the posterior lip of the cervix only. I could not, however, induce her to remain in the hospital, and she left it at the end of a fortnight, before any attempt could be made to cure the endo-metritis. After the lapse of nearly a year, she again presented herself, saying that, though her sufferings were hardly as great as formerly, she was not much better. On examining her, I found that the operation had been satisfactory, so far as that it had not only rendered the os uteri sufficiently patulous, but had also straightened the canal of the cervix to a considerable degree. No difficulty now existed to the free escape of the contents of the uterus, but menstruation was still painful, and the fundus as tender as ever, because the endo-metritis was still uncured. She now became an out-patient, and carbolic acid was applied to the cavity of the uterus, in our usual manner, once a week; she could not attend

oftener. Much less pain was experienced at the next menstrual period, and the one following that was, for the first time in her life, absolutely painless, and so have the subsequent ones been; the dyspareunia also has disappeared. This patient is not yet safe from the danger of a relapse, for exposure to cold would most likely induce a fresh attack of endo-metritis; but I have no doubt that this young woman will, with moderate care be perfectly cured; and I do not see why she should not become pregnant; but bear in mind that I do not advocate division of the cervix for the cure of sterility, but for the cure of certain forms of dysmenorrhœa, and specially of that which depends on the existence of chronic endo-metritis, occurring in women who have never been pregnant.

The course and symptoms of endo-metritis in virgins do not vary in any great degree from those in the nulliparous married woman, the most prominent, and perhaps the commonest, symptom being dysmenorrhœa. The discharge sometimes appears too frequently, or it may be profuse, while in many instances it subsequently becomes scanty; in a few the menstrual function is normal, but these are the exceptions, while the general health suffers even more than in the latter class; and, should the patient unfortunately marry, her sufferings are intensified. The cause of the first attack is often obscure; it may be the result of over fatigue, but in the majority of cases I believe cold to be the exciting cause, but once it has occurred, the pain nearly always continues to be experienced at each menstrual period.

I know of no affection so difficult to treat efficiently as chronic endo-metritis occurring in a virgin, and, to make

matters worse, it is generally met with in girls of weakly, often of a strumous constitution. Occasionally it will yield to the application of carbolic acid to the fundus, coupled with warm hip baths, local depletion, and attention to the general health; but in by far the greater number of cases it will prove to be associated with a conical cervix, and probably of flexed uterus; and if this be so, the only hope of cure, in my opinion, rests on the performance of the operation of dividing the cervix, and the subsequent treatment of the unhealthy mucous membrane by the application of carbolic acid, or some similar agent in the manner already described.

I have hitherto spoken only of disease of the mucous membrane lining the cavity of the uterus; but the parenchyma also is frequently the seat of disease, it being specially liable to congestion, which often terminates in permanent hypertrophy and enlargement of the whole organ. To this condition the term *chronic metritis* is generally applied. I agree, however, with Dr. T. Gaillard Thomas that "diffuse interstitial hypertrophy" conveys a more correct idea of the pathology of the affection I am now speaking of, consisting as it does in an increased flow of blood to the part, and subsequent static congestion, with increased growth both of the connective tissue and of the muscular fibres of the uterus, that of the former being greatly in excess.

Chronic metritis as thus defined is a very common affection; it is a frequent result of imperfect involution after labour or abortion. It is also met co-existing with, often apparently the result of, endo-metritis; the inflammation, at first confined to the mucous membrane, gradually extending to the substance of the uterus, the

blood vessels of which become engorged, while the muscular structure is in the first instance softened, swollen, and, in my opinion, also frequently infiltrated with serum to such an extent as to produce well-marked œdema of the organ, especially of the cervix. In fact I have satisfied myself that the great size which the uterus attains in some cases is mainly due to the serous effusion which has taken place into its areolar tissue. After a time this condition passes into one of permanent hypertrophy, with induration, accompanied nearly always by hyperasthesia of the whole organ, which is often exquisitely painful to the touch. In addition to the causes mentioned, we have it without doubt depending on the irritation caused by the development and growth of uterine fibroids. In two cases which occurred in my own practice I was called upon to treat a very intractable form of metritis. Both patients were for a long time under observation, and in both, intra-mural fibroids were finally proved to exist. Both these patients were unmarried. In other cases the affection seems to be of comparatively passive origin, the result of imperfect involution of the uterus subsequent to delivery, which, favouring or actually causing permanent fulness of the blood-vessels, is the first step in a process which ends in the structural changes already described.

On whatever cause depending for its primary origin, metritis, when once developed, is a very distressing affection, and one most difficult of cure. That form which is connected with the growth of a fibroid may be dismissed with a few words. Small intra-mural fibroids are most difficult to detect, their very existence may not even be suspected; time alone unravels the mystery, when the

tumour has attained a size which enables it to be recognised; but in metritis due to other causes, much may be done to alleviate the patient's sufferings.

Where endo-metritis exists it is obviously necessary that every effort should be made to restore the mucous membrane to a healthy condition; till this is done no progress will be made towards the cure of the other affection. In these cases intra-uterine medication must be used with great caution, for under such conditions the application of nitric acid or other strong caustic to the interior of the womb may be followed by injurious results. It is here that local depletion by leeching or puncturing the cervix is eminently beneficial, especially so in those cases where œdema exists.

Vaginal douches of hot water, if properly carried out, are capable of affording great relief, often of actually effecting a cure; they should be administered at a temperature of 105°, and be continued for a considerable time twice daily.* Counter irritation, kept up by the application of a succession of small blisters over the sacrum is sometimes productive of marked relief, but, to be of use, they have to be repeated frequently, and it is often difficult to induce patients to persevere with them. But in truth, chronic metritis often proves a most intractable affection; its tendency is to terminate in hypertrophy and induration of the whole, or at least of the body of the uterus.

When this stage is reached, the use of the actual cautery promises the best results. The value of the cautery in the treatment of cases of chronic metritis with hypertrophy is not sufficiently recognized. You had a good example of the satisfactory results produced

* See Lecture XVII.

by this method in the case of Mrs. B., at present a patient in this hospital. Ten years ago she was confined of her first and only child on board ship. Soon after its birth, being exposed to cold, she was seized with severe pain low down in the pelvis. This was due probably to an attack of metritis. She recovered slowly, but has been ever since an invalid. The uterus is now much enlarged, the cervix thickened and indurated, and the slightest pressure on it causes intense pain, while walking or driving are alike distressing. Since her admission, blistering, the douche of warm water, iodine locally, alone, and in combination with carbolic acid, have been tried without benefit; lastly, I had recourse to the cautery, and made a rather deep slough with it on both the anterior and posterior lip of the os uteri; since then she has experienced great relief. She states that she is now quite free from pain, and is about to leave the hospital, as she says she is cured. The cautery was used altogether three times with her, and did not on any occasion cause pain. I strongly advise you to try this method in suitable cases.

I have now concluded the consideration of the various forms of inflammation to which the uterus is liable in the unpregnant state, but inflammation may also occur in the structures adjacent to the uterus, either as an idiopathic attack or as the result of treatment adopted for the cure of some local affection, the structure most commonly engaged being the connective cellular tissue, and the disease is consequently termed *pelvic cellulitis*. We also meet with *pelvic peritonitis* as a distinct affection.

The term *para-metritis* is by some authors preferred to that of *pelvic cellulitis*. In my opinion this is unfor-

tunate. I quite agree with Dr. Fordice Baker in thinking that the former is not warranted either "by precedent or analogous usage," and I greatly prefer the term pelvic cellulitis, by which is meant inflammation of the cellular tissue around and in the neighbourhood of the uterus, or occurring in any part of the pelvis. It is right, however, that you should bear in mind that *para-metritis* is synonymous with *pelvic cellulitis*, as is also *peri-metritis* with *pelvic peritonitis*.

In certain states of the constitution pelvic cellulitis occurs on very trifling provocation. A case is reported in which it followed on the mere introduction of the uterine sound; in another it was evidently the result of the application of the solution of the perchloride of iron to the cervix, made with the view of checking profuse hæmorrhage, and I have on several occasions known it to occur after division of the cervix uteri. Exposure to cold is, however, by far the most common cause, and this is specially liable to excite an attack after operations of even minor importance about the uterus. Consequently in such cases every precaution should be adopted to avoid its occurrence.

As we have at present a case of this affection in the house, I shall take the opportunity of calling your attention to the subject. This patient was admitted in a very anæmic condition, having lost a great quantity of blood. She stated that she had aborted three weeks previously, and on examining her it was evident that the hæmorrhage was kept up by the retention of a portion of the placenta. I plugged the vagina, and directed her to have thirty drops of the liquor ergotæ and three of the solution of strychnia every third hour. This produced sharp uterine action, and on withdrawing the plug, after the lapse of

twelve hours, the placenta was found in the vagina, and the hæmorrhage immediately ceased. Three days subsequently she had a rigor, and complained of sharp pain in the region of the uterus; pressure over the abdomen, however, caused comparatively but little distress. Vomiting soon after set in, and for the next forty-eight hours was incessant; indeed this distressing symptom did not entirely cease for five days. The pulse was very quick, as it always is in these cases. On making a vaginal examination immediately after the rigor had occurred the walls of the vagina felt hot and swollen, and she complained of the pressure of the finger causing pain; but on repeating the examination after the lapse of twenty-four hours the uterus was found to be immovable, being fixed by a firm, hard swelling, which extended all round it. This in the posterior *cul-de-sac* assumed the form of a well defined tumour, which pressed against the rectum, and thus explained a symptom she now complained of, namely, a constant desire to defecate; all her attempts, however, to do so proved useless. Now what has occurred here is, that inflammation, which has resulted in the rapid effusion of serum, has attacked the cellular tissue situated around the uterus and within the folds of the peritoneum, causing pressure on the rectum.

In this case there are three points worthy of your special attention—namely, the hardness of the swelling as felt through the vagina, the pressure on the rectum which this swelling causes, and the distressing vomiting from which she suffered. The hardness is due to the infiltration of serum into the cellular tissue surrounding the uterus. This effusion may be circumscribed so as to form a well-defined tumour, or be general, as in the present case: its

hardness and the rapidity of its formation being its distinctive features.

The pressure which the swelling exercises on the rectum often causes much distress, and may, by totally obstructing the bowels, even prove fatal. Let me impress on you the necessity in such cases of avoiding the exhibition of purgatives. The obstruction is mechanical, and cannot be overcome by exciting the peristaltic action of the bowels. On the contrary, it is your duty to quiet that action by the exhibition of opiates. This was the treatment adopted in the case at present in the house. She took half a grain of opium every third hour, while enemata of tepid water were administered twice daily, with the view of aiding the descent of any fæcal matter which might be impacted in the lower part of the bowel. The opium, however, had no effect in checking the distressing vomiting, I therefore tried the subcutaneous injection of morphia, and with great success; the injection of one-sixth of a grain always quieted her stomach for two or three hours. Now this is a fact worth bearing in mind. Vomiting, doubtless, frequently follows the subcutaneous injection of morphia, but nothing is so efficacious in checking the vomiting due to the existence of peritonitis or pelvic cellulitis. Vomiting is a frequent, I was almost going to say invariable, accompaniment of pelvic cellulitis when the attack is acute. In the case at present in hospital the treatment adopted, in addition to the subcutaneous injection of morphia, was keeping the abdomen constantly covered with warm linseed meal poultices, and the internal exhibition of opium and of hydrocyanic acid. Food could not for several days be retained on the stomach. She had milk and lime water, and milk and soda water in small quanti-

ties frequently, and also beef-tea; the latter was also administered *per rectum*. She is now slowly recovering; the case will terminate by resolution.

The patient, whose case I have just related, suffered from a very acute attack, but more commonly the symptoms develop themselves slowly for a time. As an example of this, the case of another patient, J. S——, is instructive. She was admitted suffering from very profuse and weakening menorrhagia, and as the cause was not apparent the uterus was dilated, and the intra-uterine mucous membrane found to be in a state of granular degeneration. For the cure of this, nitric acid was applied. No pain followed, and at the end of a week the patient was convalescent. But, on being allowed to get up, she exposed herself to cold, and an attack of sharp fever followed, accompanied by pain referred to the pelvis. After a time a hard swelling could be felt posteriorly and laterally, the uterus being fixed. She was treated by the exhibition of sedatives, rest, warm baths, &c.; the pain subsided, but the swelling round the uterus remained, and after a lapse of six weeks a copious discharge of matter *per rectum* proved that suppuration had taken place, and that the abscess had burst into the bowel. Her convalescence was tedious, but she was finally discharged cured. This fortunate result does not, however, always occur. In not a few instances the patient is run down by hectic, and the case terminates fatally, notwithstanding our best efforts to save life.

When the attack is as acute as in either of the foregoing cases, the symptoms are so well marked that an incorrect diagnosis is hardly possible, unless the practitioner be grossly careless, but it is otherwise in the

chronic form of the disease. In some instances there is no history of high fever, nor yet well-marked tenderness over any portion of the abdomen, but the patient will be in constant, though perhaps not severe pain; this will be aggravated by motion, the act of defecation may cause distress, and there may be vesical irritation. If a vaginal examination be made, the uterus will probably be found to be fixed, and surrounded with indurated tissue, but sometimes only one-half of the pelvis has been engaged, and then we will detect fulness and thickening laterally on one side, or posteriorly only, or possibly the thickening may exist in the broad ligament; with a finger in the vagina, and the other hand on the abdomen, such a condition can, if it exists, be always recognized; and in all cases where a suspicion of the existence of a present or recent attack of cellulitis is excited, a most careful investigation of the contents of the pelvic cavity should be made. Pelvic cellulitis is one of the most common and important affections from which women suffer, notwithstanding which, its existence is constantly overlooked, and it runs on unrecognised for months. I therefore urge you to be always on your guard, lest you, too, fall into this common error.

Pelvic cellulitis may terminate by resolution; in a few cases the swelling rapidly disappears, and perfect recovery follows; but such cases are comparatively rare, in many perfect recovery never takes place, and it has been shown by Lawson Tait and others, that the structures surrounding the ovaries and Fallopian tubes are frequently implicated to such an extent as to permanently occlude, or nearly occlude the Fallopian tube; the result then is dysmenorrhœa of a most aggravated character, for the cure of

which, when the affection has become chronic, the removal of the ovary and Fallopian tube is advocated. Intermediate between these two extremes of perfect recovery and permanent suffering, you may have every possible degree of partial convalescence; time will do much if the patient be only carefully nursed and judiciously treated, otherwise she may continue a life-long sufferer.

Another termination of cellulitis is by the formation of an abscess or abscesses. These may make their way outwards, and point inside the thigh, over the hip, or in the lower portion of the abdominal wall. They may open and the patient recover, or she may be run down in time by hectic. Sometimes the abscess opens into some portion of the bowel, or even into the bladder; in either case there is great danger of a fistula forming, which closing from time to time, causes the abscess to refill, to be discharged again through the same track after a period of much suffering. I have known an abscess thus to refill and discharge over and over again, for a great length of time.

If an attack of cellulitis be recognized early, much may be done towards cutting it short, and preventing the formation of matter. The fever should be reduced by the administration of diaphoretics and aconite. Warm hip-baths should be ordered, the patient being kept in them for a considerable time, and the vagina irrigated by the injection into it, of the water of the bath, by means of a Higginson's syringe, when it can be managed. The hot-water douche*, used as it is in this hospital, is an admirable treatment, one indeed of which it is impossible to

* Note.—For directions as to mode of using the hot-water douche, see Lecture XVII.

speak too highly; but when the case has become chronic our power of being useful is greatly limited. Still, by means of the hot-water douche, by long-continued rest, by the use in some cases of blisters, and the judicious administration of tonics, much may sometimes be effected, for the tendency of cellulitis is to recovery; but it often is a most tedious affair, and may be protracted for months, and even years. Remember that mercury and the iodide of potash are useless, indeed, absolutely injurious, in these cases.

There is one affection, of more rare occurrence, with which pelvic cellulitis is specially liable to be confounded: I allude to those cases in which an effusion of blood takes place into the pelvic cavity. To this the term of *pelvic hœmatocele* is applied.

In considering this affection it is necessary to bear in mind that the effusion of blood is not the disease, it is always the result of some lesion or abnormal condition, and though the extravasated blood may become a source of danger to the patient, it is only a secondary, not a primary cause.

Blood may be poured out into the pelvic peritoneum in one of three ways.

1st. It may escape from the Fallopian tubes during, or immediately before, the occurrence of a menstrual period.

2nd. It may be poured out from a ruptured blood vessel in the ovary, Fallopian tube, or broad ligament.

3rd. It may be due to the rupture of the cyst in cases of extra uterine fœtation.

For the occurrence of an escape of blood from the Fallopian tubes, it is, I think, necessary to suppose that some obstruction must exist to the exit of the menstrual

discharge, a conical cervix and contracted cervical canal, acute anteflexion of the body, or the presence of a tumour pressing on or blocking up the os internum, would be such. It is also extremely probable that when a reflux of blood takes place along the Fallopian tubes, the exudation of the menstrual blood from the lining membrane of the uterus is both rapid and copious.

The diagnosis of pelvic hæmatocele is often very difficult, and is specially so in the form under consideration. The blood almost invariably gravitates into the recto-uterine *cul de sac*, consequently a swelling is formed there, but unless the loss has been so considerable as to produce a shock, the patient may not at first seek for medical advice. After a time, however, the extravasated blood excites inflammation, and then we have a patient with all the symptoms of pelvic inflammation, in whom also a well-defined swelling exists, occupying the posterior *cul de sac* of the peritoneum, the uterus being forced upwards against the pubes. I feel confident that attacks of pelvic cellulitis, and pelvic peritonitis occurring at or near a menstrual period, are not unfrequently pronounced to be hæmatocele, the two former being of frequent occurrence, the latter rare. To form a correct opinion, a careful consideration of the history of the case, as well as of the symptoms which present themselves, is essential. In hæmatocele the access of the attack is sudden. The patient, without any premonitory symptom is attacked with pain, and may become faint and cold; after a time there is reaction, to be followed probably by the symptoms of pelvic peritonitis; at the same time a vaginal examination will detect a tumour behind the uterus, which at first soft, becomes gradually harder,

this hardening being due to the coagulation of the blood.

In pelvic cellulitis this train of symptoms is reversed. The patient most probably will experience those premonitory of an ordinary febrile attack, namely, a chill, or even a rigor, followed subsequently by an accession of pain, and the gradual formation of a hard swelling round the uterus. This swelling is from the first hard and unyielding, whereas in hæmatocele the tumour at first soft gradually becomes harder. The foregoing remarks refer more especially to that form of hæmatocele due to the escape of blood from the Fallopian tubes, and which I believe to be of very infrequent occurrence. When it is due to the rupture of a blood vessel in the ovary or Fallopian tube, the symptoms are likely to be much more severe and marked, namely, sudden collapse, coldness of the extremities, and those symptoms which usually announce a severe shock. When such occur simultaneously with the formation of a swelling behind the uterus the diagnosis can hardly be doubtful, while if a woman in whom the symptoms of pregnancy exist is seized with sudden pain of an acute character, and that a swelling is detected behind the uterus, the probability of extra uterine fœtation, with rupture of the cyst, is obvious, and this conjecture would be strengthened if, in addition, the sensation of something having given way be experienced by the patient.

Hæmatocele occurring as a result of extra uterine fœtation, or due to the rupture of a blood vessel in the ovary generally terminates fatally, and the treatment must depend on the nature of the symptoms. If collapse be present the ordinary means employed to counteract this

must be had recourse to, and among these the hypodermic injection of ether should not be omitted, half a drachm or more being injected into the fleshy part of the thigh, and repeated at short intervals of time. Care, however, must be taken not to induce excessive reaction, or the hæmorrhage might recur. Pain, generally very intense, is also under such circumstances invariably present, and demands the free administration of opium. But these cases, though so alarming, are not those which demand the exercise of the greatest skill; it is those cases whose invasion is less marked, and whose course is slow, which often tax our judgment to the utmost; possibly the tumour may gradually diminish in size, and as the symptoms of inflammation subside may disappear, absorption having taken place, but it is quite as likely that the tumour may become softer, that fluctuation may be detected, that the temperature may again rise, and we become convinced that suppuration is about to take place. With these changes the danger of septicæmia becomes imminent.

Under such circumstances the puncturing of tumour sometimes becomes a necessity, but it should not be undertaken unless the symptoms become urgent, and that no hope of the fluid discharging itself through the rectum or vagina remains. If the operation be decided on, an asperateur should in the first instance be employed, and the entrance of air into the cyst, if possible, carefully prevented, but often the contents are too solid to be thus evacuated, and a free incision into the posterior *cul de sac* of the peritoneum may become unavoidable. Fortunately these cases are very rare, and of those which do occur comparatively few demand surgical interference.

LECTURE XI.

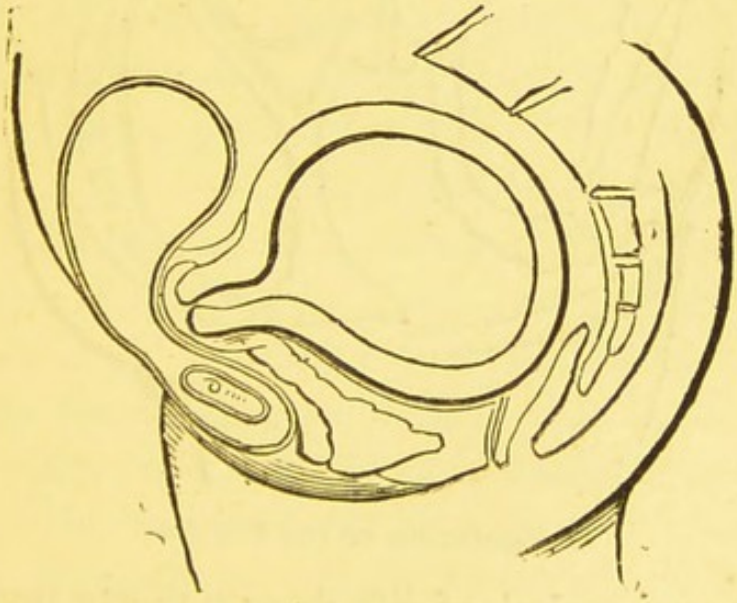
Displacements of the Uterus—Retroflexion—Causes, Symptoms, and Treatment of—Hodge's Pessary—Retroversion, Anteflexion—Prolapsus Uteri.

The healthy, unimpregnated uterus is an organ of great mobility. Its connection with the pelvic walls by means of the broad ligaments, which are merely folds of the peritoneum, is so very lax that it can without difficulty be inclined either anteriorly or posteriorly; they no doubt oppose a certain amount of resistance to its lateral motions, but very little to its movements in other directions, while the round ligaments, which do materially aid in supporting it, frequently prove to be incapable of offering any effectual opposition to the descent, much less to inclinations of the womb in either an anterior or posterior direction. In young women who have not borne children, the muscular structure of the vagina, forming as it does a firm tube into which the cervix uteri is inserted, aids materially in supporting the womb; but in women in whom that canal becomes relaxed from the effects of frequent parturition, or of disease, local or constitutional, the support afforded by it is in a great measure wanting, and the organ may sink directly down; the tendency to such a displacement becomes greatly aggravated should the womb, as is frequently the case, be from any cause enlarged and heavy. But common as descent of the

uterus is, the other displacements to which the organ is liable are still more so. Hardly a day passes in which we do not meet with examples among the extern patients of flexions of the womb either backwards or forwards. I shall call your attention to these first, and afterwards return to the consideration of prolapse.

The womb, then, may be bent on itself either in a posterior or anterior direction, and to these flexions the terms "retroflexion" and "anteflexion" are respectively applied. Now it is of importance that you should clearly understand what is meant by these terms. Some writers,

Fig. 26.



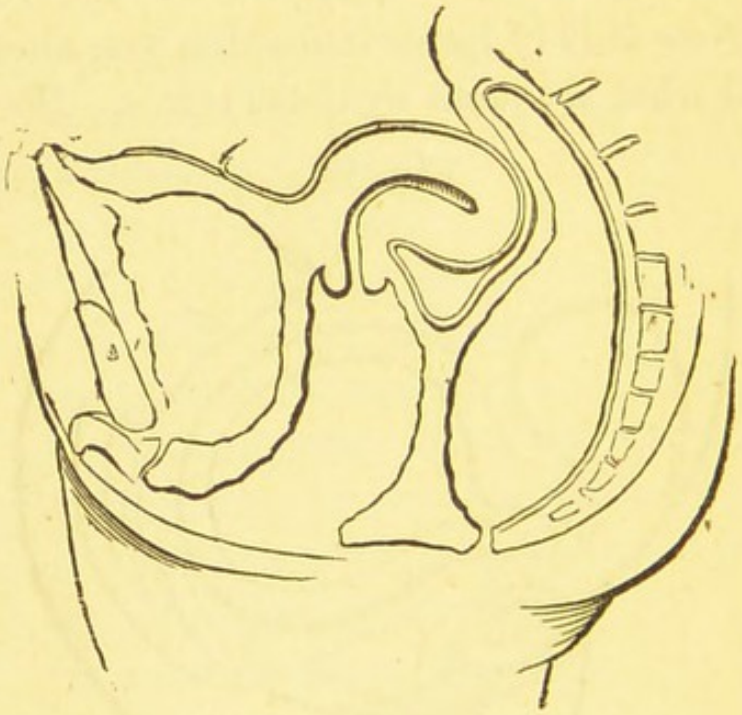
Retroversion of the Gravid Uterus.

and among them the late Sir J. Simpson, used the words "retroversion" and "retroflexion" as synonymous, but in reality they indicate two very different affections, for retroversion signifies a turning back of the entire uterus, and is applicable to that change of position to which the gravid womb is liable when the fundus lies in the sacral hollow, the os being forced up behind the pubes, a condi-

tion rarely seen unconnected with pregnancy; whereas by retroflexion, on the other hand, is to be understood a bending back of the fundus alone, the os remaining very nearly in its natural position; while in cases of anteflexion the fundus is in like manner bent forwards.

Retroflexion, which is perhaps the most common displacement to which the uterus is liable, may be met with

Fig. 27.



Retroflexion of the Uterus.

at nearly every period of life from puberty onwards. It is, however, rare in youth and in advanced age, the great majority of cases occurring during that period of life in which the uterine system is in the state of its greatest activity, namely, between the ages of twenty and forty years. It is besides an affection the existence of which is very liable to be overlooked, this being due rather to the fact that the symptoms to which it gives rise have often but little apparent reference to the uterus than to any

difficulty in detecting it when once our suspicions are aroused.

When we consider the position of the uterus in the pelvis with the bladder, an organ capable of such immense distension, placed in its immediate front, and consequently exercising a pressure backwards, and when we remember that many women from mere habit or from motives of delicacy oftentimes pass many hours without emptying that viscus, we can readily understand the frequent occurrence of this displacement. But though the distended bladder may thus be the agent in directing the uterus backwards, it is but a secondary cause; the uterus itself must be at the time in an abnormal condition, for otherwise it would regain its proper position whenever the bladder became flaccid. Retroflexion is generally, in my opinion, produced gradually, and is the result of affections which produce a soft and relaxed condition of the muscular structure of the uterus, and at the same time enlargement of the whole organ, and specially of the fundus. It is not necessary that the increase should be confined to the fundus, though, if that be the case, the danger of retroflexion occurring is much increased; for if the bulk of the entire uterus be augmented this may still take place, because not only is there a force acting from before directing the fundus downwards and backwards, but also because there is no resistance from behind to counteract that tendency. The muscular tissue of the uterus is in all these cases in a relaxed softened condition. Were this not so, I do not believe that the uterus could bend.

We, however, frequently meet with cases in which, while retroflexion obviously exists, the uterus certainly is not enlarged or increased in size; but this is capable of

explanation if we bear in mind that when the uterus is bent on itself at an angle the circulation must be seriously interfered with. Congestion of the fundus doubtless at first occurs, but subsequently, if the case be neglected, atrophy of the organ may after a long interval result. In time the original cause of the affection may cease to exist, but the uterus does not necessarily on that account regain its normal position, for not only may the fundus be bound down by adhesions formed on its peritoneal surface, but also a process of absorption and consequent thinning may take place at the point of flexion, especially on the lower or concave surface, so that even when no adhesions exist, permanent restoration of the uterus to its normal position is impossible; this fact enables us to understand the unsatisfactory results which often follow the use of pessaries, and, indeed, also of other treatment adopted for the cure of cases of old standing. Without doubt, too, the affection is in some cases congenital.

The causes producing the condition likely to result in retroflexion may be reduced to three classes, namely—

1st. Congestion, frequently terminating in chronic inflammation of the uterus, and hypertrophy of that organ.

2nd. Subinvolution of the uterus, after labour or abortion.

3rd. Tumours of uterus.

But in addition to those cases, in which we can trace the flexion to the existence of one of the conditions here enumerated, we occasionally meet with others the origin of which is so obscure, as to prevent our being able to decide as to the mode of their occurrence.

(1). Congestion of the uterus is a common cause of retro-

flexion, and one frequently overlooked. It is met with in two very different classes of females—namely, those who lead a very active life; and again, in those of a weakly constitution and sedentary habits, such as needlewomen and teachers. Thus young women of active habits, who from necessity or for pleasure, walk, ride, or garden much, or who follow employments or amusements necessitating much standing, will sometimes pursue these duties or amusements to an undue extent, specially during the catamenial periods; the result is that the organ remains congested for an abnormal length of time, and a condition favourable to chronic inflammation is produced.

The following case illustrates this form of the disease:—

M. F., æt. twenty-five, unmarried, has always lived a very active life, and till within a comparatively recent period enjoyed excellent health. About three years ago, having been compelled to undertake the superintendence of a large farm, she underwent great fatigue, generally spending from eight to twelve hours each day in the open air, either on foot or an horseback, never relaxing her exertions even during her menstrual periods. At first she suffered from a sense of fulness and weight in the lower part of the abdomen, but to these symptoms she paid no attention. At about the end of a year she perceived, for the first time, a new train of symptoms. She now experienced difficulty in passing water, and was obliged to strain in doing so. After a little time her sufferings were further increased by difficulty experienced in defecation. The bowels were not actually constipated, but their action caused great pain, and the fæces when passed were as small as those of a little child. The catamenia appeared regularly but in diminished quanti-

ties. I felt in this case, as I always do when the patient is unmarried, great reluctance to make a vaginal examination, but her sufferings were so great, and treatment directed to other organs had so entirely failed to afford relief, that I deemed it absolutely necessary to ascertain the condition of the uterus, and on examining I discovered that organ to be much enlarged, tender to the touch, and completely retroflected, its fundus occupying the hollow of the sacrum, and pressing against the rectum; this explained one of her symptoms—namely, the difficulty experienced in defecation, the irritation of the bladder being evidently reflex. With the view of retaining the uterus in its normal position I introduced a Hodge's pessary. The fundus was raised without difficulty, but the pessary first used proved to be too large, and caused so much pain that, after the lapse of a few hours, it had to be removed. On a subsequent day, however, I introduced a smaller one. This answered admirably, and she experienced such relief, that she was able to return home, and has since followed her ordinary occupations. In this case the retroflected uterus was in a state of chronic inflammation, and to this condition her greatest sufferings were due. In the following case, however, no inflammation was present. The uterus was simply congested, and a very different train of symptoms manifested themselves.

A schoolmistress, æt. twenty-one, had suffered for more than a year from occasional attacks of vomiting, which for the last three months had become incessant. She had been treated in various ways, but without benefit, and at the time I saw her, in consultation with my colleague, Dr. Little, under whose care she had been,

rejected everything she swallowed. She even vomited lime-water and milk, and this, though only one spoonful had been given at a time and at regular intervals, no other food of any kind being allowed. In like manner she had been fed on beef-tea exclusively, a spoonful only being given at intervals of fifteen minutes. The food thus taken would be retained for a time, till some ounces had been swallowed, then the whole would be rejected. Nevertheless she had not become actually emaciated, and she only complained of debility, and pain in the pit of the stomach and in the back. The catamenia appeared at regular intervals, but in much smaller quantities than formerly. On examining the abdomen, tenderness on pressure was detected over the left ovary, and to that spot four leeches were applied. The effect was marked. The same afternoon the stomach retained some beef-tea, that being the first food retained for several weeks. The vomiting, however, did not entirely cease, but still occurred once or twice a day, nearly always in the morning. Being now satisfied that this symptom depended on some reflex irritation, we decided on making a vaginal examination, and I was somewhat surprised to find the uterus completely retroflected. The fundus was enlarged and occupied the hollow of the sacrum. It was easily raised to its normal position, and to retain it there I introduced a Hodge's pessary of small size. This was, from the very first, borne without inconvenience, and from the time it was introduced the vomiting entirely ceased. The catamenia subsequently appeared in much larger quantities. I removed the pessary after it had been worn for three months. Since then there has been no return of her distressing symptoms, and I understand that she is now married.

Both these patients were unmarried women; in both congestion of the uterus occurred, which in one had reached, in the other was slowly assuming, the form of chronic inflammation; when this happens the patient's sufferings are always greatly aggravated. She will tell you that, in addition to pain in the back, she suffers from severe lancinating pains over the pubes, in the groin, and shooting down along the course of the crural nerve. Change of posture, or any motion, aggravates this pain, which sometimes becomes so severe as to render walking a matter of great difficulty.

Dr. Graily Hewitt has recently described this condition, and applied to it the term of "uterine lameness." Often too in these cases, the bladder sympathises, and a constant desire to micturate wears out the patient. Touching the fundus of the uterus sometimes causes pain of a very severe character, sexual intercourse therefore becomes so painful and distressing as to be actually impossible. It is this form of the affection which most imperatively calls for our interference, for it gives rise to great distress, and often lays the seeds of unhappiness in married life.

The following case exemplifies the distress which exists in cases of retroflexion when aggravated by the occurrence of chronic inflammation of the uterus. S. B., æt. twenty-eight, had been married for eight years. Not long after marriage, when in the fourth month of pregnancy, she fell down stairs and was much hurt. As the result of this accident she aborted. For a year following she continued in a miserable state, the pain in her back and in the region of the uterus being so severe that she was seldom able to leave her bed. The catamenia were scanty and irregular. She was at length induced to go to Edinburgh, and place herself under the care of the late Sir J. Simpson.

He incised the cervix uteri, and introduced a stem pessary. Severe inflammation followed and the instrument had to be removed. From this attack she recovered, and returned home feeling somewhat better, but soon relapsed into a condition even worse than before. She now experienced a distressing feeling of weight in the neighbourhood of the rectum; this was greatly increased at each menstrual period, which, however, recurred regularly, the discharge being very scanty, and its appearance always ushered in by severe pain. At length she became a confirmed invalid. Walking caused such suffering that she dared not attempt even to cross the room.

On examining her I found the uterus was completely retroflected, the fundus, which occupied the hollow of the sacrum, being very tender to the touch. The os was gaping, freely admitting the tip of the finger, and a copious discharge of semi-purulent fluid exuded from it. I leeched the cervix on three occasions, and, when the tenderness of fundus was lessened, introduced one of Hodge's pessaries, which she wore without inconvenience. Her condition has since steadily improved. Menstruation now lasts for two or three days, and she is able to perform her usual household duties. She still continues to wear the pessary. In this case as well as in the foregoing one, menstruation, though not entirely suppressed, had become very scanty. The reverse will be found to be nearly invariably present when the flexion depends on other causes.

(2). You doubtless remember my having pointed out the fact, that not unfrequently after labour or abortion, the uterus from various causes fails to regain its natural size, and remains unduly enlarged; to this condition the term

"subinvolution" is applied. When this is the case the organ is peculiarly liable to flexions, for not only is its fundus unduly heavy but the muscular fibres also are relaxed, consequently the natural rigidity of the organ is in a great degree wanting. When retroflexion occurs as a sequence of subinvolution, it gives rise to very grave symptoms, the most prominent of which is menorrhagia. Indeed it is frequently for the relief of this that we are consulted.

We have recently had in our wards a good example of this form of the affection. The patient was admitted suffering from menorrhagia; she stated that three months after the date of her last confinement, menstruation came on very profusely and lasted for six weeks, and that at each subsequent period the loss had been considerable. On examination the uterus was found to be retroflected, the whole organ being also enlarged; but it was *not tender* to the touch, nor was sexual intercourse painful, and the introduction of the uterine sound caused no distress. You see at once how strongly this case contrasts with the ones previously detailed. Here is another, the particulars of which I have recorded in my note-book. A lady gave birth after a difficult labour to a still-born child, about five months previous to my seeing her. Considerable hæmorrhage followed delivery, and her convalescence had been very slow. Subsequently she suffered from profuse menstruation, had gone to the seaside and been treated by the administration of tonics, but without effect. On examining her I found the uterus completely retroflected and much enlarged. The case was clearly one of subinvolution of the uterus and subsequent retroflexion. This lady did not suffer any pain. She complained of the

debility consequent on the menorrhagia and of nothing else.

(3). There is no doubt but that the presence of a tumour embedded in the wall, or contained within the cavity of the uterus, may predispose to its flexion; or again, by bulging out one wall it may stimulate a flexion, although in point of fact the axis of the uterus remains unchanged. This was so in the patient whose case was illustrated by the woodcut, Fig. 12, page 96. The uterus in her case appeared to be anteflected, but in reality the anterior wall had merely yielded to the pressure exerted by the polypus as it increased in size. In like manner fibrous tumours, if situated on the peritoneal surface, may possibly by their weight draw the fundus of the uterus downwards. Care, therefore, is needed to discriminate between a retro- or anteflected uterus, and one in which the wall is bulged outwards in consequence of the existence of an intra-mural or intra-uterine tumour.

From the details of the cases to which I have called your attention, you will see that the symptoms they presented varied much; still, as I shall presently notice, they had some well-marked points, common at least to all the cases falling under one of the heads into which I have divided them.

If you refer to most of the works on diseases of women, you will find the symptoms of retroflexion of the uterus stated to be a "sense of weight" in the pelvis, "pain in the back," or "shooting down the thighs," &c., symptoms which are common to nearly every form of uterine disease, and therefore worthless as a diagnostic mark; while with respect to the state of the menstrual function no attempt is made to apply to it any definite rule. Thus Sir J.

Simpson, in the first volume of his *Obstetric Works*, says, that he has found the "catamenial discharge to be the most oppositely affected, occasionally in the way of menorrhagia, sometimes of dysmenorrhœa." Again, Dr. Churchill says, "Menstruation may be profuse or painful, or both," while I may add that it often is scanty. I cannot but think that this apparent contradiction in the description of symptoms is due mainly to the want of careful discrimination between two classes of cases, depending on totally different conditions of the same organ.

Doubtless there is not any one symptom on which we can rely as indicating the existence of retroflexion of the uterus; and I do not remember in my own practice a single instance in which, prior to making a vaginal examination, I had sufficient grounds for concluding that this displacement existed, though I often surmised, and, as a subsequent examination proved, correctly, that such was the case. Thus, in the first of the cases which I have detailed, the most prominent symptoms were irritation of the bladder and difficulty in defecation; in the fourth, they were ovarian pains and total inability to walk; while in the second, regurgitant vomiting alone was complained of. Another case presented an example of uterine lameness, and in her the uterus was so tender to the touch that sexual intercourse was impossible. In these cases, however, differing as they did in other respects, the menstrual function was similarly affected, being in all much diminished in quantity. In two other cases, on the contrary, menorrhagia was the sole symptom which attracted the patient's attention. And again, in a case recently under observation, although menstruation was profuse and weakening, the prominent symptom was paroxysms of

intense pain. But though the result produced—namely, retroflexion—was in all these cases the same, the causes giving rise to that result were different. Thus, in those in which menstruation was diminished, the retroflexion was the result of congestion, terminating in chronic inflammation and slowly-produced hypertrophy. In the others, where menorrhagia existed, it followed on subinvolution, the catamenial discharge being diminished or increased according as the flexion depended on one or other of the causes named; but it should always be borne in mind that in cases in which the flexion was originally the result of imperfect involution, and in which that condition had been neglected, induration in time will occur, and menstruation then is likely to become scanty and possibly painful.

I have already noticed the occurrence of vomiting as having been the prominent symptom in one case. This of course was due to reflex irritation; but the stomach is not the only organ liable to sympathise with the uterus when it is retroflected; the mammæ may also be affected. Thus I recently was consulted by a married lady mainly for the purpose of deciding whether she was pregnant or not. She stated that four years previously she had given birth to a living child, and that subsequently she had been several times pregnant, but on each occasion had miscarried at the end of the third month. She supposed that she was now again pregnant, because she suffered from incessant nausea, while at the same time her breasts had become enlarged, painful, and distended with milk; but still she was in doubt, because the catamenia appeared not only regularly, but in increased quantity. I speedily satisfied myself that she was not pregnant. The uterus

was retroflected. It was manifestly a case of subinvolution terminating in retroflexion. In this case a pessary was at first badly borne, though finally one was introduced, which answered admirably.

From the consideration of the foregoing cases, I think we may fairly draw the following conclusions:—

1st. That retroflexion of the uterus is a common affection, and that it is met with both in married and unmarried females.

2nd. That it is generally a secondary, not a primary affection.

3rd. That when it is due to congestion, or chronic inflammation of the uterus, terminating in hypertrophy, the catamenia are diminished in quantity and frequently painful.

4th. But, that when retroflexion is the result of subinvolution of the uterus following labour or abortion, the catamenial discharge is, at least in the first instance, increased in quantity, sometimes to an alarming degree.

5th. That in addition to the symptoms common to all forms of uterine disease—namely, pain in the back, sense of weight, &c.—we not unfrequently have, where the uterus is retroflected, difficulty in defecation, and in some cases, reflex irritation of the bladder, stomach and breasts, occurring now in the order of frequency given.

It is seldom that much difficulty is experienced in recognizing a retroflected uterus; you feel a tumour in the recto-vaginal *cul de sac*, which you can in most cases raise by making pressure on it with the finger; and in doing so you can generally satisfy yourself that it is the fundus of the uterus, the cervix of which lies in its natural position; but the use of the sound will decide

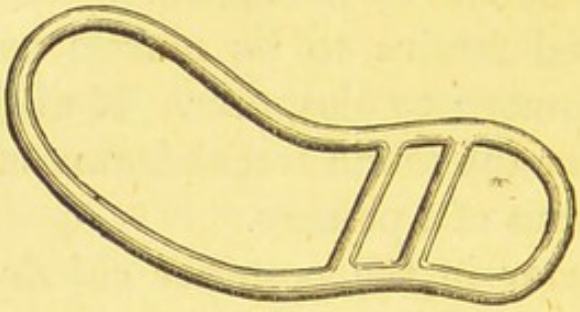
the question; for, if the uterus be retroflected, the instrument will pass with its concavity towards the sacrum; and when introduced you can in most cases, by giving the handle of the instrument a half turn, raise the retroflected fundus to its normal position, thereby causing the tumour to disappear. It will, however, drop back as soon as the sound is withdrawn, unless it be supported by means of a pessary.

If the tumour in the posterior *cul de sac* cannot be raised from its position, and that you are satisfied that the point of the sound passes into it, the inference to be withdrawn is, that the fundus has been fixed in that abnormal position by adhesive inflammation, and in that case no attempt should be made to raise it; but if the sound passes into the uterus, with its concavity towards the pubes, the tumour cannot be the retroflected fundus; then the diagnosis generally rests between one of three things. (1.) It may be a prolapsed and enlarged ovary, in which case pressure on the tumour causes great pain; (2) or it may be the product of inflammation, engaging the areolar tissue; (3) or be due to an escape of blood into the peritoneum; but I shall refer to these points again when speaking of pelvic cellulitis and hæmatocele.

Great difference of opinion exists among practitioners as to the best mode of treating cases of retroflexion. Dr. Meadows would endeavour to cure the inflammatory condition, which is the chief cause of the patient's sufferings, before having recourse to mechanical treatment, and I consider that as a general rule this is the proper course to adopt. I think, however, that where a pessary can be borne, the restoration of the organ to, and

the supporting of it in its proper position, will materially aid us in our efforts to effect a cure. The instrument

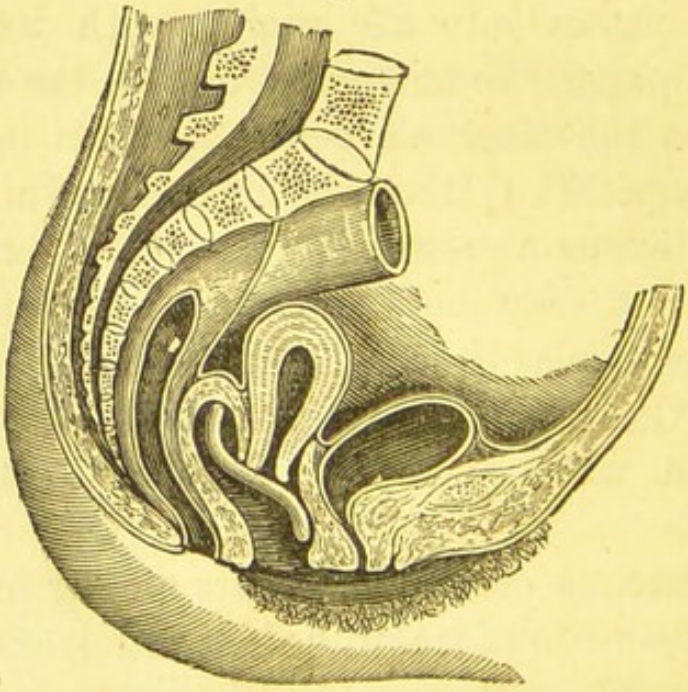
Fig. 28.



Hodge's Pessary.*

that I generally use for the purpose of supporting the retroflected womb, is the modification of the ring

Fig. 29.



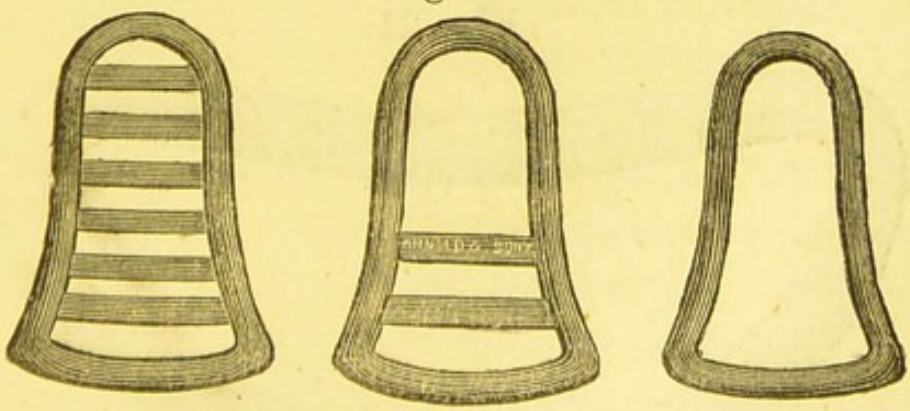
Hodge's Pessary in Situ.

pessary, known as Hodge's Lever pessary; it is oblong in shape, and has a double curve (Fig. 28). When intro-

* These pessaries as generally sold, and, as figured in the woodcut, are not sufficiently curved in their upper third, and their value as a lever is consequently materially lessened.

duced it should lie in the position shown in the engraving (Fig. 29). Those made of vulcanised India-rubber, on which the secretions of the vagina take little effect, are the best instruments. I prefer them with transverse bars; the cervix projects through the space behind the posterior one of these, and as they press the cervix backwards, they tend to throw the fundus forwards. Dr. Greenhalgh has suggested a useful modification in the construction of these little instruments; he has them made of copper wire cased in India-rubber tubing, the wire, however, is wanting at the lower or wide end, the India-rubber alone extending across that part. This is a double advantage, the yielding band of India-rubber adapts itself to the parts, and never, by its pressure, irritates the neck of the bladder, which the rigid instruments sometimes do; and moreover it permits the sides of the pessary to be approximated during its introduction, a matter of no small importance in many cases where the orifice of the vagina is narrow, while the

Fig. 30.



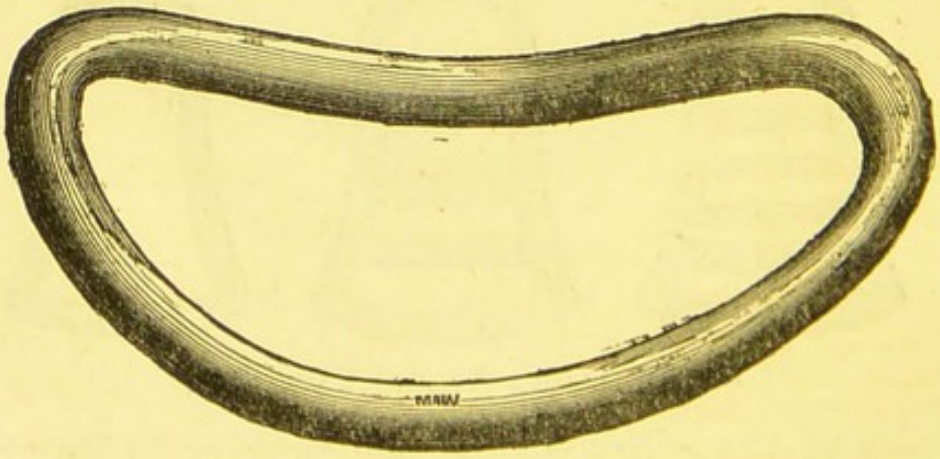
GREENHALGH'S SPRING PESSARIES.

elasticity of the wire expands the pessary to its original width as soon as it is fairly within the vagina. I have repeatedly seen these "spring pessaries" worn with

comfort by patients who could not tolerate the rigid ones. Instead of transverse bars Dr. Greenhalgh's have bands of India-rubber running across them. He recommends that in the treatment of those troublesome cases in which prolapse of the anterior wall of the vagina exists, large-sized pessaries be worn, in which these transverse bands extend down the entire length of the instrument, as shown in the annexed engraving (Fig. 30). I do not, however, approve of these bands, for I find that after a short time they stretch and yield, and moreover, becoming coated with mucus often cause a very disagreeable discharge.

The modifications of these instruments are now innumerable. You see several of them on the table, but I feel that it would be useless of me to go into a detailed description of them. Each inventor considers his own the best. This (Fig. 31) which is known as Galbanum's pessary is a very useful one; it will sometimes remain in position when the ordinary double-curved pessary slips out; it is, as you see, nearly a semicircle.

Fig. 31.



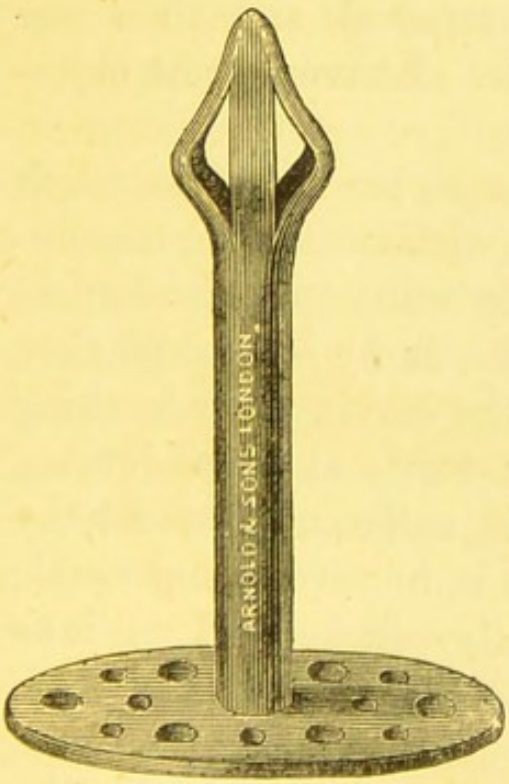
Whatever instrument you select care must always be taken to see that it be of suitable size and length; for if

one be introduced which is too long, it will cause much discomfort, and perhaps actual pain,; while if the instrument be too small it will slip out. You must therefore have a number of pessaries of various sizes by you, and remember that the vagina varies greatly in size in different women.

A properly fitting pessary generally affords immediate relief to the patient, and may be left *in situ* for several weeks, or even months. I always, however, recommend patients to have it removed after the lapse of ten or twelve weeks, and not to have it replaced for a few days. By adopting this precaution all danger of unpleasant consequences following their use will be obviated.

Sometimes, however, Hodge's pessary, even if properly shaped, fails to raise the retroflected fundus sufficiently, and you may, though rarely, meet with cases in which it becomes necessary to straighten the uterus by the introduction of a stem within its cavity.

Fig. 32.



GREENHALGH'S FLEXIBLE STEM.

Stems are very liable to slip out of the uterus. To obviate this tendency Dr. Chambers recommends the use of a vulcanite instrument, the stem of which is split, and expands after being introduced into the uterus. This instrument is self-retaining, and when it can be borne often proves useful, but it generally causes much irritation. Dr. Greenhalgh's flexible stem pessary, Fig. 32,

is, however, in my opinion superior to any other. The stem consists of India-rubber tubing admitting an ordinary sound, which must be passed into it when the stem is being introduced. Near the upper extremity is a bulb with four slits in it, through which the uterine secretions escape ; the lower extremity terminates in a shield. Dr. Greenhalgh urges in its favour that "being of soft material it adapts itself better to the canal, is not liable to slip out, or to inflict injury, and can be worn without interfering with marital relations.

An ordinary vulcanite or galvanic stem pessary can in general be retained *in situ* by the subsequent introduction of a Hodge's pessary, or, if that fail, of an ordinary box-wood disc. Stem pessaries, of whatever kind employed, should never be left in the uterus for a longer period than a month without removal, and their use should be avoided when possible. I have a great objection to them.

Should, however, the uterus be so tender to the touch that the pessary cannot be worn without causing discomfort, you must endeavour first to relieve the tenderness by the use of the vaginal douche, or by local depletion, practised either by puncturing the cervix or by leeching it. Indeed Dr. Hall considers repeated blood-letting, effected by puncturing the cervix, sufficient alone for the cure of flexions. This assertion is, however, too general; it is occasionally, but not generally sufficient. I use it as an adjunct ; supporting the fundus by means of a pessary, and at the same time endeavouring to bring the organ back to its normal condition by local depletion, practised at intervals of a few days, and, if endo-metritis exists, by the application of carbolic acid to the fundus. In fine, the

treatment adopted should be to remove the cause of the flexion, and to restore the uterus to a healthy condition, while the fundus should, if possible, be retained in its normal position by mechanical means.

In conclusion, I would urge on you the necessity of bearing in mind that cases of retroflexion are frequently met with which seem to cause neither distress nor even inconvenience to the patient, and that such cases should not on any account be interfered with.

I must now briefly direct your attention to retroversion of the uterus:—Retroversion of the uterus is not, at least in its complete form, a displacement of frequent occurrence; doubtless partial retroversion, by which is to be understood that condition in which the fundus inclines more or less backwards, the whole organ lying in a sloping direction across the pelvis, the os being still, however, its lowest point, is not very rare: but this partial version of the womb seldom gives rise to distressing symptoms, and consequently, as a rule, escapes notice. But true, complete retroversion is of infrequent occurrence. Although this displacement is comparatively rare, still it is an affection of great importance, not only from the gravity of the symptoms it gives rise to, and the serious and even fatal consequences which may result from its occurrence, but also because of the frequent errors of diagnosis made in relation to it.

In retroversion the uterus, as the name indicates, is turned completely backwards, the os uteri looking upwards and forwards, the fundus lying in the hollow of the sacrum, and sometimes almost on the perinæum.

It is of importance that you should bear in mind the difference between retroversion and retroflexion of the

uterus. In the former the whole organ is, as I have explained, turned over; in the latter it is flexed, or bent at a point mutually corresponding to the os internum. The diagrams, Figs. 26 and 27, will convey to you a correct idea of these two very distinct affections, which, however, are frequently spoken of as identical, or at most as differing only in degree.

Retroversion, at all times a rare affection, is still more rarely met with unconnected with pregnancy. It generally occurs about the end of the third month of pregnancy, and the first symptoms it gives rise to almost invariably is retention of urine. You will be asked to see a woman in the third or fourth month of pregnancy, who will tell you that she is unable to pass water, and on examination you will find the bladder to be distended with urine. On emptying it you will, on a further examination, find that a globular body occupies the hollow of the sacrum, and that the os uteri is high up behind the pubes, possibly altogether beyond your reach; at the same time a bi-manual examination will prove the uterus to be absent from its normal position. But possibly the patient may tell you, as in the case at present under our observation, that she is able to pass water—nay more, "that it is always coming." This is a statement which constantly misleads inexperienced practitioners; the dribbling of urine is under such circumstances but the overflow of an over-distended bladder, and if you fail to recognise this, and promptly to empty the bladder, your patient's life will be endangered, possibly lost. She may die of peritonitis, or of uræmic poisoning, or the mucous membrane of the bladder may become softened, and subsequently gangrenous, and death ensue.

The causes producing retroversion of the uterus are various. Frequently the displacement appears to take place suddenly. A pregnant woman makes an effort such as that requisite to lift a heavy weight, and immediately experiences some pelvic distress. By-and-by she finds that micturition is impossible, and on examination retroversion is found to exist. The conclusion is that the displacement took place on the moment. I doubt if this explanation is ever perfectly correct. Most probably the uterus had been, ever since, or possibly before the occurrence of pregnancy, lying in an abnormal position—namely, more or less across the pelvis, with the fundus turned backwards, and that the sudden muscular effort, the bladder being at the time distended, merely completed the displacement which had previously been in gradual progress. The subsequent retention of urine is the result of two causes—one, that the posterior wall of the bladder is drawn down by the uterus, to which it is attached; the other, that the neck of the uterus presses upon the urethra, and thus obstructs the flow of urine. But in some cases the patient cannot assign any cause for the production of the distressing symptoms from which she suffers. There may have been a gradually increasing difficulty in evacuating the contents of the bladder, till finally this cannot be effected at all, or at most, but partially, only a very small quantity of urine being voided at a time. What has occurred under such circumstances may possibly be this: the patient, previous to her becoming pregnant, may have been the subject of retroflexion of the uterus; pregnancy occurring, the fundus of the uterus, as it enlarges, instead of rising, sinks gradually lower, drawing down with it the posterior wall of the

bladder, the flexion in time being thus converted into a version. This, however, is, I believe, of very rare occurrence. I have, on the contrary, frequently known patients the subjects of retroflexion of the uterus, to become pregnant, and have observed that as utero-gestation advanced, the fundus gradually rose, and finally assumed its normal shape and position. Dr. Barnes believes that this is effected by the gradual enlargement of the fundus upwards, there being no obstacle to its growth in that direction, and that thus, in time, the pelvic portion is partially "drawn out of its lodgment."

Cases of retroversion of the gravid uterus usually terminate in one of three ways:

1. The uterus may be raised above the promontory of the sacrum and utero-gestation proceed normally;
2. Abortion may occur; or,
3. Death may ensue.

I shall here detail for you the particulars of the case of the patient at present in hospital, as she is likely to afford an example of the first and most favourable termination of this displacement, and it will also, I think, impress on you deeply, the importance of being able to recognize the affection, for this woman had been under treatment for some time before she came under my care, without the true nature of her case being suspected.

A. M., a married woman, and the mother of five children, was admitted into hospital, evidently suffering great pain. She stated that she had a "tumour" in the abdomen, which had existed ten or twelve days, during the whole of which period she had been in constant pain. For some time previous to the formation of this "tumour," she had, she said, experienced a good deal of discomfort, or rather

distress, which was greatly increased by a constant desire to pass water, her efforts to do so being but partially successful, only a very small quantity of urine being voided at a time. Latterly, however, her condition had undergone a great change; there was now incontinence of urine, or, to use her own words, "it was constantly coming from her;" nevertheless, her sufferings were, if possible, more intense than ever. On passing the hand over the abdomen, a well-defined tumour could be felt above the pubes, pressure on which caused great pain. A vaginal examination detected another tumour lying in the hollow of the sacrum, and almost resting on the perinæum. The os uteri was absent from its normal situation, it lay high up behind the pubes, and could only be reached with the greatest difficulty. On questioning her she stated that, though a married woman, she did not think she was pregnant, but, on being pressed on this point, admitted that she had not menstruated for at least ten or twelve weeks. On proceeding to pass a catheter she objected, stating that this had been done the day before, and that she was told that there was no water in the bladder. However, being satisfied that this statement must be incorrect, I persisted, using for the purpose an ordinary No. 9 gum-elastic catheter, and drew off about two quarts of turbid, highly ammoniacal urine. The diagnosis was now clear, and a careful examination verified my previous impression that I had to deal with a case of complete retroversion of the gravid uterus. And yet this patient had been under the care of a well-informed medical man for more than a week before I saw her, but he never suspected the real nature of the case, and told me himself that she passed water regularly.

The thorough emptying of the bladder was followed by much pain, and fearing that peritonitis might supervene, I desisted for a time, after one ineffectual attempt, from any further effort at replacing the uterus in its normal position, and with the view of allaying the pain which she suffered, administered half a grain of morphia, in the form of a suppository.

After the lapse of eight hours, I found her in a comparatively satisfactory condition. She had slept, and the pain had nearly altogether subsided. The bladder was now again emptied, and the patient being placed in the ordinary obstetric posture, on her left side, I proceeded to endeavour to raise the uterus. For this purpose I introduced two fingers of the right hand into the vagina, and made steady pressure on the fundus, directing it upwards and rather to one side. Such of you as were present will remember the stress I laid on the apparently trifling point of making the pressure laterally, instead of directly upwards: by so doing the promontory of the sacrum, which often opposes a serious obstacle to the ascent of the fundus, is avoided. In the present instance the effort I made, as described, was attended with complete success; the fundus yielding to the steady pressure, slipped above the brim, and remained there; the patient experienced great relief, and has since progressed favourably. The catheter was, however, used regularly night and morning for some days subsequently, for though the patient could pass water, she was unable to empty the bladder, and it was very desirable that no accumulation should be permitted to occur. This precaution—namely, that the catheter be passed twice a day in all cases in which retention has continued for a considerable time

should never be omitted, otherwise the bladder may not recover its tone. The subsequent history of this patient presents no point of interest; pregnancy is proceeding normally, and there is reason to suppose that she will go to her full time.

This fortunate termination is not, however, to be frequently expected, in the great majority of cases in which retroversion of the gravid uterus takes place, abortion occurs either as a direct consequence of the accident or as a result of the treatment necessary to effect reposition; therefore, be always careful to give a guarded prognosis. Thus, not long since I was urgently requested to visit a lady who, in the twelfth week of pregnancy, suddenly discovered that she was unable to pass water. I found her in great agony, having for some hours endeavoured ineffectually to relieve herself. She stated that she had always enjoyed the most perfect health; that on the morning of the day on which I saw her she had been engaged superintending some domestic arrangements, during the progress of which she had assisted in raising a heavy box to a considerable height; that at the moment of making this effort she became conscious of "something giving way inside" her; but, as at the time she did not experience any discomfort, she thought no more about it, till after the lapse of some hours, being desirous to pass water, she discovered that she was unable to do so. By-and-by her sufferings from this cause became severe, and she sent for me. I at once recognised the nature of the case, emptied the bladder, and endeavoured to raise the uterus, which I found to be retroverted, above the brim, but my efforts were ineffectual. In this case I passed the catheter

morning and evening, on each occasion of doing so, endeavouring by pressure on the fundus to replace the uterus in its normal position, and on the sixth attempt, that is, at the end of three days, succeeded; after this the patient seemed to go on well for a time, but after the lapse of ten days, a sharp dash of hæmorrhage occurred, and she aborted. My belief is that in this case the force necessarily exerted in replacing the fundus, and not the accident itself, was the cause of the abortion.

But abortion is not the result most to be dreaded—death may possibly follow. One fatal case occurred in my own practice. This patient was further advanced in pregnancy than either of those just alluded to, before her sufferings induced her to seek relief. It was her first pregnancy, and she was unable in any way to account for the displacement. The symptoms appeared to have developed themselves very gradually, and the difficulty of micturition to have been progressive, till finally it became impossible. As well as could be ascertained she was, when I saw her, in the sixteenth week of pregnancy; the whole of the abdomen was very tender to the touch, the retroverted uterus nearly filled up the true pelvis, and the greatest difficulty was experienced in raising the fundus. This was mainly due to the size of the uterus; but I am also of opinion that the uterus was bound down by adhesions. Abortion occurred within twenty-four hours after the reposition of the fundus had been effected, and she died in a few days. I am of opinion that this may have been a case of congenital retroflexion, which, under the influence of pregnancy, was, as previously explained, converted into one of retroversion. The adhesions were of recent origin; probably local sub-

acute peritonitis existed previous to the raising of the fundus, and that this subsequently spread over the whole abdomen and proved fatal.

In the treatment of retroversion of the gravid uterus, there are two things plainly indicated; one being to keep the bladder empty, the other to restore the uterus to its normal position. The former should always be effected by means of a long gum-elastic catheter, for an ordinary silver female catheter will often in these cases fail to reach the bladder, so greatly is the urethra elongated and displaced. The bladder being emptied, it is generally advisable to attempt reposition at once, unless, as in the case first narrated, great pain is caused by doing so, under which circumstances it is wiser to allow some hours first to elapse, care being taken to pass the catheter at short intervals.

In the majority of cases, especially if pregnancy has not advanced beyond the twelfth or thirteenth week, steady pressure, exerted by means of two fingers introduced into the vagina, while the patient is under the influence of chloroform, will be successful in raising the fundus, care being taken to make the pressure rather to one side, so as to avoid the promontory of the sacrum. Occasionally, however, you will fail to effect reposition by this means. When this is so you will sometimes succeed by introducing one of Dr. Barnes' India-rubber bags into the rectum,* distending it with water, while pressure is still exerted by the fingers in the vagina. If these efforts fail in raising the fundus above the brim, no resource remains but to bring on abortion. This, under the circumstances, is best effected by introducing a catheter or

* This method was, I believe, first suggested by the late Dr. Halpin, of Cavan.

sound into the uterus, and, if possible, rupturing the membranes, but sometimes, in consequence of the os uteri having been forced up behind the pubes, the introduction of a catheter or sound is impossible, and then as a last resource, an effort should be made to lessen the size of the uterus by tapping it through the rectum by means of a fine trocar or aspirator. This has been done several times successfully; the liquor amnii having been evacuated through the trocar, abortion followed, the patient subsequently recovering; but in all cases of retroversion the tendency to abortion is great, and occasionally peritonitis supervenes. Bear in mind that, in addition to abortion, the possible occurrence of peritonitis is to be dreaded, and death may ensue from this cause. Retroversion, therefore, of the gravid uterus is always to be looked on as an accident of a very serious nature.

But supposing you have succeeded in raising the fundus, the patient will still, under the most favourable circumstances, need care for a considerable time. It is essential to attend to the state of the bladder, and to pass the catheter at stated intervals till satisfied that the organ has regained its tone, and you must watch lest the fundus of the uterus fall down again into the pelvis. To lessen the risk of this occurring, a full-sized Hodge's pessary should be introduced into the vagina, and with a view of counteracting the tendency to abortion, you should for some time confine the patient strictly to the recumbent posture. As the uterus enlarges the risk of a relapse lessens, and after a time becomes impossible, but the tendency to abortion for a long time continues, and in a comparatively small percentage of cases does the patient reach the full time of pregnancy.

Before concluding my remarks on this subject, I must

say a few words on the question of diagnosis. In all the cases which have come under my observation in which an error in diagnosis had been made, no sufficient examination appeared to have been instituted; thus, with respect to the patient whose case I am specially alluding to, the fact that she was suffering from retention of urine was not recognized, although the enormously distended bladder could be easily felt above the pubes. This negligence is quite inexcusable. But it is just possible that an ovarian or other tumour occupying Douglas' space might be mistaken for a retroverted uterus, even though a vaginal examination had been instituted, especially if it were large enough to press against the urethra and thus obstruct the flow of urine; but in such a case the symptoms of pregnancy will probably be wanting, and, moreover, a careful examination will detect the uterus, which, under such circumstances, would probably have been forced up above the pubes, lying anterior to the tumour. Any other tumour such as that caused by the sudden escape of blood into the recto-vaginal *cul de sac*, may, in like manner, cause some perplexity. All doubts, however, will be dispelled if, on emptying the bladder, the uterus is found lying anterior to the tumour. Excusable errors in diagnosis, then, in cases of retroversion of the gravid uterus, are possible, but with ordinary care such should rarely, if ever, occur.

But the uterus, as mentioned at the commencement of this lecture, may be displaced in other directions besides backwards; thus the fundus may be thrown forward towards the pubes. Anteflexion, as this displacement is termed, is a very common and troublesome affection, and less amenable to treatment than retroflexion.

In the great majority of instances, I believe anteflexion to be a a congenital malformation. It is astonishing how frequently it is met with in sterile women, and how commonly it is associated with painful menstruation; if the patient does not seek medical advice for the cure of sterility, or to procure relief from suffering at each menstrual period, the affection may altogether escape notice, and, if it gives rise to no discomfort, is best left alone. If, however, as is so commonly the case, dysmenorrhœa be present, that must be treated on the principles recommended in a preceding lecture, division of the cervix being nearly always necessary. I may, however, here remark that pessaries, no matter what their shape or form, though they may give temporary relief, never, in my opinion, in cases of anteflexion effect any permanent good.

Sometimes, however, anteflexion is a secondary affection, the result of congestion, chronic metritis, or subinvolution. In these cases if congestion or inflammation be present, these conditions should be relieved by local depletion, and by the other means recommended in cases of retroflexion, depending on similar causes. As an example you have the case of H. E. She is an unmarried woman, aged 30, of full habit and leucophlegmatic temperament; recently she had undergone much fatigue. She complained of severe pain, which she referred to a point immediately above the pubes, but suffered even more from a most distressing sensation, "as if," to use her own words, "something was going to fall out of her." On examining her, the uterus, which was very low in the pelvis, proved to be anteflected, the os uteri lay near the vulvæ, the fundus being behind the pubes. The sound penetrated

to the depth of three inches. The cervix was much engorged—evidently the enlargement and subsequent displacement of the uterus was the result of congestion. I punctured the cervix, which bled freely, at intervals of a few days, administered mild saline purgatives, and enjoined rest in the recumbent posture. This patient obtained speedy relief from the distressing symptoms she experienced. Menstruation became normal, and the uterus, without my having recourse to any mechanical support, regained its normal position. But then, this case was one of recent origin, and to that cause we may attribute the patient's rapid improvement, for when these affections become chronic additional measures are necessary. The fundus should, if possible, be raised to its normal position, and retained in it. The former is in general easily affected by means of the uterine sound; the latter is a matter of much difficulty; when it can be tolerated, I sometimes use for this purpose a stem pessary, made of ebony, aluminium, or flexible India-rubber; those known as Greenhalgh's stem pessaries (Fig. 10), occasionally answer well. Being soft, they seldom cause much irritation, and are no impediment to sexual intercourse, while the others are. Dr. Graily Hewitt has invented a cradle pessary made of vulcanite or India-rubber, for the purpose of supporting the anteflected uterus. It sometimes proves very useful, but as often fails to act beneficially. But, in truth, anteflexion of the uterus often baffles our utmost efforts, and in a considerable proportion of cases we are able to effect but little good.

Prolapse of the uterus is another displacement of frequent occurrence, productive of great discomfort, and, in aggravated cases, of actual suffering, but it is by no

means so common as is supposed. Great numbers of women, especially of the poorer classes, who present themselves among the extern patients, states that "the womb is coming down," but on examination the uterus is found to be in nearly its normal position, the sensation of dragging and bearing down being due to a relaxed condition of the anterior wall of the vagina, which often protrudes slightly beyond the vulvæ, and is mistaken by the patient for the womb itself. When this proceeds to any extent, the prolapsed part contains a portion of the posterior wall of the bladder, and constitutes the affection known as *cystocele.*

Prolapse may be partial or complete; by the former we understand a protrusion of the cervix to a greater or less extent beyond the vulvæ; by the latter, the rarer form of complete extrusion of the whole uterus. When this occurs the vagina is everted, a portion of the bladder, and sometimes of the rectum also, being drawn down with it. In cases of old standing, when the prolapse is complete, the mass hanging outside the vulvæ is frequently enormous; in them the surface of the tumour, specially in the neighbourhood of the os uteri, is covered with extensive patches of ulceration, while the mucous membrane of the vagina, is so altered by exposure and the effects of friction as to resemble true skin.

These aggravated cases are not, however, of very frequent occurrence; more commonly when the patient stands for any length of time a portion of the cervix protrudes, receding when she assumes the recumbent posture. If, however, the case be neglected, the protrusion is sure to become gradually larger, and may in time remain permanently outside the vulvæ.

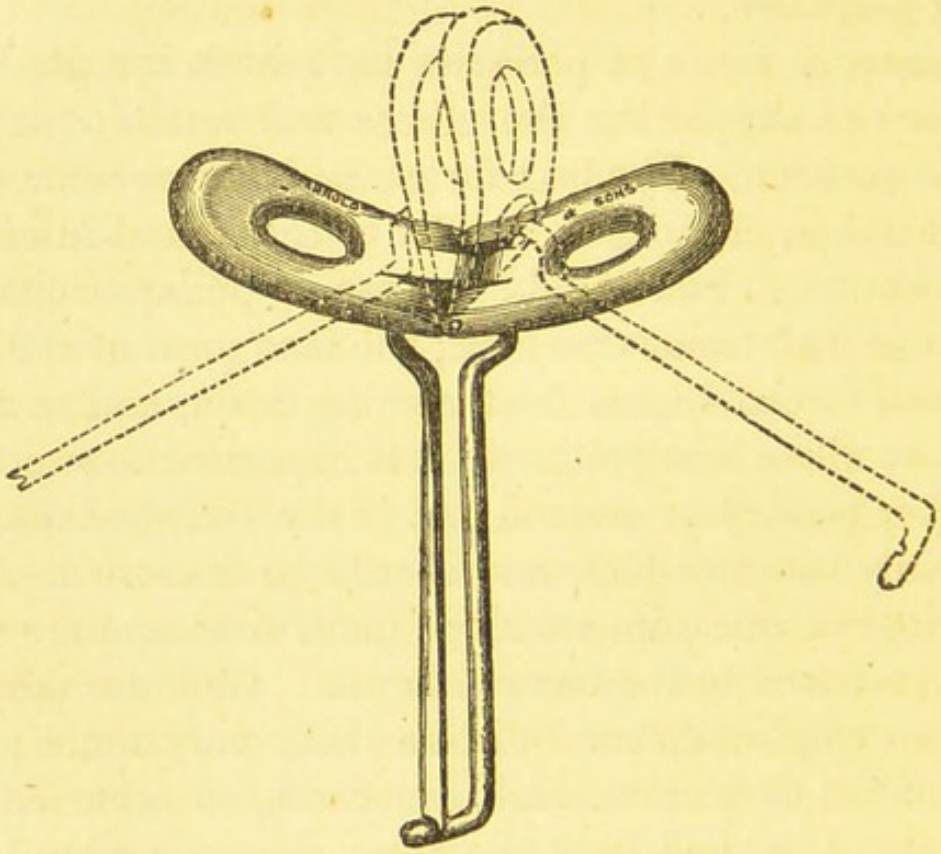
Prolapse is always a very troublesome affection, the tendency of which also is to become slowly worse; judicious treatment however, often effects much good; in cases of complete prolapse, absolute rest in the recumbent posture, especially if the legs at the foot of the couch or bed be tilted up about a foot, is of great use, as congestion is always present. But this postural treatment is but palliative.

Numerous kinds of pessaries have been invented with the view of supporting the uterus and retaining it in its proper position. The best for general use are some of the modifications of Hodge's, similar to those used in cases of retroflection. You should in case of prolapse choose a wide one with transverse bars; the bars prevent the anterior wall of the vagina from coming down, and as this is the part which first protrudes, it is important to support it. Another pessary in general use is the boxwood disc, but it rapidly becomes foul, and should be discarded. Discs and rings of vulcanite are made in all sizes, and are much to be preferred to the boxwood ones. Globular pessaries are also employed, but I dislike them very much; they are difficult to remove, and sometimes, as occurred with the patient we had here the other day, can only be extracted with the aid of a blade of the forceps. Zwank's pessary was introduced long ago for the relief of procidentia; but, though excellent in principle, it possessed many disadvantages on account of its manner of construction. Dr. Godson, of St. Bartholomew's Hospital, has modified it so as to lessen these objections materially; it is shown in the accompanying wood-cut (Fig. 33). The wings are made of vulcanite, and are intended to rest laterally, one on either side of the vagina, on the soft

parts which form the floor of the pelvis; they are introduced closed, and then made to expand by bringing the metal feet together, which instantly lock.

In order to remove the pessary these feet are pulled apart by the finger and thumb.

Fig. 33.



It is intended that this instrument should be used to prevent the womb from coming out on the same principle as a truss is applied to a case of hernia, and when lying down the one is no more necessary than the other; this pessary should therefore be removed every night and replaced in the morning, and it has this advantage, that the patient, if intelligent, can be taught how to manage its introduction and extraction; it is therefore a form of pessary which cannot lead to the serious consequences

likely to follow from being left in the vagina for a length of time, as is sometimes the case with others which are not under the control of the patient.

If, however, the prolapse be large, or the perinæum much relaxed, or if it have been destroyed by laceration occurring during labour, no matter what pessary you use, it will be forced out by the pressure constantly exerted on it. In such cases, unless you narrow the vagina by operative means, and also permanently reduce the size of the uterus, you can do but little for your patient.

An operation having in view the narrowing of the vagina, originally suggested by Dr. Marshall Hall, has been modified and improved by Dr. Marion Sims. He removes the mucous membrane in the form of a V from the anterior wall of the vagina, the apex being near the neck of the bladder, and the two arms extended up on either side of the cervix uteri. These denuded surfaces he then brings together by wire sutures, passed transversely, thus including a longitudinal fold of the vagina; this has the effect of narrowing that canal considerably. In some of his more recent operations Dr. Sims united the base of the V by a transverse dissection (*Uterine Surgery*, p. 311). This is the best operation that can be performed, and holds out the greatest promise of a radical cure; but in my own practice the results have not been satisfactory, and I now seldom practice it. I must, however, refer you to the work from which I have just quoted for further information on this point, as it is impossible for me at present to enter fully into the subject. If there be great deficiency of the perinæum, or if prolapse of the rectum (Rectocele) exist, it may be necessary subsequently to perform an operation similar in principle, but differing in

details, on the posterior walls of the vagina. This proceeding was advocated by Mr. Baker Brown. The first of these operations has for its object the narrowing of the vaginal canal, the latter the restoration of the perinæum.

But neither of these operations have any direct influence on the uterus itself, which is often enlarged to a great degree. This enlargement in some cases is confined to the vaginal portion of the cervix, which becomes greatly elongated; while in not a few there is little if any descent of the uterus itself.

You saw a well-marked example of this in the woman who presented herself among the extern patients the other day. She is an over-worked needlewoman, and tells you she sits sewing for fourteen or fifteen hours daily. She suffers from partial prolapse of the uterus with great elongation of the cervix, the vaginal portion measuring at least two inches in length. She is unmarried. The perinæum is perfect and the vagina narrow; therefore, in her case, neither of the operations just mentioned is applicable, but, on the other hand, in her you would effect much good by amputating the cervix. I have urged this on her several times, but she is unwilling to submit to the operation; probably the inconvenience and distress which she suffers will by and by compel her to do so.

The operation of amputation of the cervix is a simple one; the hypertrophied part may be removed by means of an écraseur. Great care, however, is necessary in preventing any portion of the wall of the vagina getting under the wire or chain; for if this point be not attended to it is possible that a fold of the peritoneum, or, as occured in a case recently recorded, a portion of the posterior wall of the bladder, may be drawn in and removed,

and thus give rise to very serious and possibly fatal consequences; but it is far better to use the knife or scissors and then to bring the raw edges of stump into contact by means of sutures, leaving an opening in the centre to form the os. However, before having recourse to any operation, you should in all cases try palliative means. It is sometimes astonishing how much can be done by postural treatment, by astringent injections, and by the judicious use of pessaries.

One other form of displacement of the uterus requires mention. I allude to inversion. This displacement may occur immediately after delivery, but it sometimes is due to the presence of a tumour.

The prominent symptom present in cases of chronic inversion of the uterus is hæmorrhage. On proceeding to examine the patient with the view of determining the cause on which this symptom depends, a tumour of variable size and smooth on the surface will be detected projecting through the os into the vagina. This tumour may possibly be mistaken for a polypus, but a careful examination will enable you to arrive at a correct diagnosis. If the case be one of inversion, the sound, which you should invariably use in such cases, cannot be introduced, its progress being arrested by the inverted wall of the uterus, while were the tumour a polypus having its origin from the inner surface of the uterus, the sound would probably penetrate to a considerable depth. At the same time the bi-manual method of examination will prove the fundus to be absent from its normal position, a fact which can, if necessary, be confirmed by the introduction of a finger into the rectum, the sound or a silver catheter being at the same time passed into the bladder, when if inversion

have occurred the absence of the fundus from its normal position will be proved by the fact that the point of the sound can be distinctly felt by the finger in the rectum without the intervention of any solid body.

Inversion of the uterus is not of very frequent occurrence, and probably for this reason the subject has not until recently attracted as much attention as its importance demands. When it has become chronic, it has been generally looked on as being almost an incurable affection, an opinion which recent experience proves to be erroneous. I have succeeded in replacing the fundus in a case in which the inversion had occurred many months previously; while in America great success has attended treatment similar in principal to that which I adopted, but of which I was ignorant at the date of my first operation.

As a rule, inversion of the uterus occurs either immediately after delivery, or as the result of the presence of an intra-uterine tumour; in the former case it has been attributed to the exercise of traction on the funis, an opinion quite untenable, though doubtless dragging at the funis would accelerate inversion in a case in which the predisposing causes were present, but what the predisposing causes are is a question not yet satisfactorily decided. Rokitansky's opinion, that inversion occurring after parturition was due to paralysis of the placental site, has been adopted by most, if not all, modern writers. It is a plausible theory, but one which does not satisfy me, and the consideration of the facts connected with several cases which have come under my own observation, lead me to a different conclusion.

In the first instance, it is noteworthy that in all the cases which have come under my observation in which in-

version was caused by the presence of a tumour, the tumour was sessile, and also that it was attached nearly to the centre of the fundus uteri. I have met with several cases in which pedunculated tumours have been expelled from the uterus, and though in some of these the pedicle was very short and thick, in none did inversion follow. Again, we find in those cases in which inversion occurs immediately after the conclusion of the second stage of labour, and in which the placenta remained adherent till after the accident had occurred, that it is invariably attached to the very fundus. Therefore, in all cases of inversion of the uterus, whether induced by the presence of a tumour or occurring as a sequence of labour, the condition is in both the same, to this extent, that a body, which to all intents is a foreign body, is attached to that part of the uterus which lies between the openings of the Fallopian tubes.

This analogy between the two classes of cases in which inversion occurs being apparent, there must necessarily be some special cause existing in such cases which predispose in the first instance, and subsequently induce the occurrence of the accident.

Most writers are agreed that when inversion occurs immediately after delivery the weakened condition of the uterine wall at the site of the placental attachment is an important predisposing cause, for though the uterus is at this point generally actually thicker than elsewhere, the muscular structure is there relaxed, and as the uterine sinuses are in that situation unusually large the amount of muscular structure is probably relatively less than in other parts of the uterine wall, therefore it is probable that depression of the placental site is of easy occurrence,

were the placenta detached; but that it should occur from this cause while the placenta remains adherent, and thereby gives support to the uterine wall, seems extremely unlikely; and we know from the numerous cases which have been recorded in which the placenta was found to be adherent after inversion had taken place, that the inversion frequently—and in my opinion probably always—takes place, or at least commences before the placenta is separated from its attachment.

In like manner, when a fibroid is developed in the uterine wall, thinning of the muscular structure may possibly occur; but even were this the case, it is quite impossible that the weight of the tumour could alone suffice to cause inversion, for in the two cases in which I enucleated tumours after inversion had occurred, the tumours were of small size, not larger than a hen's egg; thinning of the fundus and any consequent weakness would therefore have little effect, and the weight of the tumour would have been quite insufficient to overcome the resistance which the sides of the uterus would have opposed to its descent. Moreover, that thinning of the fundus occurs is far from being proven; on the contrary, in the case I am about to detail the uterus was throughout of its normal thickness, and the muscular structure in no way impaired. For having submitted the uterus after its removal to the late Dr. Reuben Harvey for examination, he reported that "having made a section of the fundus of the uterus you submitted to me, I examined it carefully, and find the muscular structure fully developed, and perfectly normal." In the case of fibroids, therefore, some other cause is requisite to induce inversion, and that cause I believe to be the occurrence of ex-

pulsive uterine contractions; and reasoning from analogy, this is probably so when inversion occurs after delivery.

Now, uterine action may set in when any foreign body is contained in the uterus, but very frequently fibrous tumours and polypi of large size are found in the uterus without exciting it. I have on several occasions dilated the uterus, and subsequently removed a polypus, sometimes of large size, and yet its presence had not excited any expulsive action. In like manner, sessile fibroids springing from the side of the uterine wall are not expelled through the os uteri, unless their capsule has been incised or absorbed. It therefore appears to me that for inversion to occur in consequence of the presence of a fibrous tumour, the tumour must spring from the fundus, or, if it occur immediately after parturition, that the placenta must be attached nearly centrally to the same portion of the intra-uterine surface.

The fundus is, without doubt, that portion of the uterus most susceptible of irritation. I am not prepared to say how far irritation, originating there, may be the proximate cause of the uterine contractions which occur at the full term of utero-gestation; but this is certain, that any foreign body brought in contact with the fundus speedily excites the uterus to contract, and is, in general, expelled. This is well known to practical gynæcologists, and when tangle-tents are introduced with the view of effecting dilatation of the uterus, care is always taken to prevent their being pushed in so far as to bring their points in contact with the fundus, for if this be done they are usually expelled before dilatation is accomplished. In like manner, if the introduction of a stem pessary be decided on, the depth of the uterus must be measured to insure

that an unduly long stem be not used, or the same result will follow. The presence, therefore, of a tumour attached to the fundus centrally, or the placenta similarly located, may be fairly presumed to have a like tendency to induce expulsive uterine action, which, failing to detach and expel the tumour or placenta, ends in depression and inversion of the fundus.

It may be objected that if the attachment of the placenta to the fundus were a cause prone to induce inversion, it should be of more frequent occurrence than it is, as a sequence of parturition, but I do not think so. I do not believe the "fundal zone" to be "the most natural position" for the attachment of the placenta, as stated by Dr. Barnes. During an obstetric practice extending over thirty years, and with the opportunities afforded by my connection with the Rotunda Hospital, I do not remember a single case in which, when I introduced my hand to remove an adherent placenta, I found it attached centrally to the fundus. In many, doubtless, its upper edge reached to the fundus, but the mass of the placenta lay laterally, and as the lower or cervical zone is "a dangerous placental site," from the tendency to the occurrence of hæmorrhage before delivery, so I believe the "fundal zone" to be also an abnormal placental site, and that if the attachment there be "central," it becomes "dangerous," as tending to the possible occurrence of inversion from the (1st) weakening of the part which it is of importance should be firm, and (2ndly) from the risk of the placenta, if not rapidly detached, acting as a stimulus and exciting uterine action, which, as in the case of the sessile fibroid, ends in depression, and finally in inversion of the fundus.

It is unnecessary for me to add that I disbelieve in the "dragging of the funis" being a cause of inversion of the uterus. In two cases, which came under my own observation, of inversion occurring immediately after delivery, dragging was not practised. Of course, if my theory be correct, and that the funis be dragged at, the placenta being attached centrally, inversion may be accelerated, but I doubt if it ever be the real cause. "Active spontaneous inversion," the term used by Dr. Duncan, may be fairly applied to cases produced in the manner I have endeavoured to describe, only instead of paralysis of the placental site I consider abnormal activity of the muscular fibres of the part to be the distinctive feature of the case. I entirely disbelieve the theory advanced by Rokitansky, and adopted by Barnes, that paralysis of the placental site occurs in these cases.

The symptoms of inversion of the uterus are seldom marked by any special feature. In two cases which I have seen, and which occurred immediately after delivery, the accident was not recognised, nor indeed suspected, till some hours had elapsed. Evidently in them the contraction which had inverted the uterus loosened the attachment of the placenta so that it was removed without difficulty from the vagina, and as far as I could ascertain, without any pulling at the funis; and the continuance of hæmorrhage, not of an alarming character, was the only symptom which attracted attention. In three cases in which the inversion was due to the presence of a fibroid, hæmorrhage was the only symptom present.

Now, as to treatment, if inversion occur immediately after delivery, the placenta should be at once detached and reposition attempted; but it is otherwise if some

days, possibly even hours, have elapsed since delivery; for then the operation becomes difficult, not as is usually supposed, from rigidity of the os and muscular structure of the uterus, but from the very reverse—namely, from the increased softness of the uterine walls. The process of involution of the uterus commences immediately after delivery, possibly, indeed, before expulsion of the fœtus, and in a healthy woman proceeds rapidly: one of the first results being increased softness of the uterine walls. The organ is, in fact, undergoing a species of fatty degeneration, which renders the handling of it dangerous. This was forcibly brought under my notice in the following case.

A healthy young woman was admitted into the Rotunda Auxiliary Hospital on the 5th of May last. She had, three months previously, been delivered, after a natural labour, of a healthy child. She was attended by a midwife; but, as far as could be ascertained, no violence or pulling at the funis had been practised. Inversion, however, occurred; and, after the lapse of a few days, she was admitted into the Sligo County Infirmary, under the care of my friend, Dr. M Dowell. He immediately attempted to to effect reposition, but failing, sent the patient to me for treatment. When admitted, she was greatly exhausted, partly from the effects of the long journey, but still more from the constant hæmorrhage, which had continued ever since her confinement; and, as there was still a constant oozing, I decided to lose no time in effecting reposition, being the more anxious, as I was at that time under the impression that every day which elapsed would only increase the difficulty of doing so. Accordingly, on the day after her admission, she was brought under the

influence of chloroform, and I proceeded to attempt reposition of the fundus, adopting the method which I had successfully practised in a case sent to me from the city of Cork not long before.

On introducing my hand into the vagina, I discovered that the inversion was so complete that the lips of the os uteri were undistinguishable; but, on grasping the fundus and making pressure upwards, I speedily succeeded in pushing up part of the cervix, and I was then able to distinguish the rim of the os; this I seized with a vulsellum, with the view of gaining a point of resistance against my upward pressure; but the lip was so soft, that the vulsellum tore through it immediately. I now applied the end of my repositor to the fundus, but soon found that it sank into the uterine tissue. I therefore withdrew it, and tried to effect reposition by pressure on the fundus with the palm of my hand, while with my fingers I pushed up that part of the cervix which had passed last through the os; but to my horror, my fingers sank so deeply into the wall of the uterus, which seemed as soft as dough, that I believe I must have reached the peritoneum. I at once desisted from any further attempt, and I feared that serious results would follow; the patient, however, did not suffer the least inconvenience. But I had learned a lesson—namely, that it is both difficult and dangerous to attempt the reposition of the fundus in an imperfectly involuted uterus, and I consequently decided to postpone all further attempts till that process was complete. I accordingly allowed five weeks to lapse, and in the interval I had made for me Dr. J. P. White's repositor, to which I shall allude by-and-by; and on my next attempt made use of it. I found it to answer very well; and, as

the structure of the uterus had become much firmer, I soon succeeded in making the fundus to pass fairly within the os, but failed, after a protracted attempt, to effect reposition of the inverted fundus. I therefore decided to close the os uteri by means of wire sutures. This I accordingly did, and thus, inclosing the inverted fundus, I hoped that the steady pressure thus exerted on it would have the effect of reducing the size of the inverted mass, and that reposition would subsequently be more easily effected. This practice is recommended by Dr. Emmet; though he prefers the operation of denuding the edges of the os uteri, and thus closing it permanently.

After the lapse of a fortnight, I made a third attempt, and then found, on removing the sutures, that the os uteri had so contracted since the last operation, that I could only get the fingers into it; the inverted fundus seemed smaller and firmer. Having seized the lip of the os uteri with a vulsellum, I proceeded to use pressure on the fundus with White's repositor, but effected little if any good. The inverted portion had a very peculiar feel; its thickest portion was at the most depending part: here it was about the size of a pullet's egg; from this it narrowed considerably; and the mass felt exactly like an ordinary uterine polypus, with a pedicle rather thicker than usual. It was not, as one would have expected in dealing with an inverted uterus, wider at the base than at the apex, but the very reverse, while the cavity of the uterus was $2\frac{3}{4}$ inches in depth. I therefore felt much doubt as to whether I might not be dealing with a case in which inversion might be complicated by the presence of a small fibroid; the more so as I could not feel any

depression on the surface of the uterus, such as had existed at the commencement of the operation. I believed that, were I dealing with simple inversion, the the case was irreducible, and that I would not be justified in prolonging the attempt to effect reduction, which on this the third attempt had lasted an hour. Under these circumstances, I applied the *écraseur* just above the enlarged portion, and removed what proved to be the inverted fundus and then brought together the divided edges of the stump by means of catgut ligatures. The patient recovered rapidly; but had it not been for the deceptive feel of the part, which led me to suppose that a tumour might possibly be present, I certainly should not have removed it, but have adopted Emmet's plan of closing permanently the os uteri, leaving only a small opening to permit the escape of the menstrual fluid. He contends that, if this be done, no hæmorrhage will occur, while if necessary, the os can at a future time be opened.

At the time that this case came under my observation, I was quite unprepared for the difficulty and danger attending the attempt to effect reposition of an imperfectly involuted uterus. But my first attempt demonstrated this; for, as already stated, my fingers sank at once deeply into the uterine tissue. Since this occurred I have received from Professor White of Buffalo, U.S.A., a copy of his paper on inversion of the uterus, in which he fully confirms the opinion I had formed. On this point, he says: "Whilst undergoing this change (*i.e.*, involution), the uterus does not possess the firmness and elasticity of the unimpregnated uterus, nor the muscular flexibility and toughness of that at the full period of gestation. Indeed, I am induced to suspect that, at this

period, the uterus cannot be subjected, without danger of laceration, to manipulation which would be perfectly safe at a later period, after complete involution has taken place."

The conclusion at which I have arrived then is this: that if, from any cause, reposition of the inverted uterus be not effected within twenty-four hours after delivery, it is better to delay the attempt for some weeks, till the involution of the organ is completed.

This opinion naturally leads me to the conclusion that mere lapse of time does not materially add to the difficulty of the operation; and this opinion is confirmed by the result of the following case:—

S. M., aged 21, was admitted on August 27th into the Rotunda Hospital, on the recommendation of Dr. O'Sullivan, of Cork, who had diagnosed, in the January preceding, the fact that the uterus was completely inverted, the inversion being due to the existence of a fibrous tumour which grew from the fundus. The inversion was complete, and there is reason to believe that it must have existed for quite a year prior to her admission. On August 29th, I enucleated the tumour; and, two months subsequently, I effected reposition with the aid of a very imperfect repositor. In this case, after the lapse of a year, or possibly much more, I effected reposition with little difficulty, having failed in the other case to do so, though but three months had elapsed from the date of her confinement when my first attempt was made.

Dr. J. P. White reports several cases of long standing successfully treated by him, and one in which inversion had existed for no less a period than twenty-two years. Clearly, then, time alone is not an important factor in such

cases, and only is so where repeated attacks of peritonitis have occurred and dense adhesions formed.

The attempt at reduction being decided on, and the time fixed for the operation, it is next necessary to consider the treatment to be employed. Numerous methods have been suggested; but that advocated by Dr. White is in my estimation the best. The following is his description of the instrument and of his operation.

"By means of the 'repositor,' uniform and gentle pressure can be maintained until the os is fully dilated and the fundus pushed up through it. The insurmountable difficulty heretofore has been supposed to consist in our inability to maintain uniform and persistent pressure for a sufficient length of time. The hand would soon become fatigued, and another hand, even of the same individual, could not be substituted without losing a part of what had been gained. This loss is increased when the hand of a fellow-practitioner is introduced to continue the operation. The various substitutes which have heretofore been resorted to for continuing pressure when the operator has become exhausted have utterly failed. The elastic bags, so often called in requisition, press more upon the viscera resting upon the large surfaces anteriorly and posteriorly situated, than upon the fundus, which has no firm ossific base of support, as have the rectum and bladder. The uterus ascends very soon, owing to the yielding nature of the vagina and perinæum, and escapes from the reach of the distended vaginal bags. By means of the large spring at the outer extremity of the instrument, the amount of pressure can be graduated to an ounce. The disc of the instrument will follow up the fundus, without compressing painfully the urethra or rectum, by means of this con-

tinuous elastic pressure in the upward direction, until the fundus disappears in the os or neck. Any intelligent assistant can be trusted to increase or diminish the pressure during the absence of the operator, as the exigencies of the case may demand.

"The construction and action of the 'uterine repositor' will be readily understood by reference to the accompanying woodcuts, Figs. 1 and 2.

Fig. 34.

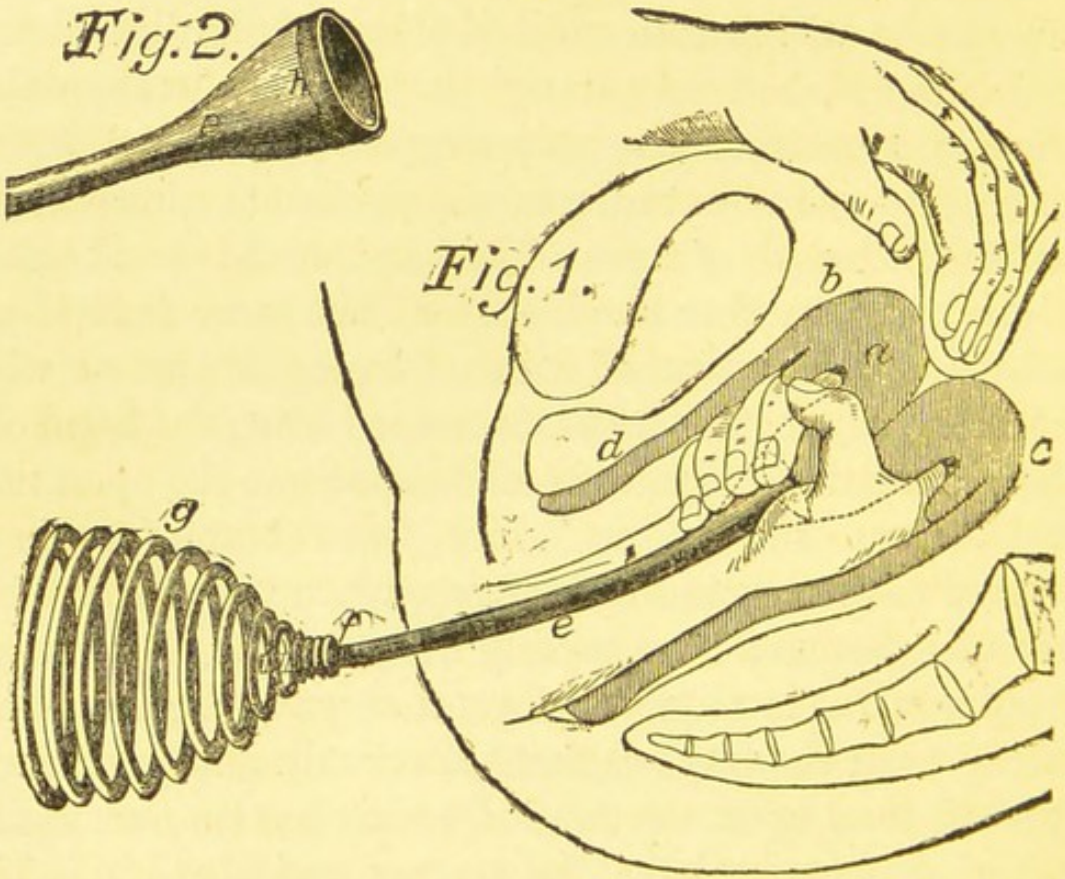


Fig. 1.—*a*. Uterus in process of reduction. *b*. Anterior lip or wall of the uterus, with the fingers of the left hand pressing upon it and assisting in pulling open the uterine cavity. *c*. Posterior uterine wall semi-reflected. *d*. Anterior vaginal wall. *e*. Wooden or hard rubber stem of repositor, its enlarged extremity held in contact with the fundus by the intra-vaginal hand of the operator. *f*. Distal extremity of stem made into a screw, so as to be fastened into *g*, a coil of No. 11 steel spring wire, requiring eight or ten pounds pressure by the breast of the operator, against which it is placed, to bring it down.

Fig. 2.—*h*. Uterine extremity of stem *e*, which is terminated with a soft India-rubber disc 1§ inches in diameter.

"The instrument is composed of a stem of wood or hard rubber curved to conform to the vaginal curvature, with a coil of steel wire attached to the outer extremity, whilst the other end is expanded and hollowed so as to receive the fundus of the uterus in its concavity or disc. The edge of this disc is tipped with soft rubber, being an inch and three-eighths in diameter and about half an inch deep. The concave extremity of this instrument is carried up into the vagina and placed in contact with the fundus, and then firmly held by the hand in the vagina. The outer end of the instrument, or coil of wire, is placed against the breast of the operator, on the same level with the uterus. By means of this large circular spring, the instrument readily keeps its place on the clothing of the operator, and leaves the other hand free to be used above the pubes to assist in fixing the uterus, and assist also in forcing open the dilating os, which can ordinarily be plainly felt through the abdominal walls.

"The spring at the outer end of the instrument enables the operator, without danger of lacerating the tissues, to keep up a constant gentle pressure upon the fundus, and by leaning forward to increase this pressure intermittingly. The force thus exerted is applied more directly upon the fundus by means of the repositor than would be possible if the thumb and fingers were used, or the round end of the large bougie. I have often been delighted, since I have used the repositor, to find that it gave me a third hand which did not become fatigued, and which permitted me to use the left hand in manipulating over the hypogastrium; while the right easily held the instrument in contact with the fundus, and firmly grasped that part of the uterus which was not yet reflected and which

remained in the vagina. The disc, in which the fundus rests, is less likely to bruise and lacerate the organ than any other mechanical appliance. The intravaginal hand compresses the body and fundus, and lessens its vascularity; whilst something is gained by intermitting the pressure, also lessening by its use the exhaustion incident to unintermitting muscular effort on the part of the operator.

"It may be well to state that the patient is always placed at the side of the bed, with the feet resting in the laps of intelligent assistants, each of whom is also charged with the care of the knee and hand of that side. The hips of the patient are brought quite to the edge of the bed, which is raised so as to bring the parts on a level with the breast and arms of the operator."

I feel convinced, however, that the course I adopt of seizing the lip of the os uteri with the vulsellum, and with it, fixing the organ as already described, is very important and greatly facilitates the reduction.

Dr. Aveling, of London, has also invented a repositor which, in his hands, has answered admirably. This instrument consists of a rod with a double bend, which consequently has a pelvic and perinæal curve, and to which is attached a cup to receive the fundus. It differs from other repositors, inasmuch as it enables the operator to apply force to the fundus uteri directly in a line with the axis of the pelvic inlet. Four elastic rings attached to the end of the stem which project from the vagina, are brought up—two in front and two behind—and attached by tapes to four loops of a belt passed round the waist, and which is kept in its place by braces over the shoulder. These rings keep up a pressure which never

exceeds two pounds, and is continuous. "With this instrument the fundus of the inverted uterus may be pressed upwards and forwards in a direct line with the axis of the uterus and the pelvic inlet" (*British Medical Journal*, Sept. 4th, 1879). Dr. Aveling's success with this instrument has been considerable, five cases having been cured by it on an average of forty-three hours.

Doubtless, in some, reposition cannot be effected; but amputation should, if possible, be avoided; and I therefore think in such cases Dr. Emmet's suggestion (if the fundus can be pushed up sufficiently to permit its being enclosed inside the os), of paring the edges of the os and permanently closing it, is well worthy of being practised. It certainly is a justifiable proceeding, and, as Dr. Emmet points out, does not render pregnancy absolutely impossible; for an opening must be left to permit the exit of the menstrual fluid, through which impregnation may possibly take place.

But if all our efforts fail to effect reposition, amputation of the fundus must be had recourse to. This operation, if carefully performed with strict antiseptic precautions is a perfectly safe one, but it should never be undertaken, unless in very exceptional cases. My own experience corroborates the statements of Aveling and White, that the reposition of the inverted uterus can be nearly always effected; and I maintain as strongly as they the advisability and the necessity of perseverance in our efforts to reinvert the uterus; but there are exceptions to this as well as to every other practice. Thus in one of my cases the patient was not only unmarried, but had passed the age at which child-bearing could occur. Protracted efforts had been made to effect re-

position, but they failed, and I subsequently amputated the fundus; and I believe that though the failure to effect reposition was mortifying, the course I finally adopted was the right one, as being best for the patient. Amputation, then, of the fundus of the uterus is not in all cases to be looked on as an unjustifiable proceeding, or the operation as an opprobrium to the profession,

LECTURE XII.

Enlargements of the Uterus—Frequency of—Causes of, considered with reference to Diagnosis.

You must have noticed the extreme frequency with which I use the uterine sound. Indeed, I may say, that I invariably employ it in the examination of all cases presenting symptoms of uterine disease, unless its introduction is contra-indicated by the existence of some special cause. One of my reasons for doing so is this, that in a very large proportion of cases the uterus is enlarged and elongated. The sound enables me to ascertain whether this is the case or not; should it be so, it immediately becomes my duty to endeavour to decide as to the cause on which that abnormal condition depends. I think, therefore, by directing your attention to some of the causes producing enlargement of the uterus, I shall aid you considerably in forming a correct diagnosis in many cases of uterine disease; for, while the subject of flexions of the uterus has of late years been investigated with great care and has attracted quite as much attention as it deserves, the condition I am referring to, though intimately connected with, often indeed the cause of, these flexions, has been comparatively little noticed.

It is not surprising that the older writers should have

overlooked this condition, for it is only of comparatively recent years that we possess the means of ascertaining with any approach to accuracy, whether, in a given case, the uterus was of its normal size and shape, or enlarged and elongated. Now, however, matters are completely altered; by means of the uterine sound we can, in the great majority of instances, measure accurately the depth of the cavity of the uterus; and at the same time, the bi-manual method of examination enables us to satisfy ourselves whether or not the uterine walls are thickened and hypertrophied.

Enlargement of the womb is met with in a very large percentage of those cases in which that organ is affected. Nor is this a matter of surprise when we remember the changes the uterus undergoes. In the virgin state, but a couple of inches in length, and an ounce or so in weight, it becomes, under the influence of pregnancy, developed into a large organ capable of containing the full-grown fœtus, which in a healthy woman is reduced to nearly its original size in the course of a few weeks after parturition; consequently any circumstance which retards or prevents the return of the uterus to its normal size after delivery, may produce, as is now well known, a condition which often results in permanent enlargement, a condition to which, in its early stage, as I have already explained, the term "subinvolution" is applied. But, in addition to these great changes, the result of pregnancy, the uterus every month, as each catamenial period comes round, increases in weight, and probably somewhat in size; if, from any accident or imprudence the natural flow is then checked, this temporary increase may become permanent, an accident which, I am satisfied, is far from

being of unfrequent occurrence. Here, then, at the outset, are two palpable causes of enlargement of the uterus.

We meet, however, with cases of enlargement of the uterus which cannot be referred to either of these classes. Women who have never been pregnant, and never have had any derangement of, or departure from, healthy menstruation, and women who having conceived, have subsequently enjoyed uninterrupted good health for years during which pregnancy undoubtedly did not take place, nor yet any derangement of menstruation occur, occasionally begin to suffer from symptoms referable to the uterus, and, on examination, that organ is found to be enlarged. This, in such cases, may depend on inflammation of the substance of the uterus, either of an acute or chronic character; on hypertrophy of the muscular and areolar tissue of the uterus; on the presence of fibrous tumours developed in the walls of the uterus, and also, as all are aware, on the existence of intra-uterine tumours of any kind, whether they be polypi, fibrous or cancerous tumours. But it is not my intention here to enter on the subject of either uterine polypi or uterine tumours, except with reference to the question of diagnosis. I also purposely omit all reference to the actual existence of pregnancy, or to the retention of any of the products of conception in the uterus, as being foreign to the subject to which I wish especially to direct attention.

To recapitulate, we meet with enlargement of the uterus as the result of—

1st. Subinvolution of the uterus after labour or abortion.

2nd. Congestion of the uterus from suppression or retardation of menstruation.

3rd. Acute inflammation of the uterus, or possibly of its peritoneal covering.

4th. Chronic inflammation of the uterus.

5th. Hypertrophy of the uterus.

6th. The stimulus given to the uterus by the development in its walls of fibrous tumours.

7th. The existence of intra-uterine tumours.

1. Subinvolution of the uterus is now a well-known cause of uterine enlargement. There is no doubt but that it is most likely to occur in those cases in which any form of inflammatory attack, whether it be peritonitis, metritis, or cellulitis, takes place subsequent to delivery. This fact has been pointed out by several writers. If, then, a patient has suffered from any such attack, the possible effect of it in retarding the normal reduction in the size of the uterus, which should take place within a few weeks subsequent to delivery, must be borne in mind, and we should, in such cases, carefully watch for any symptom indicating the presence of this condition. As a nearly invariable rule, profuse menstruation is the first and most prominent symptom indicating the existence of enlargement of the uterus depending on subinvolution; a symptom capable of being easily explained, when we bear in mind the fact, that not only is there under such circumstances an undue amount of blood contained in the enlarged uterine veins, but also, that the relaxed condition of the muscular tissue of the uterus favours the exudation of blood. Profuse menstruation does not always occur immediately; sometimes months first elapse; but ere long, menstruation becomes profuse, and, on instituting an examination, the sound reveals the true state of the case by proving that the uterus is abnormally

elongated. The depth of the uterine cavity in cases of subinvolution varies greatly in such cases. It seldom exceeds three and a-half inches, but I met with one instance in which it measured upwards of five inches.

2. The occurrence of enlargement of the uterus from any cause suddenly checking menstruation, I believe to be by no means rare, but opportunities of proving this do not frequently occur; for, if an unmarried woman complains of fulness and pain in the head, of pain in the back, and of a sense of weight in the pelvis, and states that menstruation has been checked by exposure to cold or by some other obvious cause, we are probably satisfied that uterine congestion exists; but, we are not justified in making a vaginal examination, unless that after a protracted trial, general treatment fails to relieve her. Again, if a married woman exhibits the same train of symptoms, the possibility of pregnancy precludes the use of the sound. Recently, however, I had an opportunity of verifying the fact. A widow, the mother of thirteen children, in whom menstruation had been irregular for three years, had in June last, after a long interval, a return of the discharge. It ceased suddenly, and she suffered great discomfort from a distressing sensation of weight and bearing down in the pelvis, and of fulness and pain in the head. In her case the uterus was three inches in depth, while all the symptoms rapidly subsided under treatment. It may be objected that, in this case, we were ignorant as to what might have been the condition of the uterus previously; but, here was a woman in the enjoyment of good health, suddenly attacked, after the abrupt checking of menstruation, with distressing symptoms, in whom the uterus was proved to be en-

larged, and who was relieved of those symptoms and of that condition by treatment. Is it not then fair to reason that the enlargement was a temporary condition, the result of uterine congestion, itself caused by the sudden checking of menstruation?

3. All modern writers agree that acute inflammation may produce enlargement of the uterus, and I believe that this may be the case, whether the patient suffers from peritonitis, metritis, or pelvic cellulitis. Of the two latter I have no doubt. Of enlargement of the uterus as the result of peritonitis, I had no experience till very recently, but the following case throws some light on the subject:—

Mrs. K., æt. 33, was admitted into hospital suffering from menorrhagia and great pelvic distress. Her last child was born fourteen months previous to admission. She stated that four weeks after her confinement, having been exposed to cold, she was attacked with severe pain over the whole abdomen. The pain, after a time, became localized in the left iliac fossa, and, by degrees, nearly entirely disappeared. At the expiration of two months from the date of this attack menstruation came on very profusely, and lasted for six weeks. She now obtained medical advice, and was treated for, she was told, "ulceration" of the os uteri; but although the menorrhagia was in some degree checked, the pain from which she suffered again became very severe. On admission into hospital the uterus was found to be retroflected, a certain amount of granular erosion existed, and menstruation was profuse. The uterus was enlarged, but only to a trifling extent. The use of a pessary and other appropriate treatment speedily improved the condition of the womb, and she returned

home apparently cured. At intervals, however, she still suffered from attacks of abdominal pain. But she again caught cold, and was re-admitted into hospital labouring under a well-marked attack of sub-acute peritonitis. Leeches, fomentations, and the exhibition of opium relieved her. During the course of this attack I twice measured the depth of the uterus, and found that it had increased in length by nearly an inch. She did not menstruate during this attack.

4. Chronic inflammation of the uterus, being of more frequent occurrence than the acute form, is a more common cause of enlargement. Such cases are constantly coming under observation. They are frequently found in connection with retroflexion of the uterus. In these cases menstruation is generally diminished, unless, indeed, a granular condition of the intra-uterine mucous membrane also exists; but this is not the form of uterine disease in which that condition is most likely to occur. The amount of elongation, too, in these cases is seldom great, the depth of the uterus seldom exceeding three inches.

5. Next I shall call your attention briefly to that condition, which, for lack of a better name, I term hypertrophy of the uterus. I mean to include under this head those cases in which the whole of the uterus, or some portion of it, slowly and imperceptibly increases in size. Sometimes the cervix alone is implicated, that portion of the organ becoming elongated and thickened, or the body alone may be affected, while in other cases, the body and cervix are equally engaged, and become thickened, enlarged, and frequently painful to the touch, the pain being apparently due either to hyperæsthesia of the

nerves of the uterus, or to the pressure exercised on them by the hypertrophied tissue by which they are surrounded.

In these cases menstruation, as a rule, is but little altered in its character; sometimes it is slightly diminished in quantity and not unfrequently becomes painful, but I do not remember meeting with a case in which menorrhagia was present.

The pathology of this form of uterine enlargement is very obscure; the fibres composing the muscular tissue of the uterus appear to be elongated and thickened, while there is also hypertrophy of the areolar tissue. Both conditions may have their origin in a low form of inflammation which at the time escaped observation; but we cannot, in the present state of our knowledge, say why in a certain case the cervix uteri elongates and enlarges till by its very size and weight it irritates and causes distress; while, at the same time, the body and fundus of the uterus, participating in the unhealthy condition of the cervix, become heavy and enlarged, and in another case, seem to remain in their normal condition. Excessive indulgence in sexual intercourse has been set down as a cause of enlargement and hypertrophy of the cervix, but I doubt this much.

A case of hypertrophy of the cervix, occurring in an unmarried woman, has recently come under my observation. She is a dressmaker, æt. 28, an industrious woman, sitting at work for upwards of twelve hours a day. She complained of weight in the pelvis and of bearing down. She also suffered from the most obstinate constipation. Menstruation was regular, but generally accompanied by pain. On making an examination the os uteri was found

to rest on the perinæum; the cervix was elongated and thickened, and the fundus slightly enlarged. This woman would not come into hospital, and consequently I have had no opportunity of trying the effects of treatment, from which, in truth, I would anticipate but little benefit.

Any person who has read MM. Bernutz and Goupil's work on *Diseases of Women*, published by the New Sydenham Society, will at once see that the condition I am now referring to is very similar, if not analogous, to that termed by M. Huguier, "allongement hypertropique" of the uterus; a condition which he divides into two classes—namely, sub-vaginal and supra-vaginal, a division the actual value of which I do not highly appreciate. I am inclined to the opinion that, although we may have enlargement of the body of the uterus without the cervix being engaged, the cervix is never enlarged for any length of time, without the supra-vaginal portion of the organ becoming implicated in the disease. I also believe that not a few of the cases recorded by M. Huguier were cases of subinvolution of the uterus following delivery, and not of the condition which I have termed hypertrophy.

But, in addition to these cases of hypertrophy with elongation of the cervix or of the body of the uterus, or of both, we meet with cases in which there is no elongation, but the very reverse. We sometimes find the cervix shortened, drawn up, as it were, into the body of the uterus, sometimes disappearing altogether. In such instances the body of the uterus assumes a globular form. This form of enlargement gives rise to considerable distress, and it sometimes seems to cause distressing

irritation of the bladder. In one case, which was for years occasionally under my observation, this symptom was the prominent one, and that for which the patient sought relief.

There is no form of uterine disease in which so little can be effected by treatment as that to which I am now referring. The use of the actual cautery, as advocated in a previous lecture, has proved in my hand more serviceable in these cases than any other method, and even if you are satisfied that the cervix only is affected, it should be tried in preference to amputation, which should not be resorted to except in extreme cases, if indeed at all.

6. It remains for me to allude, and I shall do so very briefly, to that form of uterine enlargement in which the organ is stimulated, and increases in size from the presence of a fibrous tumour embedded in, or growing from, some portion of its walls. Cases are recorded in which a fibrous tumour of very small size, perhaps not larger than a nut, so stimulated the uterus, that it increased to five or six times its normal size, the cavity, too, being proportionally elongated. These cases are most perplexing, a *post mortem* examination alone being capable of revealing their true nature. Fortunately they are not of frequent occurrence. In the great majority of instances a fibrous tumour sooner or later will bulge into the cavity of the uterus, or project out on the peritoneal surface. In either case the tendency of disease is to render menstruation more profuse; while in that form of enlargement depending on hypertrophy of the fibrous tissue of the uterus (and which is the only form liable to be confounded with the one now under consideration), menstruation, if interfered with at all, is more likely to

be diminished than increased. The subject of fibrous tumours of the uterus does not come within the scope of the present lecture. I wish, however, to draw attention to those cases, of by no means unfrequent occurrence, where enormous fibrous growths exist, in which the womb is, as it were, embedded and almost lost. These cases have over and over again been mistaken for ovarian tumours, a mistake which the use of the uterine sound should enable us to avoid. It tells us not only what is the length of the uterine cavity, but also whether the uterus is free or embedded in the tumour.

Now, as to diagnosis. I have already stated that the sound, and that alone, enables us to decide as to whether the cavity of the uterus be elongated or not, but it affords us no clue as to the cause of the enlargement. A few general rules, however, if they do not enable us to give a positive diagnosis, will at least facilitate materially our decision as to the nature of any case. Thus, if we meet with an enlarged uterus in a woman who has recently aborted or been delivered at the full time, even though several months have elapsed, the probability is in favour of the enlargement being dependent on subinvolution, and this opinion will be confirmed if menorrhagia be present, as is nearly always the case, at least when the affection is of recent origin. Again, metritis, pelvic cellulitis, or peritonitis, if present or of recent occurrence, are fully sufficient to account for this condition of the uterus, and it should be always borne in mind that it does not follow that the enlargement will disappear with the subsidence of the inflammation. In other cases, we should ascertain if menstruation has been checked or suppressed, and if symptoms referable to the uterus have followed on

this; or if, again, pain in the back and over the pubes was first noticed, menstruation being subsequently lessened or suppressed. In the former case we are likely to find that the enlargement depends on congestion, in the latter on chronic inflammation. It is of no small importance, in deciding on the cause to which enlargement is due, to note the condition of the menstrual function, for that will often, in doubtful cases, materially aid our diagnosis; thus, if the enlargement be the result of chronic inflammation, menstruation will most probably be lessened in quantity; if to subinvolution, the flow will be augmented. Then, again, if there be menorrhagia in a case in which the uterus is enlarged, unconnected with any of the causes noticed, we may expect to meet with intra-uterine polypus, or fibrous tumours, and it will be our duty to clear up the doubt which exists, by dilating the cervix and exploring the interior of the uterus.

As I have called your attention to the subject of enlargements of the uterus, with the hope that I may aid you in arriving at a correct diagnosis in cases in which that condition exists, I shall not enter at any length into the question of treatment; that of subinvolution was fully discussed on a previous occasion, and I must refer you to what was then said on the subject.

In cases of enlargement following sudden suppression of menstruation, the administration of saline purgatives, and subsequently of the bromide of potassium, in full doses, will generally, if the case be recent, prove sufficient; but should it have been neglected in the early stages, it will probably pass into the condition of chronic inflammation, a condition over which medicines possess little influence. The prolonged use of the perchloride of mer-

cury in doses of $\frac{1}{20}$th of a grain three times a day has been recommended in these cases. I have seen, I think, more benefit result from local depletion by puncturing the cervix uteri, than from anything else, and it is a mode of treatment deserving a fair trial. To be of use it must be repeated frequently, at intervals of about five days. The application to the verge of the anus, of two or three leeches, immediately after the termination of a menstrual period, where menorrhagia is present in connexion with a relaxed and engorged uterus, also often proves beneficial.

In cases where the uterus has become enlarged and hardened, as the result of chronic inflammation, the use of the waters of Ems or Kreuznach seems sometimes to have a very beneficial effect, and if the patient's means are such as to admit of her visiting either place, a trial should be made. As to hypertrophy of the uterus, treatment is seldom likely to effect much good.

In cases of enlargement of the uterus from inflammation of an acute character, I believe that rest, the exhibition of opium, and the application of warm poultices over the abdomen, are the means upon which we should most rely. Depletion, if practised at all, should be in a limited degree by a few leeches externally. Mercury I consider to be not only useless but actually deleterious.

LECTURE XIII.

Cancer of the Uterus—Pathology of—Varieties met with in the Uterus—Medullary and Epithelial Cancer—Symptoms—Hæmorrhage—Pain—Fœtid Discharge—Cauliflower Excrescence—Amputation of Cervix—General Treatment.

I PROPOSE to-day, gentlemen, to call your attention to the subject of cancer of the womb; of which disease, unfortunately, we have had several examples recently. You must not suppose that the subject is unimportant because the disease is, in all probability, not susceptible of cure, for you can sometimes prolong life, and always alleviate suffering; besides it is of great importance that you should be capable of recognizing the existence of cancer, and of being able to pronounce that a disease which may simulate it is not malignant. The idea of cancer is ever present to the minds of women, and few of them suffer from any chronic uterine ailment, without fearing that they may be the subject of that dreadful disease, and are sure to question their medical attendant closely. I need not delay in pointing out how injurious it would be to your character were you to pronounce a woman to have a cancer, who laboured under such a comparatively innocent disease as inflammatory hypertrophy of the cervix uteri. Or, how lamentable would be the consequences, were you to assure your patient that nothing serious was wrong with her when death was

inevitable. Yet, both these mistakes are frequently made; mistakes for which there is but little excuse.

Cancer of the womb is most frequently met with in women who have passed, or at least attained, middle age; but this rule must be received with great reservation. Women under thirty are not unfrequently attacked with it, and it is important that you should bear this in mind, lest, misled by the youth of your patient, you should give a favourable prognosis in what is really a hopeless case. Still, it is in the decade between forty and fifty that the greatest proneness to the disease manifests itself, 50 per cent. of all the cases occurring between these ages. This, you are all aware, coincides with the period at which what is termed "the change of life" in women takes place, when menstruation and the active functions of the reproductive system cease.

There is no disease the symptoms of which are so uncertain as those which usher in cancer of the uterus; very frequently indeed, it develops itself so insidiously that the patient's attention is only attracted to what she supposed to be a very recent malady, when in reality our first examination proves the disease to be far advanced towards its fatal termination. The patient, Mrs. S., is a striking example of this fact. She believed herself to have been in good health up to the 4th of last month, when hæmorrhage set in; but this is impossible, for the entire of the vaginal portion of the cervix is already destroyed, the uterus is firmly fixed by the deposit of cancerous matter in the surrounding tissues, and a gaping opening, surrounded by a jagged, indurated and ulcerated mass, is all that is left of the lower segment of the uterus. Her end cannot be far distant. Yet it is but a

month since her attention was first attracted to her condition.

Now, gentlemen, I must take it for granted that you all know something of the pathology of cancer. This is a part of the subject which I cannot dwell on at any length in a clinical lecture—I shall only say, lest I should have any hearers who are altogether ignorant of the subject, that this dreaded disease consists primarily of the deposits or more properly of the development, of an abnormal material in tissues hitherto healthy, and which, consisting in a great degree of cells of a peculiar formation, has a great tendency to invade neighbouring structures, and at a later period to take on a process of destructive ulceration. Dr. West, adopting the words of Müller, defines cancer to be "those growths which destroy the natural structures 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." But, in truth, the origin of these growths is a puzzle to pathologists.

Of the various forms of cancer, two only are, as a rule, met with in the uterus; namely:—

1st, the Medullary, and

2nd, the Epithelial.

Instances no doubt of true scirrhus, or hard cancer, and of colloid, or gummy cancer are recorded, but they are exceedingly rare, and we may for the present set their consideration aside; the more so as, with the exception of the greater slowness of progress, there is not any

essential difference between the course of these two varieties and that of the medullary form.

As already stated, the first step in the production of the disease is the development of cancerous matter in the substance of the healthy organ; and I may here remark that it is in the vaginal portion of the cervix uteri that this nearly invariably occurs. Why this should be is not clear, but such is the fact. In a few rare instances, however, the body or fundus is the primary seat of the disease.

Medullary cancer appears in general first to attack the submucous tissue of the vaginal portion of the cervix, and subsequently to extend to its muscular structure. Very soon the adjacent parts become implicated. The cancerous growth invades the tissues situated between the uterus and the bladder anteriorly, and the rectum posteriorly, and in consequence the cervix becomes fixed and immovable. By and by the mucous membrane at some point gives way, and an ulcerated surface is formed. The feeling communicated to the finger by this ulcer is unmistakable. It is hard, irregular, with sharp edges, and generally bleeds on the slightest touch. The ulceration extends with considerable rapidity; occasionally, indeed, granulations arise on its surface, and at one point an attempt may be made at cicatrization; but this soon gives way, the granulations disappear, and the disease spreads as before.

When this stage is reached, we generally find a most characteristic discharge present. It is dark in colour, profuse, and fœtid. Sometimes the fœtor is so strong and unmistakable that it is possible to diagnose the disease from the smell alone, even before we make any

examination; but this is not always so. The patient whose case I have alluded to is an example of this latter condition; for though the disease is in such an advanced state, she has but little discharge and that by no means fœtid. Hæmorrhage, too, if not previously present, is now nearly sure to occur, and it is very probable that the decomposition of clots of blood within the uterus may be one, though not the sole, cause of the fœtid character of the discharge. The disease is all this time spreading upwards, and engaging the body of the uterus, and sometimes cancerous masses project into its cavity, while at the same time the vagina, also nearly invariably becomes involved. Sometimes, the posterior wall being affected, the disease extends backward till the rectum becomes implicated; but, more commonly, it is the anterior wall which is chiefly engaged.

When life is prolonged beyond this stage, the ulceration may destroy not only the muscular structure of the vagina, but also the adjacent walls of the bladder or rectum, or even of both. And then, to the sufferings previously experienced, are added the miseries incidental to vesico- or recto-vaginal fistula. Under such circumstances death is brought about by a process of gradual exhaustion; more frequently, however, the patient sinks at an ealier stage from the effects of the constantly recurring hæmorrhage. The following accurate description of the *post mortem* appearances usually met with in cases of cancer is given by Mr. H. Arnott, in Vol. XXI. of the *Transactions of the Pathological Society of London*: —"It will be noted that in nearly every case the seat of disease is the same. The os and cervix are more or less completely destroyed, and the foul ulcer resulting in-

cludes the upper part of the vagina. In more severe cases the floor of the bladder is invaded, and perhaps freely perforated, whilst even the rectum may be opened into the vagina, the uterus itself being sometimes almost wholly consumed in the general havoc. In one remarkable case the os and cervix remained whilst the whole body of the uterus was destroyed by cancer." The pelvic glands are frequently the seat of secondary cancerous deposit, while in not a few the ovary and even more distant organs, including the heart and lungs, may become implicated in the disease.

Now, with respect to epithelial cancer, which is the other form so commonly met with in the uterus, it differs from the medullary in this, that it is generally developed as an outgrowth, or excrescence from the cervix uteri. In general it seems first to appear as a tubercle, this increases rapidly, after a time it becomes fissured, and branches out, so as to form a soft irregular mass, commonly called, from its resemblance to the vegetable of that name, "cauliflower excrescence:" a resemblance, however, which is frequently wanting. The discharge arising from this is very profuse and watery, but is not generally so fœtid as that proceeding from the medullary form. The growth often attains a considerable size, sometimes forming a mass which completely fills the vagina, and which, from being very vascular, is invariably accompanied by hæmorrhage.

Epithelial cancer occasionally attacks the vagina as a primary disease. We have had an example of this recently in hospital, in which the superficial ulceration extended to the very vulva, and the patient sank, worn out by pain and repeated, though trifling, attacks of

hæmorrhage. In her case the entire surface of the vagina was constantly covered with a dark, pultaceous slough. Another patient was admitted for profuse hæmorrhage which threatened life. This was found to proceed from a spot on the anterior wall of the vagina, not larger than a split pea; it was hard to the touch, and had a puckered appearance. In a third case, a large mass of epithelial cancer grew from the posterior part of one labium. While twice I have met with examples of malignant disease of the clitoris. In one of these the labio minora was also engaged.

Having thus given you an outline of the course which cancer of the uterus usually runs, I must refer to the symptoms it gives origin to. In the early stages at least they are most vague and uncertain. To such an extent, indeed, is this the case, that we not unfrequently meet with instances in which the entire of the lower portion of the cervix uteri has been destroyed by the ravages of disease, and yet the existence of cancer has never for a moment been suspected either by the sufferer or by her friends. The patient to whom I first referred affords a well-marked example of this. She is a married woman, aged fifty, has given birth to twelve children, and has had two miscarriages. Six years ago she ceased to menstruate, and was perfectly free from any symptom of uterine disease up to the 6th of last December, when she noticed a discharge which resembled in all respects natural menstruation, being red in colour, free from smell, moderate in quantity, and not accompanied by pain. The appearance of this discharge did not cause her any anxiety, and she continued apparently to enjoy her usual good health till three weeks ago, when (on the 4th January) she was sud-

denly attacked with profuse hæmorrhage, which has never entirely ceased. At no time has there been any fœtid discharge, nor did she suffer pain, except a dull backache, apparently the result of debility. But, on making a vaginal examination, we found the uterus fixed by the deposit of a large quantity of cancerous matter in the tissues surrounding the organ, while the lower portion of the cervix was already destroyed by the process of ulceration, and a wide, gaping, irregular opening, led up to the body of the uterus. Now, this case is very instructive—it shows how insidious the disease may be. Not only is there an extensive deposit of cancerous matter, but a considerable portion of the uterus has been destroyed by ulceration, and yet, till three weeks ago she presented no symptom of disease, except the hæmorrhagic coloured discharge which appeared a month previously, and which she believed to be a return of normal menstruation. Moreover, it shows that you may have extensive cancerous ulceration without its being accompanied either by pain, fœtid discharge, or any appearance of cancerous kachexia. But cases of cancer usually present all these symptoms in a greater or less degree. You will therefore be correct in considering hæmorrhage, fœtid discharge, pain and cancerous cachexia as being the symptoms of cancer of the uterus, though none of them are necessarily present. I shall say a few words on each.

First, with respect to *hæmorrhage*; it is the most common and most important of them all; it is also the one which, as in the present instance, is generally first noticed. If the patient has not ceased to menstruate, she will probably tell you that her attention has been attracted by observing the catamenia to become much more profuse,

and to last a longer time than formerly; then, that the discharge has commenced to appear irregularly, returning at intervals of a few days, till finally it is almost continuous. If, on the other hand, she has passed the "climacteric" period of life, the first symptom most probably will be—as was the case with the patient first alluded to—the sudden appearance of hæmorrhage, which is occasionally profuse. Sometimes hæmorrhage occurs before any ulceration has taken place; this is especially likely if menstruation has not previously ceased; but it is after ulceration has occurred that it, as a rule, becomes so prominent, and often so alarming a symptom. Cases, however, are met with in which is it not present at all; they are, however, rare. It may not be an early, or a prominent symptom, but seldom, indeed, it is altogether wanting. In general, as the disease advances and the ulceration spreads, the bleeding becomes more profuse, sometimes in the form of a continuous draining; more frequently, as well-marked attacks of hæmorrhage, occurring at short intervals, often alarming, and threatening life itself, sometimes even proving fatal, though much more frequently the patient dies from the exhaustion consequent on the frequent losses of blood.

Pain.—Of all the symptoms indicative of cancer, pain is the most fallacious. Cancer, in its early stage, is without doubt, in general, a painless disease. This statement is, I am aware, directly at variance with preconceived notions. Women invariably associate the idea of pain with the existence of cancer, and believe the absence of suffering to be impossible; this is, however, a popular error. I have but to refer to Mrs. S., the patient to whose case I am specially calling your attention, as a proof of

this. Here is a woman dying of cancer, and yet she is entirely free from pain; I fear, however, that her prospect of this immunity from suffering continuing to the last is very doubtful, for as the disease progresses, pain is seldom absent; frequently, indeed, it becomes almost unbearable, so terrible are the paroxysms, so excruciating the agony. Bear in mind, however, that this applies to the stage of ulceration only. This absence of pain forms one of the chief diagnostic marks between chronic inflammation of the cervix and *cancer in its early stages.* When you meet with a patient who has for a lengthened period suffered from pain referred to the back, to the uterine and especially the ovarian regions, shooting down along the inside of the thigh, and who on examination, proves to have a thickened, indurated cervix, the uterus being movable, the probability is that this is due to chronic inflammatory hypertrophy, and not to malignant disease.

But, as already mentioned, the immunity from suffering generally ceases after ulceration has taken place; we find, too, that the attacks of hæmorrhage often come on during severe paroxysms of pain, and seem to relieve them, leading to the supposition that the pain is due to some form of congestion, for were it not so, the hæmorrhage could hardly bring relief, as undoubtedly it often does. Be this as it may, the fact remains, that the terrible sufferings in the second stage of the disease present a marked contrast to the immunity experienced in the first; and though there may be occasional instances in which pain is absent even to the last, they are unfortunately rare.

Fœtid Discharge.—This, too, is a symptom of variable occurrence; ordinarily, a discharge accompanies the early stage of malignant uterine disease, but not to an extent

sufficient to alarm the patient; as changes in the cervix take place, however, and an open cancerous ulcer is formed, the discharge assumes a different character; it becomes more profuse, dark-coloured, and fœtid. In many instances this odour is so marked, that without asking a question or making an examination, the experienced physician can pronounce the patient to be suffering from malignant disease. Sometimes the fœtor is intolerable, and the profuseness and acridity of the discharge so great, as to add materially to the patient's suffering by giving rise to painful excoriations. In epithelial cancer, the discharge is more watery, and seldom so fœtid as in the medullary form.

The cases of epithelioma or cauliflower excrescence which have been for some time past in our ward, differ in many respects from that of Mrs. S., who afforded us an illustration of the medullary form. One patient, E. K., aged only twenty-three, is five years married, but has never been pregnant. She states that she was quite well till about two months ago, when menstruation became suddenly profuse. Shortly afterwards she perceived a fœtid watery discharge to appear in the intervals between each period. She suffered from severe left side pain of a paroxysmal character, which became aggravated before each attack of hæmorrhage, and also from diarrhœa. On examining her after admission, the whole of the upper third of the vagina was found to be occupied by a large mass of epithelial cancer; the disease had also extended to the anterior wall of the vagina. Her case was hopeless; we could but relieve her pain by subcutaneous injections of morphia, and check the discharge by astringent lotions, and by the exhibition of iron, &c. She died shortly after.

In another case, I at first entertained hopes of being able to save, or, at least, to prolong life.

This patient was a young woman, aged twenty-eight, married, and the mother of one child, which at the period of her admission into hospital, was four years old; in the interval which had elapsed since its birth she had had three miscarriages, the last occurring twelve months prior to her admission. Her health had been very good up to October last, when she remarked for the first time, a sanguineous discharge, which appeared in the interval between two regular menstruation periods. It only lasted three or four days, and then ceased, but reappeared at irregular intervals during the next four months, never lasting more than a few days; and as her general health continued good, she paid no attention to it. In March last this discharge became more profuse, and when admitted into the hospital on the 16th of April, she was in a very anæmic condition. She complained of weakness and pain in the back, but of nothing else. The discharge, which was very profuse, was of a sanguineous, watery character, and not very fœtid. On making a vaginal examination, a cancerous mass, was found, growing mainly from the posterior lip of the os uteri; the anterior lip was also engaged, but in a less degree. The vagina was not implicated in the disease, the uterus was movable, and on passing the finger upward, the cervix uteri appeared to be perfectly healthy. I therefore thought it to be one of those cases in which it would be justifiable to give the patient a chance of prolonging life by operation, and determined to attempt the amputation of the entire of the cervix uteri above the diseased portion. This was accordingly done with the écraseur. Much difficulty was ex-

perienced in getting the wire round the cervix, as it became entangled in the soft mass which filled the vagina. However, after some little manipulation, I succeeded in encircling the cervix above the growth, but the moment I attempted to constrict the cervix by tightening the wire, the apparently healthy tissue yielded, the wire sank into a mass of soft cancer, and I found it impossible to remove the entire of the cervix. We succeeded, however, in getting away a large portion, and the stump was then freely cauterized with strong nitric acid. The patient experienced no pain subsequently, and she improved greatly after the operation; the hæmorrhage entirely ceased; she put up flesh, and was discharged after a few weeks. I was aware at the time that this improvement could only be temporary, and I was not, therefore, surprised when the poor woman again sought admission, after the lapse of about six months, to find that she was in a hopeless condition, dying rapidly; she expired a few days subsequently.

On making a *post mortem* examination, the body of the uterus was found to be perfectly healthy. The cavity did not exhibit the slightest trace of disease; it was entirely confined to the cervix, from which the cancerous mass could be seen growing. The vagina, which had not been affected when she was first admitted, was also now engaged.

This case presented four points of interest. First, it showed at what an early age this form of cancer may attack the uterus. Secondly, it illustrated the possibility of hereditary taint, for she stated that her mother and two of her own sisters had died of uterine cancer. Thirdly, it showed in what an insidious manner epithelial cancer

may come on. When she was admitted she was in a nearly hopeless state, and yet believed herself to have been ill but a few weeks, and complained only of weakness. Lastly, as to the operation. It proved how very unpromising a one, amputation of the cervix is, and I now have virtually abandoned it.

In a third case the operation of amputating the cervix promised very satisfactory results. The patient, a married woman, aged forty, was sent into hospital for the relief of what was supposed to be incontinence of urine. Neither the woman herself, nor the surgeon who had seen her, had any idea that she was the subject of uterine disease. She was free from pain, and merely complained of weakness, and of a constant watery discharge, which saturated her linen, and which she supposed to be urine. However, on making a vaginal examination a large mass, evidently a malignant growth, was found springing from the lips of the os uteri. On passing the finger beyond this, apparently healthy tissue could be felt. I therefore determined to remove the whole cervix without further delay. The cervix was easily encircled with an iron wire, but so very dense was the tissue to be divided, that this broke. However, by substituting for it a strong steel wire I was enabled to divide the cervix. Considerable hæmorrhage followed, which was restrained by the application of the perchloride of iron. This woman made a rapid recovery, and was discharged in a few weeks, apparently cured, for the whole of the diseased mass was removed; a section of the divided surface examined under the microscope exhibiting no trace of cancer cells. This case was instructive from the almost total absence of symptoms. Our hopes of effecting a permanent cure proved, however, in

this case, also, to be fallacious. After the lapse of a year this patient presented herself again. She stated that for some months after the operation she had enjoyed good health, but that of late her abdomen had begun to enlarge, and that she constantly suffered pain of a very intense character. On examination the uterus appeared to be healthy, and nothing definite could be made out to account for her great sufferings. Her condition, however, rapidly became worse, and she died within a month in the greatest agony. On a *post mortem* examination being made, death was proved to have been due to the growth of an enormous mass of soft, jelly-like substance, which filled up the whole of the right inguinal region, and which was evidently of a malignant character; the uterus was healthy. Here the disease had without doubt been eradicated from the uterus, the organ first attacked, but only to reappear, and in another locality, in a different and aggravated form. Still, by the operation, life had been prolonged for quite a year.

As a commentary on this case, the following extract from Dr. Graily Hewitt's work is very appropriate:—"As a palliative measure frequently, as a curative measure occasionally, amputation of the cervix uteri (in such cases) is a valuable operation; it may possibly prevent a fatal result altogether; it will almost certainly postpone that fatal result even when inevitable. The bleeding and a copious exhaustive discharge are at once arrested—and for a time the source of danger is removed." I can add nothing to this passage; however I do not now amputate the cervix, but in place of it have several times performed the operation introduced by Dr. Marion Sims. Instead of amputating the cervix, an operation which in

many cases fails to remove more than a portion of the cancerous tissues, he boldly follows the disease right up into the uterus, first removing as much as possible of the diseased mass with a curette or scraper, and then dissecting away with a small, sharp knife the subjacent tissue until healthy structure is reached, the dissection being carried up in some instances beyond the os internum; necessarily a portion of the uterine wall is also removed. This bold operation is, if carefully performed, quite safe; doubtless it is very tedious, and the bleeding is sometimes great. I have performed it several times. All the patients were much benefited by the operation, but in two I know the disease reappeared. I quite agree with Dr. Sims when he says, that though cure in cases of cancer is seldom to be hoped for, from the liability of the disease to recur in another or the same organ, still that the operation gives much greater hopes of success than mere amputation, and that, as a matter of fact, he has patients under his observation for two or three years without there being as yet any recurrence of the disease.

In order to perform this operation efficiently, it is necessary to procure the knife invented by Dr. Sims for the purpose. My first operation was performed with an ordinary knife, and it was not satisfactory. I then obtained from M. Collin, Maison Charrière, Paris, Dr. Sims' knife; it is a beautiful and ingenious instrument, the blade can be fixed at any angle, and my second operation performed with it was all that could be desired; the dissection, which occupied nearly an hour, reached beyond the os internum; the large gaping ∧ shaped cavity which represented the canal of the cervix was than filled with cotton previously saturated with the *Liq. ferri perchloridi fort,*

and partially dried. This was left *in situ* for some days till it loosened of itself and came away with the fluid used in syringing the vagina. After it had been removed, the cavity, somewhat contracted by this time, was again packed with cotton, saturated with a strong solution of the *chloride of zinc*, and partially dried. This application caused, as it always does, much irritation, and some pain. The cotton was left in the cavity for four days, and on its removal no further treatment was adopted. The cavity contracted rapidly, and the condition of all my patients rapidly improved, but in every case, in which I did not lose sight of the patient, I found that sooner or later the disease recurred, the operation, therefore, must be looked upon as only palliative.

The failure to save life by either amputation of the cervix or excision of the diseased parts, in the manner which I have just described, has induced surgeons to attempt extirpation of the whole of the uterus, in cases of malignant disease attacking that organ, and this operation introduced by Freund, has been successfully performed on several occasions. The results have not been very encouraging; nor can this be a matter of surprise when we remember that this operation, which involves the removal of an organ situated deep in the cavity of the pelvis has to be performed on a patient in a condition most unfavourable for undergoing it, without taking into consideration the risk of wounding important organs during its performance. Thus, in addition to the evident danger of wounding the bladder or intestines, it appears, according to a statement made in the *British Medical Journal*, that in two cases recently operated on by experienced London Surgeons, "one or both ureters were

cut or tied," during the operation. Still, as a painful death awaits the subject of this terrible disease, not a few will be found ready to run the risk of a speedy death, on the chance of a favourable result occurring. Therefore, I believe the operation will continue to be performed.

In the first place, I must point out that two totally distinct operations have been suggested, known respectively as Porro's and Freund's. In the former, the fundus only is removed, the os and cervix being left *in situ*; while in Freund's, the entire uterus is extirpated. Porro advocated his as a substitute for the Cæsarean section in deformed women, or in women in whom some obstruction existed which rendered the birth of a living child impossible, the uterus, however, being healthy; Freund, on the other hand, had in view the removal of a cancerous uterus. His operation has been performed in two ways, viz.: 1. By the abdominal section; and 2, *per vaginam*, the attachment of the bladder and vagina to the uterus being carefully separated from below, the uterus then being drawn down, the broad ligament, ligatured and severed—these steps of course being reversed when the abdominal section is preferred.

To exemplify the class of cases in which the operation is justifiable, let me call your attention to the patient on whom I so recently operated.

E. C., a married woman, æt. 58, the mother of one child, now 24 years old, was admitted into the Rotunda Auxiliary Hospital, on the 3rd of October. She stated that she was a member of a healthy family, that for many years menstruation had been irregular, and scanty, but never painful, and that it finally ceased to appear when she was 50, that is eight years ago; subsequently she con-

tinued to enjoy her ordinary health till September last, during which month she observed drops of blood on her linen, and from that time she had never been free from a sanguineous discharge. This, usually scanty, occasionally became very profuse. At first she did not suffer pain, but felt very weak, and in July last, she then began to suffer severe pain. This seemed to originate in the left ovarian region, to extend downwards along the course of the Fallopian tube to the groins and down the inside of the thigh. She described the pain as coming on in paroxysms, at somewhat regular intervals. These paroxysms were generally accompanied by the expulsion of some clots, and were relieved by the occurrence of the sanguineous discharge. They gradually increased in intensity, so that, prior to the operation, they came on before noon, and lasted till late at night, unless cut short by the hypodermic injection of morphia, a grain of which drug was required to deaden the pain.

When examined on admission, the os and cervix uteri were found to be perfectly healthy, the fundus could be easily felt through the abdominal walls, the patient being much emaciated, and a bi-manual examination showed that it was much enlarged and inclined forward; the sound however passed only to the depth of two and a half inches, its introduction caused much pain, but pressure on the cervix or on the fundus did not do so.

I felt considerable difficulty at arriving at a correct diagnosis in this case. The occurrence of a constant hæmorrhagic discharge in a woman of nearly sixty, and the great pain and emaciation which accompanied it, made me suspect the existence of malignant disease, but on the other hand that any form of cancer could have

existed for more than a year and a half without its having implicated the cervix or extended to the adjacent parts was doubtful. Then the paroxysmal nature of the pain, and the relief experienced on the expulsion of clots, seemed to indicate that there was something in the uterus which that organ was endeavouring to expel. I, therefore, thought it probable that there might be some intra-uterine growth which was the cause of her sufferings, and which might be removed, accordingly I dilated the cervix, but on passing my finger into the uterus I was disappointed to find that nothing like a tumour existed, the inner surface of the uterus felt rougher than usual, and the walls were thicker, but this was all. I accordingly contented myself with brushing over the whole interior of the uterus with fuming nitric acid. For a few days after this she seemed better, but soon relapsed into her former unsatisfactory condition.

I now became convinced that the patient was the subject of malignant disease of the body of the uterus which would terminate fatally, and accordingly suggested excision of the womb, pointing out that success was very doubtful. She at once replied that she wished the operation performed, for that death was preferable to the life of pain she led.

In this case I decided on performing a modification of Porro's operation and to remove the fundus of the uterus just above the insertion of the vagina, in preference to removing the entire organ, because I believed that the disease was confined to the fundus, and that the cervix being healthy the chance of the patient recovering would be increased by leaving it.

The patient being greatly emaciated, and the abdominal

walls were very tense and depressed; this condition added much to the difficulty of the operation. The incision extended from an inch above the umbilicus to close to the pubes. A small opening would not have allowed room for the necessary manipulation. No blood was lost during this part of the operation.

On the abdomen being opened I passed my left hand down into the pelvis, and grasped the fundus of the uterus, and having, with some little trouble, succeeded in seizing it with a strong vulsellum and, drawing it well up, proceeded to separate it from its pelvic attachment. For this purpose I first passed an aneurismal needle, armed with a strong hemp ligature, through the left broad ligament, as low down as possible, and tied it. I then grasped the ligament to the inside of the ligature with a pair of Spencer Wells' strong curved pressure forceps, and divided it. The same steps were taken in dividing the right broad ligament. The ovaries which were much atrophied were not removed. The uterus was now drawn up out of the pelvis, and transfixed on a level with the os internum with a strong needle armed with a hemp ligature. The ligature, which was double, was divided, and each half tied separately. The uterus was then cut through a little above the ligature. The divided surface of the cervix was now seared with the actual cautery and allowed to fall back into the pelvis, which was then carefully cleansed and the incision closed. The operation lasted an hour and a half. The patient did well for twenty-four hours, but then sank suddenly.

On laying open the uterus after the operation, its walls were found to be of unusual thickness, and the whole of its inner surface to be covered with a grey pultaceous

mass, which emitted a most fœtid smell. The disease proved to be epithelioma which had attacked the mucous membrane lining the uterine cavity.

The autopsy revealed the fact that a small portion of the malignant growth was left in the stump of the cervix. There was also evidence of a low form of septic peritonitis, which, in the reduced state in which the patient was, was probably the cause of death.

The consideration of this case raises several important questions. Of these the most obvious are, 1, Was the operation justifiable? and 2, Was the one performed the best under all the existing circumstances?

The first involves the question of diagnosis. In this case, until the operation was completed, I was not absolutely certain that the patient was the subject of malignant disease. Epithelioma rarely attacks the fundus of the uterus as a primary disease. As a rule it commences in the cervix and extends outward as well as inwards, and the case just recorded was the first of the kind I had met with in my own practice. For a considerable time I suspected that the patient was suffering from malignant disease of the fundus, but the extreme rarity of the instances in which this occurs, the cervix being healthy, the peculiar intermittent character of the pain, and the length of time which had elapsed since the first symptoms manifested themselves, made me hesitate for a long time to recommend an operation of such magnitude as the removal of the whole or part of the uterus, but being at length convinced that my opinion was correct, and that the neighbouring structures were not implicated, I believed it to be my duty to suggest an operation, which, though involving great risk, offered the sole chance of

saving life, while its failure could at most shorten by a brief space a miserable existence. I think that in this case the operation was justifiable.

The second question is of even greater practical importance. Freund's operation was originally practised in cases of cancer of the uterus, in which, though the cervix was implicated, the disease had not extended to the adjacent structures. Porro's, on the other hand, was brought forward as an alternative for the Cæsarean section in pregnant women, and not for cases of cancer attacking the fundus of the uterus. But after much consideration I decided on removing the fundus only, as being the least hazardous proceeding; for we know that in cases of uterine fibroids, in which the body of the uterus has been removed, the cervix being left, the results have been of late very good, while comparatively few have recovered after the whole organ has been extirpated, but I now believe that my decision was not a wise one, because a *post-mortem* examination showed that a portion, doubtless a very small one, of the cancerous growth was left behind in the stump of the cervix. Therefore, had the patient survived the operation, the disease would have recurred; in a similar case I shall perform Freund's operation.

This operation, however, is an infinitely more difficult one than ovariotomy.

I have stated that as a rule cancer attacks the cervix uteri, and in the very great majority of instances this is true; but to this rule there are exceptions, though they are rare. An example of it was brought under the notice of the Pathological Society by my colleague, Dr. James Little. Neither the rectum, bladder, vagina or cervix uteri were invaded by the disease, but the whole

of the body of the uterus seemed to have been converted into a mass of encephaloid cancer, and yet had a speculum been introduced in this case, the os would have been found small, and without any appearance of disease. While the case I have just narrated is an example of epithelioma attacking the inner surface of the body of the uterus.

When speaking of chronic inflammation of the cervix uteri, I mentioned that the induration which it produces has been mistaken for that which results from cancer. I think I shall best enable you to form a correct diagnosis between these two affections by arranging the symptoms of both in a tabular manner, so that you may the better be able to compare them.

In Chronic Inflammation of Cervix.	*In Cancer.*
The history of the case is always chronic, often dating back several years.	History—Symptoms seldom noticed till within a comparatively recent period.
Pain—always present, generally more severe over left ovary than elsewhere.	Pain—seldom felt in the early stages; most severe in the back.
Menstruation scanty and frequently painful.	Menstruation—If patient be young will be increased; if advanced in life, hæmorrhage may be the first symptom noticed.

In Chronic Inflammation of Cervix.	*In Cancer.*
Digital examination—Cervix feels hard to the touch, but smooth; pressure with the finger causes pain.	Digital examination—Cervix indurated, uneven and nodulated; pressure does not cause pain.
Uterus—Movable.	Uterus—Fixed.
Vagina—Not implicated.	Vagina frequently implicated.
Discharge — Inodorous and muco-purulent.	Discharge — Generally fœtid.

Having given an outline of the ordinary course which medullary cancer of the uterus follows, and dwelt on its leading features and symptoms, I must in conclusion say a few words as to treatment. Unfortunately we can seldom do more than alleviate the most prominent symptoms. With the view of deadening the pain, opium in some shape or form must still be our main reliance; chloral will often fail, if the sufferings be excessive, even to produce sleep. Opium is best administered either *per rectum*, in the form of suppositories, or by being injected subcutaneously, commencing with gr $\frac{1}{8}$ or $\frac{1}{4}$ of morphia. The subcutaneous injection of morphia acts more rapidly, and its effects last longer, than those of opium administered in any other manner, while it is, I think, less deleterious in its after consequences. Astringents administered with a view of checking the hæmorrhage are of little, if any, value. If the bleeding be very severe, you

may be compelled to plug the vagina; but I prefer, in these cases, endeavouring to stop it by the direct application to the cervix of a pledget of cotton saturated with a strong solution of the perchloride of iron in glycerine.

To lessen the fœtor of the discharge, you had better add half an ounce of the solution of the permanganite of potash to a pint of tepid water, and direct this quantity to be thrown up the vagina at least twice a day; or you may employ for the same purpose a weak solution of carbolic acid. For convenience you may order an ounce of carbolic acid to be dissolved in eight ounces of glycerine; a tablespoonful of this is to be added to half a pint of tepid water for injection into the vagina. Another lotion which is sometimes useful both in allaying the pain and lessening the discharge, is a solution of nitrate of silver of the strength of ten grains to the ounce—two or three ounces of this should be injected at a time. Of internal remedies, arsenic and iron are the only ones which will effect any good; indeed I confine myself nearly altogether to the administration of the latter, and of its various preparations I prefer either the tincture of the perchloride, or, if the stomach be irritable, the ammonia-citrate. The diet should of course be nourishing, but unstimulating. In cases of cauliflower excrescence there is always the chance, if the case is seen early, of your being able to prolong life by performing Dr. Marion Sims' operation which I have just described, or, possibly by extirpation of the entire uterus when that is justifiable; but no matter what treatment may be adopted, you should always let it be clearly understood that the result is very doubtful.

LECTURE XIV.

Ovarian Cystic Disease—Pathology—Unilocular, Multilocular, and Dermoid Varieties—Symptoms—Diagnosis.

As I have performed the operation of ovariotomy twice in our wards within a recent period, one of the patients being still in hospital, I do not think it likely that I shall have a better opportunity than the present of drawing your attention to the subject of ovarian disease. The affections to which these organs are liable were, till within the last few years, looked upon as almost incurable; but now, as you are all aware, the extirpation of one or both ovaries when in a state of disease, is performed with great frequency, and although patients doubtless occasionally die from the effects of the operation who might otherwise live for some years, still the number of women whom it has restored to perfect health is so great, that it steadily increases in professional favour.

The affection to which I shall first direct your attention is that known as cystic disease of the ovary, by which term is understood the development of a cyst, or sac, or of several cysts within the ovary, which are filled with a fluid or semi-fluid substance. The development of cysts in the ovary is of very frequent occurrence. They are met with of all sizes, from that of a pea, to that of a large sac capable of containing many gallons of fluid. Pathologists admit that the ovarian cyst may be in the

first instance the mere dilatation of a Graafian vesicle. This question having been virtually settled by Rokitansky's discovery of an ovule within one of these diseased cysts. As the cyst grows all trace of its origin is lost, and the sac thus formed, becoming distended with fluid, gives origin to the simplest form of ovarian dropsy, to which, from there being but one cyst present, the term "unilocular" is applied.* But very generally more than one cyst is developed, several of the Graafian vesicles becoming simultaneously affected. In the early stages we may have a cluster of small cysts, none of them perhaps larger than a currant; then, after a time, one or two of these seem to take on a condition of active life, and to become rapidly developed, swelling and increasing, till they attain a large size, while the others remain stationary or increase slowly. To this aggregation of the cysts, the term "multilocular" is applied; the multilocular tumour is much more frequently met with than the unilocular.

The contents of these cysts vary in as great a degree as do their appearance. The unilocular generally contain a light straw-coloured fluid, very like serum in chemical qualities. Sometimes, however, it is turbid and ropy, and occasionally contains pus, and apparently blood. In the multilocular, the contents of the cysts even in the same ovary vary much: in some they are similar to that just described; in others, they consist of a thick gelatinous-looking mass, which is sometimes black and tenacious. Again, the walls of contiguous cysts, containing fluids essentially different, may be absorbed under the influence of pressure, and the contents becoming com-

* According to Mr. Lawson Tait unilocular tumours are not of true ovarian, but of parovarian origin.

mingled, we have then a fluid, partly thick and tenacious, and partly aqueous.

But in addition to this growth by the amalgamation of contiguous cysts, there is yet another and very important process by which cysts may increase, that is, by the development within the parent cyst, of numerous other cysts. These, according to Dr. Hodgkin, whose observations have been confirmed by Sir J. Paget, may be either sessile or pedunculated, and may cluster in warty-looking masses on the inner surface of the sac. Thus by the growth of the older cyst, and the rapid formation of the new, the ovarian tumour sometimes enlarges with an alarming rapidity, and then the disease generally proves fatal in a very brief space of time. But ovarian tumours are seldom made up of these fluid-containing cysts alone. We frequently also find a considerable amount of so-called solid matter present; this solid matter is produced at the same time as the cyst; sometimes it is small in quantity, sometimes in bulk it exceeds that of the fluid contained in the cyst, and it may form a tumour of enormous magnitude.

These partly cystic, partly solid tumours, to which the term "compound" is usually attached, are probably the most common form of ovarian disease. Solid matter exists in them under various forms. One, which has been described by Mr. Spencer Wells as being identical in structure with the adenoid growths found in connection with the mammary gland, has been called by him *Adenoma* of the ovary. Another remarkable one was long looked upon as malignant, a view now proved to be erroneous; it is termed *Alveolar*, and is likened by Dr. Farre to a sponge, the cells of which are filled with a

jelly-like substance. Other varieties of solid material are also met with in these cases of compound ovarian tumours; but it would be impossible for me to enter with any degree of minuteness into pathological details, for I desire in these lectures to confine myself as strictly as possible to the clinical aspect of the diseases of which I treat, and therefore must refer you to the writings of Paget and Farre, or to the admirable systematic works of Spencer Wells, Graily Hewitt, Barnes, and others, for further information on the points which I feel compelled to omit.

There is, however, one other variety of ovarian cyst, which I must notice briefly; namely, that which contains hair, plates of bone, or fat, and in which even rudimentary teeth have been found, with or without any fluid being present. These tumours seldom attain any large size, and may remain indolent for years; on the other hand, they sometimes inflame, suppurate, and finally may cause death. These *dermoid* cysts, as they are termed, are a puzzle to pathologists; the fact that they sometimes are found in very young children negatives the idea of their being the product of conception. Mr. Spencer Wells adopts the doctrine of Virchow, that the "continuous development of tissues out of one another suffices to account for the growth of all ordinary dermoid tumours." In truth, however, this matter is as yet a complete mystery.

Having thus given you a brief outline of the pathology of some of the forms of ovarian tumours, I shall next call your attention to the consideration of what is of even greater importance to the practical physician, namely, their symptoms and diagnosis; the latter a matter often

of the greatest difficulty, an error in which may entail the most serious consequences, jeopardising and even sacrificing life itself.

First, I shall give you the particulars of the two cases recently under treatment here:—

One patient, Margaret M'D., was unmarried, aged thirty. She stated that her health had been always good till about ten weeks previous to her admission, when, on recovering from a sharp feverish attack, the result of cold, she perceived that her clothes had become too tight for her, that since then she increased rapidly in size—so much so as to have caused her to become the object of unjust suspicion; indeed, she subsequently stated that it was in consequence of the annoyance she experienced from it being reported that she was pregnant that she sought medical aid, coming for this purpose from a remote country district. Her general health was good; she complained only of thirst and of a frequent desire to micturate; her appetite was fair, menstruation normal, nutrition good.

She measured, on admission, 39 inches round the abdomen, at the umbilicus; fluctuation was distinct all over the abdomen, which was dull on percussion anteriorly from the pubes to about an inch above the umbilicus, but resonant in both flanks; the uterus was normal in size, shape, and position; the vagina was narrow and the hymen perfect. She was low-spirited and desponding, and while absolutely refusing to consent to an operation, urged that something should be done for her. Therefore, with the view of gratifying this wish, I tapped her on the 6th April, and drew off 256 ozs. of a dark and somewhat gelatinous fluid. After the tapping,

the circumference of the abdomen was reduced to 29 inches. She subsequently suffered no inconvenience, and after a short stay in hospital was discharged. She returned again on the 8th June, when the circumference of the abdomen was 35 inches. From that date it continued steadily to increase till the 12th August, when she expressed her willingness to undergo any operation which would promise relief from her intolerable condition. Before the operation the diagnosis of an unilocular ovarian cyst, with but little solid matter, was made.

On the morning of the operation she had, at 8 a.m., a light breakfast, consisting of a cup of tea and a little dry toast. The bowels were freed by means of an enema, and at 10 a.m. she was placed on the table, clothed in a flannel jacket, drawers, &c. Æther was the anæsthetic selected. She vomited three times during the progress of the operation, and several times subsequently. An incision, not quite five inches in length, was made in the median line; the cyst was without difficulty exposed. Spencer Wells' trocar was then plunged into it, and the contents evacuated without one drop of fluid escaping into the abdomen; the cyst was drawn out, some little difficulty being experienced in extracting the solid portion, which was of about the size of a man's fist; the pedicle was secured by means of Spencer Wells' clamp, and after being divided was seared with the actual cautery; the edges of the incision were then brought together with carbolized catgut sutures, and the abdomen supported in the usual manner, with broad strips of adhesive plaster and a flannel roller. The patient was then put to bed, no anodyne nor any stimulant being given. The operation occupied, from the commencement of the incision till the wound was closed, in all about 25 minutes. At 11 a.m.

the pulse was 88. She remained in a state of semi-unconsciousness till noon, when she woke up and spoke. Pulse 80. She vomited soon after. To have small pieces of ice at short intervals, and nothing else. 3 p.m. —Catheter passed; stomach sick; has dozed a good deal; to have nothing but ice. 11 p.m.—No sickness for some hours; to have a tablespoonful of soda water and milk, iced, every fifteen minutes, if not asleep, and ice *ad lib.* She recovered rapidly.

The second case was that of Mrs. M., aged twenty-eight, married two years; she had given birth to a child just twelve months previous to admission. Her labour had been easy, and convalescence good. She stated that she had been attended by a midwife, who remarked, after delivery, that the abdomen was larger than it ought to be, she did not mind this at the time, but a few weeks subsequently observed that the whole abdomen was uniformly enlarged. A day or two after this she was attacked with pain in the right inguinal region. This subsided in four or five days, but ever after she suffered a good deal of pain at each menstrual period. These attacks of pain, however, did not confine her to bed.

From this time she steadily increased in size, and lost flesh; but were it not for the weight and inconvenience which her size caused, would not have sought medical aid.

On admission, though very thin, she was not emaciated; her health was apparently good, and complexion clear; she was very cheerful, and, without hesitation, at once expressed her readiness to undergo the operation of ovariotomy—the nature and risk of which was clearly explained to her and her husband.

The circumference of the abdomen was, at this time,

thirty-four inches at the umbilicus. The abdominal walls being very thin fluctuation was everywhere distinctly perceptible. There was dulness on percussion over the front of the abdomen to within three inches of the ensiform cartilage; both flanks being resonant. The diagnosis of an unilocular ovarian cyst was made.

The operation was performed at 10 a.m., the bowels having being freed by means of an aperient taken at night, and an enema administered in the morning. A light breakfast of tea and dry toast was given at 6 a.m., and a little beef tea at 8 o'clock.

The incision, as in the former case, was commenced about an inch below the umbilicus, and was in the first instance about 3½ inches in length. The abdominal wall was so very thin that after the skin had been divided the greatest care had to be exercised. The need of this was soon manifested, for after the dissection had proceeded to but a limited depth, so thin and attenuated was the abdominal wall, and so intimately adherent and matted together were the subjacent structures, that it was impossible to say with certainty whether the peritoneum was laid open or not; layer after layer of thin tissue was carefully divided on a broad director, inserted with much difficulty under each layer, till at last I ascertained that I was thus dissecting the actual walls of the cyst itself, the whole anterior surface of which was intimately and inseparably attached to the abdominal wall.

Failing to separate the cyst from its attachment to the abdominal wall below the umbilicus, I enlarged the incision upwards to within an inch of the ensiform cartilage, hoping thus to reach the free edge of the cyst, but in vain. All attempts to separate the adhesions were fruit-

less, so dense and intimate were they, and at this juncture, in an effort to break them down forcibly, the cyst ruptured, and the contents were rapidly evacuated through the rent, much of the fluid escaping into the abdominal cavity. I now enlarged the opening into the cyst, and inserting my hand into it, reached the bottom, and grasping the wall at its lowest point, succeeded in inverting the sac, drawing it through the opening I had made, and finally, with considerable difficulty, in breaking down from behind the dense adhesions which had before baffled me, and removed the entire cyst. The pedicle was now ligatured, and, after being divided, seared with the actual cautery.

During the tedious and difficult processes described, very little blood was lost; a large quantity of the contents of the cyst had, however, escaped into the cavity of the abdomen; in fact, the pelvis was nearly full of it, and it was necessary to remove all this by sponging. This occupied a long time, but was thoroughly accomplished. The wound was then closed, as in the previous case, by means of catgut ligatures. The operation lasted one hour and twenty minutes. The patient vomited three times during the operation, and twice afterwards; and notwithstanding the difficulties encountered she recovered without a bad symptom.

Although these two cases had the same favourable termination, they presented features very markedly different. In the first the tumour was not only of the simplest kind, but was free from adhesions, and was removed without the escape of one drop of fluid into the abdomen. In the second case the dense adhesions which existed anteriorly rendered the removal of the cyst by the

ordinary method impossible, and it was only by inverting the sac, and breaking the adhesions down from behind, that this was finally accomplished. In consequence of the rupture of the cyst the pelvis was filled with the fluid it had contained, and all this had to be removed by sponging, a process which occupied a long time; but notwithstanding these adverse circumstances, the patient made an excellent and rapid recovery.

These patients were for a day or two previous to the operation restricted to a light unstimulating diet, consisting of beef tea, milk, bread, &c. No solid food, such as meat or vegetables, was allowed. This, with the administration of at least two doses of castor oil previously, is the only special preparation I adopt; but subsequent to the operation I put them on very strict regimen, ice alone being allowed for the first few hours. Indeed after ovariotomy, patients are better without food till flatus passes freely. At first I allow nothing except ice, beef tea, or milk and soda water in small quantities, about half an ounce every hour, then a little thin gruel; no solid food for at least four or five days. If feeble, and inclined to vomit, I allow a little weak brandy and water, but only a teaspoonful or so at a time. I object to stimulants if they can be avoided, but sometimes a large quantity is needed. To the strict regimen I adopt I believe much of my favourable results are due. Should vomiting occur, nothing will be found to restrain it so effectually, as the hypodermic injection of $\frac{1}{3}$ or $\frac{1}{2}$ a grain of morphia, and if it be persistent, the attempt to administer any kind of nutriment by the mouth had best be for a time abandoned, and the patient sustained by enemata of beef tea and brandy. In one of my cases in which, after the administration of æther, vomiting was incessant, the patient

was not allowed to take anything by the mouth for five days, two ounces of beef tea and half an ounce of brandy being, during that time, injected into the rectum every two or three hours; this patient eventually recovered. In her case half a grain of morphia was administered hypodermically every twelve hours, all this time. The clamp was used to secure the pedicle in my first cases, but I now always secure it with a silk or hemp ligature, and throw it into the abdomen. Mr. Keith frequently divides the pedicle by means of the actual cautery, but no method should be invariably followed, and indeed if every antiseptic precaution be taken, as should always be the case, I do not think it matters materially which plan of securing the pedicle is adopted. The greatest care should also be taken to insure the best possible sanitary conditions, and no person should be allowed to enter the ward, subsequent to the operation, except the nurses who have charge of the case, and who should give their whole time for the first few days to the patient.

Æther was the anæsthetic I formerly used, but I have given it up, and now always employ chloroform, administering it by means of Junker's Inhaler. My reasons for abandoning the use of æther were, that on several occasions the most violent and persistent vomiting followed its administrations, and that in two cases, it caused such irritation of the bronchial mucous membrane, that the patients' lives were endangered, and recovery seriously retarded. Since I commenced using Junker's Inhaler, now five years ago, vomiting either during or subsequent to the operation is almost unknown in my cases. I believe chloroform, so administered, to be superior to any other known anæsthetic.

The general symptoms which usher in ovarian disease,

as you see from details of the foregoing cases, are very vague and uncertain. The patient may, and indeed probably does, complain of a considerable amount of pain, or at least of discomfort in the ovarian region, before being conscious of any actual ailment; sometimes, the first thing that attracts her attention is the discovery of a tumour, or at least a fulness, generally in one side of the abdomen, which gradually increases. But sometimes, even when it has reached a considerable size, the patient does not pay any attention to her state, or seek medical aid till the disease is far advanced. In one case, on whom I recently operated successfully, the patient, an unmarried lady, consulted a physician for dyspepsia, &c., and, till informed by him that she was the subject of ovarian disease, had no idea that there was anything seriously wrong with her. Another lady, on whom I also successfully operated, was for a long time treated for dysmenorrhœa, and was advised to submit to division of the cervix for its cure, the uterus all the time being perfectly healthy, but displaced by the pressure of a small ovarian tumour, which was bound down in the left inguinal region by dense adhesions, the result of repeated attacks of peritonitis.

In addition to the symptoms enumerated, there are often various others present referable to pressure on the neighbouring viscera, such as irritation of the bladder, or interference with defecation; but these are always vague, and valueless for the purpose of diagnosis. More definite and more important are the paroxysmal attacks of pain from which the patient not unfrequently suffers. These may be due to the tension of some of the folds of the peritoneum, but they are far more frequently caused by transitory attacks of local peritonitis, and, as a result, we

often find intimate adhesions formed with the surrounding structures, especially with the omentum. Such adhesions add greatly to the difficulty, as well as to the risk, of operations undertaken for the extirpation of these tumours. In the vast majority of cases, however, the disease has advanced to a stage, in which a well defined tumour, with generally distinct fluctuation, exists in the abdomen, before we are called on to give a diagnosis as to the nature of the disease from which the patient suffers. This was so in both the cases recently in this hospital.

When this stage has been reached the general health nearly invariably suffers to a greater or less degree. In the patient on whose case I am specially commenting, it was merely to the extent of loss of flesh, while in others there is great emaciation accompanied by dyspnœa, the result of the size of the tumour; there is also loss of appetite, and a long train of secondary symptoms. Menstruation may continue to be normally performed; this was so in the patient whose case we are considering, but in many it becomes irregular as the disease progresses, or is altogether suppressed. When the latter occurs, the patient, if she be married, naturally attributes the increased size of the abdomen to pregnancy, and even in unmarried women, as happened in the well-known case of a lady of rank, the unjust suspicion of pregnancy, and its attendant disgrace, has been attached to the sufferer: an injustice which the exercise of but a moderate amount of skill should have prevented.

The leading features of a case of ovarian cystic disease then, are these: we have a tumour of variable size, the gradual growth of which has generally been traced by the patient. The surface, in the case of the unilocular

tumour, is smooth and even, while in the multilocular, the separate cysts may impart a lobulated, irregular feel to the hand passed over the abdomen. Fluctuation is generally distinct in the former, and can be felt everywhere over the surface. In the latter, this is only the case here and there, or it may be detected in but one situation, while we also nearly invariably make out at some point, a firm hard mass, indicative of the existence of solid matter. The whole of the anterior surface of the abdomen is, in the case of either form of ovarian disease, dull on percussion, the intestines being forced back behind the tumour, the flanks being resonant. A vaginal examination, which should be made in all cases, will prove whether the uterus is of its natural size and shape; frequently, however, that organ is displaced, sometimes being drawn upwards and pushed forwards; or, on the other hand, bent backwards by the pressure of the tumour.

The conditions or affections with which cystic disease of the ovary may be confounded are numerous. A pregnant uterus, ascites, especially if encysted, as is sometimes the case, tumours of the omentum, cancerous tumours in various situations, and extra-uterine fœtation, have been mistaken for ovarian disease; but errors of diagnosis are specially liable to occur in cases of fibro-cystic disease of the uterus. Of twenty-three cases recorded by Mr. Clay, in which ovariotomy had been attempted, but in which the operation was abandoned in consequence of the disease proving not to be ovarian, twelve were uterine; in two, no trace of a tumour whatever could be found.

While the enlargement of the abdomen from the pre-

sence of an ovarian tumour, when menstruation is absent, may easily give rise to the idea of pregnancy, it seems hardly possible that an impregnated uterus could be mistaken for an ovarian tumour; yet this mistake has been made, and, in order to guard against the recurrence of a similar error, you should invariably seek for the usual signs and symptoms of pregnancy, some, or all of which, will be sure to be present in a more or less marked degree. A careful vaginal examination will prove the uterus itself, and not the ovary, to be the seat of the enlargement. This is one of those cases in which the practice of ballottement may possibly be useful; you must, however, always bear in mind, that pregnancy is not incompatible with the existence of disease of at least one ovary, and an ovarian tumour of small size may seriously obstruct labour. This occurred recently in a case under my care.

The diagnosis between ascites and ovarian dropsy, is not in general difficult. It is with the simple unilocular form that the question is most likely to arise. The history of the case often aids us materially in forming our opinion, for the patient is frequently able to tell you that the swelling commenced by the gradual enlargement of a small tumour, which, first felt in one or other iliac region, continued to increase till it extended across the abdomen, a history which would be incompatible with the idea of ascites. In ovarian dropsy also, there is almost invariably dulness on percussion over the whole front of the abdomen, the very reverse of this occurs in ascites, for in that disease the intestines almost invariably float, and are consequently in contact with the anterior abdominal wall, therefore percussion yields a resonant sound. Fluctua-

tion, too, in ascites is most clearly felt laterally, in the lumbar regions, that being the point at which it is likely to be wanting in a case of ovarian dropsy.

I cannot, however, go further into these details, much less would it be possible, even if it were desirable, for me to enter on the consideration of the differential diagnosis between ovarian cystic disease and that of all the other affections with which it may possibly be confounded, and I must content myself with having laid before you the distinctive features of the former. Your other clinical teachers will explain to you those of the others, and you must weigh for yourself the relative value to be assigned to each symptom, when called upon to decide as to the nature of the affection from which the patient suffers. But it is essential before passing from the subject of diagnosis that I should point out to you the principal distinctive features which exist between ovarian disease and fibro-cystic degeneration of the uterus; first, because both diseases are strictly within the limits assigned to the gynæcologist; and secondly, because the latter is that which is specially liable to be mistaken for the former, and indeed so closely simulates it, as sometimes to mislead the most careful observer.

I have in a previous lecture given you an outline of the leading features of fibro-cystic disease of the uterus, and I think I shall best aid you now, by throwing these into contrast with those of ovarian disease, so as to present them to you in a tabular view; premising, however, that there is not one of the symptoms enumerated which is not liable to great variation, and that therefore, the most extreme caution must be exercised in forming an opinion based on them. I should also add, that I am now speak-

ing only with reference to tumours of considerable size, and which extend entirely, or very nearly, across the whole abdomen.

Ovarian Cystic Disease.	*Uterine Fibro-Cystic Disease.*
May occur at any age, but probably more frequent before the age of thirty-six than after it. Of 281 cases recorded by Mr. Clay, and of which the ages were known, 168 were under thirty-six, 68 of these were aged between seventeen and twenty-five years.	Rarely met with in early life; of twenty-three cases recorded by Mr. Clay, in which the operation was abandoned in consequence of the disease being extra ovarian, thirty-four was the age of the youngest patient.
Previous history often throws light on the diagnosis, a tumour being frequently felt at first in one or other iliac region, which gradually extended across the abdomen.	Such a history unlikely to occur, growth usually more central.
Growth of tumour, comparatively rapid.	Growth, comparatively slow.
Menstruation frequently normal, but sometimes irregular, and, as the disease progresses, is liable to be suppressed; profuse menstruation of rare occurrence.	Menstruation profuse, if tumour be intra-mural or sub-mucous, generally normal if sub-peritoneal.

Ovarian Cystic Disease.	*Uterine Fibro-Cystic Disease.*
Uterus of its normal size, sometimes drawn upwards so as to be difficult to reach, and is freely moveable unless bound down by adhesions.	Depth of uterus increased. Sound often passing for a considerable distance into its cavity.
Tumour becomes softer as it increases in size.	Time not likely to alter consistence of tumour.
Urine voided without difficulty.	Difficulty in passing water occasionally experienced from pressure on bladder and urethra.
General health always suffers more or less, sometimes to a great degree.	General health does not suffer, unless menorrhagia be present.

If care be taken to weigh each of the distinctive features here enumerated, the risk of making a serious error in diagnosis will be greatly lessened. Above all, let me impress on you the necessity of using the uterine sound. It affords us the most important aid in forming our diagnosis. In the great majority of cases of large fibroids, whether solid or fibro-cystic, the uterus is either embedded in, or so firmly attached to the tumour, that it cannot be moved independently of it; a point which can generally be ascertained, by inserting the finger into the rectum and keeping it there, while the sound previously passed into the uterus is rotated gently. And again, the

sound should be held steadily, while an assistant endeavours, with both hands, to rotate the tumour itself, when if the tumour be uterine, the sound will be seen to rotate with it. These are methods of manipulation which often enable us to decide whether the uterus is attached to the tumour or not.

Still, even here error is possible; for, if a fibrous tumour spring from the uterus by a moderately long pedicle, or even by one as short as that shown in Fig. 23, p. 142, we may be able to move the uterus to such as extent as to lead to the conclusion that it is free; and on the other hand it is possible, that in a case of ovarian disease, the uterus might be so bound down by adhesions as to be immovable.

Some idea of the difficulty of diagnosing between fibrous tumours of the uterus when in a state of cystic degeneration, and ovarian cystic disease, may be gathered from the following case, recorded Volume XII. of the *Transactions of the London Obstetrical Society*. The woman was aged thirty-six. An abdominal tumour had been discovered five years previously, which, during the last six months, had increased rapidly. On admission into Hospital, a large tumour was felt, which evidently contained no cyst large enough to warrant tapping, but which did not feel so hard as a fibrous tumour of the uterus; no vascular murmur was audible, and it appeared to move quite independently of a uterus of normal size. When the tumour was exposed, it proved not to be ovarian; it sprang from the upper part of the posterior surface of the fundus uteri by a short pedicle. The tumour was removed, and was found to weigh thirty-four ounces, and was seventeen inches in diameter. The

patient subsequently died. The fact of the tumour growing almost from the very fundus of the uterus doubtless permitted that organ to have a greater amount of mobility than is usually met with in such cases, and when I add that the operator was Mr. Spencer Wells, you will agree with me that no means were omitted by that disguished surgeon for arriving at a correct opinion as to the nature of the tumour.

LECTURE XV.

Ovarian Disease (continued)—Effect of on Duration of Life—Statistics of Ovariotomy—Tapping of Cyst—Injection of Cyst—Congestion and Inflammation of Ovary.

We shall now assume that after having carefully weighed all the symptoms, you have made up your mind that the case you have been called to see is one of ovarian disease; it still, however, remains for you to consider what its probable course will be, for on this point depends your future treatment. The most reliable data from which we can form an estimate as to the probable duration of life in the cases of cystic disease of the ovary, are those supplied from the tables of Mr. Stafford Lee. Of 123 cases tabulated by him, nearly a third died within a year, and rather more than one-half within two years from the date at which the first reliable symptoms of the disease were noticed, a duration hardly longer than that of cancer, while but seventeen lived for nine years or upwards; of these seventeen, one survived for fifty years. From these tables we may fairly assume that the duration of life in cases of the disease under consideration is unlikely, on an average, to exceed three or four years. As a rule, you may consider that the chance of life being prolonged is in an inverse ratio to the rapidity of the growth of the tumour; for, if this be rapid, the patient will speedily be

worn out and die exhausted, no less from the effects of the disease, than by the distress caused by the size of the tumour itself, even should no intercurrent attack carry her off after a brief illness.

The simple unilocular form seldom becomes dangerous to life till the tumour, by its great size, interferes with respiration, and by its pressure impedes the abdominal viscera in the due performance of their functions. When this stage is reached, if, with the view of relieving the patient's sufferings, we have recourse to tapping, we may actually accelerate the fatal termination of the case, the drain on the system caused by the refilling of the sac, increasing the previously existing exhaustion. The rupture of a cyst is another possible cause of death, but it certainly is not of very frequent occurrence.

In all cases of ovarian disease there is a great proneness to inflammation of the abdominal, and even of the thoracic viscera, and an attack which would in others be of no importance, becomes, when occurring in the patient suffering from ovarian dropsy, a very serious matter, and therefore not a few die of diseases not directly connected with the original malady, but which is not on that account the less chargeable with the result.

The certain and speedy death, which in the great majority of cases awaits the sufferer from ovarian disease, has decided surgeons to attempt its cure by the extirpation of the diseased organ; the question, then, which in each case has to be decided is, will the patient, if left alone, have a fair chance of being one of the fortunate twelve who, out of every 100, may be expected to live for ten years or upward, or one of the eighty-eight who, if not operated on, must in a short time be consigned to

their graves? In deciding on this momentous question, we should never for one moment lose sight of the fact, that there are but two possible terminations to operations for the extirpation of ovarian tumours, the one being perfect recovery, the other speedy death.

The most important element in the calculation undoubtedly is, the rapidity with which the tumour is increasing in size; for if this be rapid, the case must soon terminate fatally. Thus, in one of the cases I am alluding to, the circumference of the abdomen increased four and a-half inches in one month. This patient, we may say with almost positive certainty, would have died under any circumstances in a very brief period, and therefore the operation was called for; but if the tumour be small and the increase be very slow, we should hesitate before sanctioning it. Again, the state of the patient's health will materially influence your judgment; if it be fairly good, and that she seems to suffer only from the ordinary effects caused by the presence of a large tumour in the abdomen, she will be in the most favourable state for the operation. Of course if the patient be labouring under any other form of organic disease likely to terminate fatally in a short time, ovariotomy is hardly justifiable; it would, however, be impossible to lay down an exact rule on this point.

The presence of firm and extensive adhesions between the tumour and intestines or other abdominal viscera greatly increase the risk of the operation; but the diagnosis of adhesions is very difficult, in some cases impossible, to make. By grasping the integuments over the most prominent parts of the tumour and raising them up, and by endeavouring by careful manipulation

to make them glide over its surface, a fair estimate may be formed as to whether they exist anteriorly or not; but we have no means of ascertaining what may be the condition of the tumour posteriorly, and are therefore to a great degree necessarily in ignorance on this point. The repeated occurrence of attacks of sharp pain are, however, of importance; if the patient has not suffered much from these, extensive adhesions are not likely to be met with; but if paroxysms of pain have been frequently experienced, we may with confidence anticipate that they have formed.

The simpler the tumour the greater chance there exists of a favourable termination, and the larger amount of solid material the less hopeful is the case. You may take it as a general rule, that the further the tumour departs from the true cystic type, the more unfavourable the prognosis becomes. I am always unwilling to sanction the operation of ovariotomy where the tumour is evidently nearly solid.

When ovariotomy was first practised, the mortality following it was great; thus, in the tables of results appended to the edition of Kiwisch's work *On Diseases of the Ovaries*, translated by Mr. Clay, of Birmingham, himself a successful operator, the results of 537 cases are recorded, 212 as successful, and 183 as terminating fatally, which may be considered as implying that fifty-three *per cent.* recovered, and forty-seven *per cent.* died; but in the large number of 142 cases the operation had to be abandoned, either from the adhesions being too intimate to permit of the tumour being removed, from the disease being discovered to be extra-ovarian, or from partial excision only having been effected. Of these,

fifty-five died, and this number must, in order to make the estimate as nearly as possible accurate, be added to the 183 fatal cases already mentioned. We are then to deduct from the 537 recorded cases, eighty-seven in which the operation was commenced but not carried out, but who nevertheless survived; this leaves 450 to be accounted for; of these, 212 were perfectly successful, and 238 terminated fatally; showing that nearly fifty-five *per cent.* of the cases operated upon resulted unfavourably.

But these statistics do not represent the results of the operation at the present time, for the mortality has steadily decreased during the period which has elapsed since these tables were published. Errors in diagnosis are now comparatively few, cases unsuitable for operation are rejected, while it is rare to hear of the operation having to be abandoned. Still, making every allowance for improved diagnosis, and for greater care in the selection of cases, I do not think we can hope to raise the percentage of recoveries permanently above sixty-five or seventy *per cent.* I am aware that a higher estimate than this of the success of the operation is made by others. Thus, Dr. Graily Hewitt states that the recoveries are now from sixty-five to seventy-five *per cent.*; perhaps this may be true if errors in diagnosis be omitted, but this I consider it would be wrong to do. The results of Mr. Spencer Wells' tenth series of one hundred cases of ovariotomy are remarkable. Of 100 cases in which the operation was completed, eighty-nine recovered, only eleven died, but these were exclusively private patients. He shows that the mortality after ovariotomy is in his practice steadily diminishing; of

his first 100 cases, thirty-four died; of his second 100, twenty-eight died; of his third 100, twenty-three died; of his fourth 100, twenty-two died; and of his ninth 100, seventeen. In his private practice he has of late lost but eleven *per cent.* The results attained by Mr. Keith, of Edinburgh, are even more remarkable. The number of his completed cases is 400, of which he lost 19 in the first 100 (including all deaths from incomplete operations or exploratory incisions), 14 in the second, and but 4 in the third. It is of importance to bear in mind that the great decrease in his mortality first occurred before he adopted Lister's antiseptic method. After adopting it he had 68 consecutive cases in which the spray was used without a death occurring. Mr. Keith has now renounced the use of the spray, being of opinion that in several cases poisoning from the absorption of the carbolic acid occurred, and his results continue to be excellent. He has treated in all 120 cases (including the removal of fibroids) antiseptically; of these 8 died; while of the last 50 treated without the carbolic spray only 1 died. However, in my own practice I carry out all the antiseptic precautions, excepting this, that I do not allow the spray to play directly on the abdomen, my chief objection to its doing so being the cold it produces.

The results obtained by Mr. Spencer Wells and Mr. Keith are, indeed, as it was termed by Dr. West, "a splendid success." Still I fear that the average of all the operations undertaken in Great Britain will continue to show a higher mortality. I am far from wishing to discourage the operation, and am strongly of opinion that if great discrimination in selection be used, if the operation be performed earlier, and in patients free from

symptoms of other diseases, that the results will be exceedingly favourable; nor should the fact be overlooked, that even if only sixty-five per cent. of our operations prove successful, we restore to health more than fifty women out of each 100 cases, who would have died in about three years, and this, after allowing for the full proportion who, if not treated at all, would have lived for a comparatively long period.

I have hitherto spoken only of excision of the diseased ovary, an operation which though long known, has only been extensively practised within the last few years; but tapping the cyst has been frequently performed, both as a palliative measure and also as the first step towards a radical cure, occasionally too in doubtful cases, with the view of arriving at a correct diagnosis. With the former object it is practised whenever the distention of the abdomen is so great as to interfere with respiration. Under such circumstances it may be justifiable, but it is productive of but very temporary relief, and often only aggravates the patient's condition, for if the cyst fills rapidly again, as it generally does, the secretion of such a large quantity of fluid further weakens the already debilitated patient, and moreover tapping is sometimes followed by the rapid growth of other cysts, which seem to have lain quiescent previously, their development having been apparently retarded by the pressure exercised on them by the fluid. Moreover it is an operation not free from danger, for inflammation may supervene and terminate fatally; bleeding, too, of an alarming character has been known to occur, occasioned by the trocar wounding a large vessel. This may take place either into the cyst or into the abdominal cavity; but

even where no accident occurs, alarming prostration and vomiting have followed on the evacuation of the cyst, and in not a few cases fatal peritonitis has ensued. According to Kiwisch, of 130 cases of tapping, twenty-two died within a few hours or days, twenty-five more died within six months, and he concludes by stating his conviction, that all these 130 patients had their lives shortened by the operation; and without doubt, tapping lessens the chance of a successful result, should ovariotomy have subsequently to be performed.

There have been cases no doubt recorded, in which after tapping, the cyst has shrivelled up and a permanent cure resulted, but they have been of such very rare occurrence as to hold out little inducement to us to follow the practice. Indeed, I advise you not to perform the operation of tapping if it can be avoided.

Dr. West advises that the operation of ovariotomy should not be performed till the cyst has been tapped. I cannot, however, concur with him on this point, but I admit that when the cyst is emptied and during the process of refilling, its relations to the surrounding parts can be more readily made out, and also that the presence or absence of adhesions may perhaps be ascertained. Tapping also informs us whether the contents of the cyst be viscid or aqueous, whether the tumour be unilocular or multilocular, and may perhaps enable us to decide what amount of solid matter is present. In obscure cases, therefore, it sometimes is advisable to tap for the purpose of aiding us in forming our diagnosis.

When for any reason you decide on tapping an ovarian cyst, the operation should be performed with great care; an ordinary trocar is a dangerous instrument, and that

suggested by Mr. Spencer Wells certainly not absolutely safe. Mr. Keith uses as small a needle as he can get the fluid off with. He always employs an aspirator, having the openings the size of a No. 7 or 8 catheter, so that he can use any trocar up to that size which he likes; but a small trocar, having a bore of about a No. 3 catheter, is that which he prefers; he has the cylinder of the aspirator made very large, so that there is not much time taken up in emptying the cyst.

Tapping was formerly performed with a view to a radical cure, preliminary to injecting the cyst with some stimulating fluid—iodine being that usually preferred: the chief objection to the practice is, that it is only suitable to cases in which the cyst is single, for if the tumour be multilocular no benefit is likely to follow. The results are under any circumstances very uncertain, sometimes none whatever have followed, while in others the effects were most marked—prostration, vomiting, and inflammatory symptoms—occasionally resulting in a cure of the disease, but sometimes terminating in death. The operation, from its uncertain and sometimes fatal results, is now given up. I have not had any personal experience of it.

You must have inferred from what I have said that medical treatment is useless in cases of ovarian dropsy, excepting so far as the judicious administration of tonics is concerned, and I trust none of you will ever be guilty of the folly, to use no harsher expression, of salivating or blistering any patient you may meet with who is suffering from this disease.

I have hitherto spoken only of cystic disease of the ovaries, because it is by far the most important form of disease to which these organs are liable; but solid

tumours of the ovary are also occasionally met with. Cancer too may attack these glands. I need hardly add that when this occurs the case is beyond the reach of treatment.

In addition to the affections already alluded to, the ovary may be attacked by inflammation. Acute ovaritis is rare, but chronic inflammation, or at least congestion of the organ, is common enough. To this cause we may probably attribute the pain, which in so many cases is experienced over the seat of the left ovary, and which is so invariably present in women suffering from many forms of uterine disease. This pain, which is aggravated at each menstrual period, generally shoots down along the inside of the thigh; in severe cases nausea is sometimes complained of, and even vomiting may be present. The left ovary is the one by far the most frequently engaged; why this should be so, I am quite unable to say, but it is a notable fact which probably you have all observed. Menstruation is occasionally affected, sometimes becoming scanty and attended with pain, but on the other hand I am satisfied that a condition of ovarian irritation short of actual inflammation, but in which there is probably a certain amount of congestion present, is a not infrequent cause of menorrhagia. If from the occurrence of the symptoms enumerated you come to the conclusion that inflammation or congestion of the ovary exists, you will best relieve that condition by the application of a few leeches over the seat of the pain, or at the verge of the anus, by the exhibition of mild cathartics, and of full doses of the bromides of ammonium or potassium, and subsequently by blistering. We had a good example of chronic inflammation of the ovary in a young woman recently in the medical ward, whose prominent symptom

was vomiting. I shall have to refer to her case again: at present I can only add that after the application of three or four leeches, the vomiting, which had been persistent for weeks, was temporarily checked.

You must not, however, suppose that every case of pain in the ovarian region is necessarily due to inflammation; in by far the majority of these cases it is merely sympathetic, and is kept up by the existence of some uterine ailment.

Subacute inflammation of the ovary is not likely directly to endanger life, but the constant pain which the patient suffers wears her out, and exposure to cold and many other causes, may at any time aggravate it, and cause serious symptoms to arise from the inflammation extending to the peritoneum. The affection should therefore never be looked upon as being of no importance.

In some cases the distress is so great, and the patient's sufferings so intense, that life actually becomes a burden, and consequently the removal of the organ has been recommended by Dr. Battey, of Georgia, U.S.A. He points out that the operation is not simply the removal of a diseased mass, but "the extirpation of an offending organ endowed with a peculiar and essential function, the performance of which having become morbid and destructive to health or endangering life, we seek to abrogate the function itself, and thus do away with its pernicious consequences," and further that though the ovaries, in cases in which oöphorectomy has been performed, are usually diseased, these diseases, were it not for the function of ovulation, would be of little importance; and that it should always "be borne in mind, that the object is not to do an ovariotomy or an oöphorectomy, but to establish

by art the change of life." There can be no doubt that, in some instances, the operation is justifiable.

The question then is, in what cases is the operation not only justifiable, but advisable? In reference to this, Dr. Battey points out, with much truth, that the surgeon should be satisfied not only as to the gravity of the case, but also, that it being incurable by any means short of "the change of life," it is curable by that being effected artificially, by the removal of the ovaries; and it is quite evident that to bring about "the change of life" both ovaries must be removed.

In addition to the removal of ovaries disorganized by the occurrence of chronic inflammation, oöphorectomy has been performed in cases in which one or both ovaries have prolapsed into Douglas' space, and great pain as a consequence experienced; in cases of severe ovarian menorrhagia, and specially for dysmenorrhœa, the result of partial or complete occlusion of the Fallopian tubes, consequent on attacks of pelvic cellulitis or peritonitis; also, in cases in which profuse hæmorrhage occurs, depending on the presence of uterine fibroids, and lastly in patients in whom incurable occlusion of the vagina has existed, and in whom the ovaries and uterus being healthy, the most dreadful sufferings have been experienced at each menstrual period. In these two last classes of cases, the operation should be performed, if not contra-indicated by some special cause, in the other classes, specially in those otherwise incurable cases of dysmenorrhœa, dependent on occlusion of the Fallopian tubes, it is often justifiable, the main objection to its performance being, in my opinion, the fact that as yet the diagnosis of disease of the Fallopian tubes is very uncertain. I believe, however, that this difficulty will ere long be removed.

The operation has been performed in two ways, namely, from the vagina, and by the abdominal section. The former, at one time practised in America, has been given up, at least in this country; the chief objection to it being the frequency with which adhesions are encountered, and which are much more easily dealt with by the abdominal section, consequently this latter method is now almost universally adopted. The steps of the operation are somewhat similar to those followed in ovariotomy, but it is a much more difficult one, for in ovariotomy the tumour is reached without difficulty and the abdominal walls having been stretched by the tumour, we have plenty of room, on its contents being evacuated, for our farther steps, whereas in oöphorectomy, we have to search for a small organ hidden by the intestines, and frequently bound down by dense adhesions. The hæmorrhage too is frequently very profuse; in fact it is one of the most difficult operations in surgery.

While thus expressing my opinion as to the justifiability of operation in certain cases, I feel bound to add that I believe it to have been already abused, by its having been extended to cases, in which the "mental and neurotic" element predominated. As the result of my own experience, I believe the number of cases in which it is justifiable is very few, and I protest against the frequency with which it has been performed by some surgeons.

In many cases of left-side pain depending on ovarian congestion, or irritation, I have found great benefit follow the inunction twice a day over the affected part, of an ointment composed of equal parts of the veratria and of the iodide of potassium ointments, to which, in some cases, I add a smaller proportion of the unguentum cantharidis.

LECTURE XVI.

Uterine Therapeutics—External Applications—Hot and Cold Hip-baths—Use of Chapman's Spinal Hot Water and Ice Bags—Wet Bandages—Blisters—Iodine.

In previous lectures I have called attention to the most prominent features of those forms of uterine disease, of which from time to time we have met with examples; and in doing so, I have alluded to the treatment which I considered most suitable in each case. I think, however, I shall be doing you some service if I now devote one or two lectures, to the consideration in greater detail of what may be termed *Uterine Therapeutics;* a term which I must use in a very extended sense, so as to include not only medicines administered internally, but also the medicinal agents employed in the treatment of the diseases we have had under consideration, and the means by which these remedies should be applied. I know from my personal experience, that not a few even of those actually engaged in practice are so imperfectly acquainted with this subject, that if called upon to give directions to patients suffering from uterine diseases as to the manner of carrying out the treatment prescribed, they will either be altogether unable to do so, or will direct its employment in an inefficient manner.

In considering this subject, I shall direct your attention first, to the treatment of uterine disease by means of

agents applied externally to the surface of the body; secondly, to those applied directly to the vagina, os uteri, or interior of the uterus; and, thirdly, to those administered by the mouth or rectum or by hypodermic injection.

Of external agents, none are of greater value, if judiciously employed, than baths. I am convinced, however, that much injury has been done to patients by directing them to use either hot or cold baths, in a mere empirical fashion, and without duly weighing the effects they are likely to produce. I do not now mean to enter into the merits of sea-bathing, or of the ordinary tepid or hot bath, in which the whole body is immersed, but only of the cold and warm hip-bath, which, if judiciously employed, is often specially useful in the treatment of uterine disease.

There exists a very strong popular prejudice in favour of the various forms of hot baths as a means of inducing menstruation, if that function be suppressed, or imperfectly performed; a prejudice not confined alone to females, but largely shared, and indeed encouraged, by many medical men. The common practice adopted in cases where menstruation is suppressed, or where the discharge if appearing at all is scanty, is to immerse the feet, legs, and sometimes the pelvis in warm water, or mustard and water; a practice seldom followed by the intended results, but often on the contrary, proving decidedly injurious. I can confidently advise you sometimes to adopt in such cases a directly opposite line of treatment; namely, to direct your patient to sit in a bath containing cold water of a depth sufficient to cover the pelvis, the legs and feet not being immersed in it, but kept warm, by

being wrapped in flannel, or by being plunged in a foot pan full of hot water, care being also taken to keep the shoulders covered. The temperature of the water in the bath, and the length of time during which the patient should be directed to sit in it, must vary in each case. The water should not be too cold. A temperature of about 60° is probably the best. The bath should be taken at bed time, and the patient should sit in it each night for a period, gradually increased if she can bear it, of from five to fifteen minutes. In summer obviously it can be borne longer than in winter. On leaving the bath she should be well rubbed with a course towel or sheet, and put instantly into bed. If chilly, a hot jar should be applied to the feet; should the patient, however, feel uncomfortable or chilly after the bath, either it should not be repeated, or the immersion should be for a much shorter time. Let me point out to you as an example a case recently treated here in this manner. A. M., æt. twenty-five, unmarried, a servant, much confined to the house by her employment, had of late suffered greatly from headache, pain in the back, loss of appetite, and constipation. For months past the menstrual flow had become gradually more and more scanty, till finally it ceased to appear altogether. There was not any symptom of constitutional disease, nor of local congestion or inflammation. The bowels being constipated she was ordered pills containing aloes in combination with iron. This sufficed to keep the bowels open, but the headache continued, and there was no appearance of a return of the menstrual discharge. Strychnia was prescribed, still no improvement resulted. She was now directed to sit each night in cold water in the manner described, for ten days before the date at which

the flow was expected, and as a result we had the satisfaction of finding the catamenia re-appear, very scantily at first, it is true, but still in sufficient quantity to afford satisfactory proof that the treatment was telling. The same course was adopted at the approach of the next menstrual period, and on that occasion the flow was much more profuse, and indeed, in all respects, more nearly normal than it had been for years; the patient's general health also improved in a marked degree.

Bear in mind, however, that the cold hip-bath is not applicable to all cases in which amenorrhœa is a prominent symptom. You should never employ it in any case in which you have reason to suspect the existence of constitutional disease; or in patients of a very feeble anæmic habit; but if you are careful in selecting fit cases, I can safely recommend your imitation of the practice you have seen carried out in the case I have just drawn your attention to.

The warm hip-bath is a not less valuable agent than the cold one, and is, moreover, capable of being used with advantage in a greater variety of cases. You have seen me repeatedly employ it in the treatment of patients suffering from endo-metritis. It is also useful in certain forms of dysmenorrhœa, specially in ovarian dysmenorrhœa, as an adjunct to other treatment.

As in the case of the cold hip-bath, I recommend you to direct the warm bath to be taken at bedtime. The temperature should not be high, not more than three or four degrees, above that of the body, care being taken that it does not fall below that fixed upon during the whole period of immersion, which should be from about ten to fifteen minutes. In cases of pelvic cellulitis and in

some cases of chronic metritis, I am in the habit of directing these baths to be taken every night for weeks together, except during the continuance of the menstrual flow. When, however, they are employed with the view of relieving painful menstruation, they need only be taken for the five or six nights preceding the period. In these cases, too, I find that a somewhat higher temperature (about 105°) is needed.

We have yet another mode of applying heat and cold externally in the treatment of uterine disease; namely, by means of Chapman's spinal bags. This is a very useful method of employing these agents, and has, besides, the advantage of permitting their use without much trouble or inconvenience to the patient; for, while the bath can only be employed with advantage at bedtime, the spinal bag can be applied with facility at any hour in the day, and can be worn, if necessary, when the patient is dressed.

I have for some years past employed the spinal hot water bag—1st, in the treatment of menorrhagia; 2ndly, for the relief of pelvic distress arising in the course of uterine or ovarian disease; 3rdly, in some cases of dysmenorrhœa. I do not advise you to rely exclusively on the use of the hot water bag in cases of menorrhagia; or to suspend other treatment while you employ it, but to use it in conjunction with such additional remedies as you may deem fit. But this I can promise you, after very prolonged and careful observation, that in many cases of profuse menstruation, especially with patients whose muscular tissue is much relaxed, or in those suffering from the effects of imperfect involution of the uterus after delivery, you will often succeed in restraining for

the time the excessive loss, by applying to the lumbar vertebræ a 10-inch Chapman's spinal bag, filled with water at a temperature of about 105° Fahr., and this when other means have failed. The size I have just named is the best for the purpose, and the bag should be worn for not less than two hours at a time. Chapman's bags are far superior to the ordinary hot water ones, from the use of which I have not derived any satisfactory result.

Great benefit also follows the use of the hot water bag in cases of pain depending on the existence of almost any of the ordinary forms of uterine disease. Few patients labour under any of these affections without suffering from pain in the back, above the pubes, over one or other of the ovaries, or along the margin of the false ribs; and there are indeed few of these sufferers who do not derive relief from the judicious use of the hot water spinal bag. Indeed, I have often wondered that it is ordered so rarely. In like manner in cases of dysmenorrhœa, especially if they are of inflammatory or congestive origin, marked relief from present suffering often follows the wearing of the hot water spinal bag for two hours at a time at intervals through the day. I say present relief, for I do not think its action exerted any permanent effects on any of the cases in which I have employed it.

At present there are two cases in the hospital in which I have practised this treatment. One is that of Mrs. R——; she has a large intra-mural fibroid, and suffers much from pain above the pubes shooting down the inside of the thighs; this is specially severe just before the occurrence of each menstrual period. Her case is not one favourable for operation; she has derived the greatest relief from the hot water spinal bag, and its use has also

decidedly lessened the flow at the catamenial periods, which usually is very profuse. The other patient, Mrs. D——, was admitted last week in a very anæmic condition. She has been drained by uterine hæmorrhage, which had lasted continuously for three weeks. So extreme is her debility, that I have not as yet ventured to dilate the cervix, as is necessary to enable us to ascertain with certainty the cause of this; I believe it will prove to depend on a granular condition of the intra-uterine mucous membrane. In her case the application of the hot water bag was at once followed by a diminution of the discharge, and time was thus afforded for the remedies administered internally to act. Previous to its use she had taken ergot, iron, and quinine in full doses without effect.

The treatment of uterine diseases by the application of cold to the spine, as best effected by means of Chapman's ice bags, requires to be carried out with greater caution than that by means of the spinal hot water bag. The latter, injudiciously applied, may be altogether useless, or even aggravate suffering, but is not likely to be injurious. The ice bag, however, may, without doubt, if used in unsuitable cases, prove decidedly so. I have found the ice bag useful—1st, in certain cases of amenorrhœa in which the cold hip-bath was not suitable; 2ndly, in relieving the sickness of pregnancy; 3rdly, in certain forms of disease in which severe pelvic and lumbar pains were experienced, together with and apparently depending on the condition known as spinal irritation.

Some females of feeble constitution are quite unfit for the prolonged immersion in cold water required for carrying out the treatment just recommended in certain forms

of amenorrhœa; in such cases Chapman's spinal ice bag may oftentimes be applied with advantage over the sacrum and lower lumbar vertebræ. In the first instance it should not be used for more than fifteen minutes at a time. If well borne its application might be prolonged; but I consider it better to carry out this treatment by repeated applications of the ice bag, made at intervals of some hours, than by prolonged application made once or twice a day.

The same observations apply to this mode of treatment when practised with the view of relieving the pain which, though referred to the uterus or ovary, appears to depend on spinal irritation.

Without doubt the application of cold to the spine has sometimes a marked effect in lessening the distressing sickness experienced during pregnancy. Doubtless, too it is a remedy which frequently fails to effect good; but it is nevertheless a valuable one; let me, however, urge on you the necessity of using it with caution, for I am by no means sure that it is not capable of producing abortion.

There is one other method of relieving the suffering so constantly experienced in cases of uterine disease by external means, which it is well to bear in mind, and which I urge on you not to despise because of its simplicity, or because it is recommended by a class of men whose practice is not in general worthy of imitation. I allude to the wet abdominal bandage. It is usually applied by dipping one-third of a calico bandage three yards long and half a yard wide in water; the wet end is applied around the pelvis and the dry part rolled outside it so as to prevent the patient's sheets, or if worn in the day

time, as it can easily be, her under clothes, from being wet. It is specially useful in allaying pains depending on ovarian congestion or irritation. My colleague, Dr. James Little, recommends the use of these bandages for the relief of habitual constipation, and, it is a mode of treating this common and most troublesome affection well worthy of a trial. In such cases, you must direct the bandage to be applied every night for a considerable time.

Blisters are of great value in the treatment of many forms of uterine disease, especially in cases of chronic metritis or endo-metritis, where, the uterine walls having become thickened and indurated, no relief from suffering follows local blood-letting, whether practised by leeching or puncturing. In my opinion, blisters prove most useful when applied frequently, at intervals of a few days; they should be of small size, about the circumference of a crown piece. I generally direct them to be placed alternately over the sacrum and above the pubes, or over the ovary, if that be chief seat of pain. The application of iodine is in some cases preferable to the use of blisters. It does not weaken the patient as blisters often do, and should therefore be employed with patients who may be in a debilitated condition. To produce any beneficial effects, its use must be continued for many weeks, and as the repeated application to the same spot of either the tincture or liniment of iodine, especially the latter, is apt to produce much irritation, it is best to direct the iodine to be rubbed in over a limited space only, and when that spot becomes tender to apply it in a similar way to an adjoining part, so that without causing the patient much suffering the treatment may be carried on continuously.

To relieve the distressing backache so commonly present in these affections, you may sometimes employ with benefit a liniment composed of ten drachms of the compound camphor liniment with three of the tincture of aconite and three of chloroform, or an ointment composed of equal parts of veratria and iodide of potash ointments. This, well rubbed in over the seat of pain, often produces very satisfactory results. But you will soon discover that all remedies applied to the surface of the body seldom effect more than transitory good. To effect a cure, your remedies must be applied directly to the diseased parts. In my next Lecture I shall call your attention to these means.

LECTURE XVII.

Uterine Therapeutics (continued)—Applications to the Vagina and Uterus—Vaginal Injections—Intra-uterine Applications —Medicinal Treatment.

In my last Lecture I directed your attention to those agents, in the treatment of uterine and ovarian disease, which are found useful when applied to the cutaneous surface of the body; to-day I shall speak of that still more important class which are applied directly to the vagina and uterus. Of these, lotions injected into the vagina are the most common.

Syringing the vagina with water, or with medicated fluids is an old and popular remedy for nearly every form of uterine disease, and is one which (though often of great value if properly performed and practised in suitable cases) is as often utterly useless, and occasionally positively injurious. Thus, an elastic enema-bag, capable of holding from six to ten ounces, is commonly employed for the purpose: such an instrument is quite unsuitable. But occasionally a worse, because a positively dangerous, instrument is employed; namely, a glass syringe, the end of which is perforated with five or six holes. Not long since I was requested to see a woman to whom such a syringe had been supplied. The glass being thin, had broken in the vagina, and several pieces of broken glass remained in that canal, causing intense pain to the patient. By slowly and carefully introducing a Fergusson's speculum, I was enabled to extract through it the

fragments of the syringe, and happily no serious consequences followed.

Any syringe employed for the purpose of vaginal injections should be one capable of throwing up a continuous stream. Such syringes are commonly known as "the syphon syringe," or "Higginson's syringe."

When using the syringe the patient should, if possible lie on her back, the hips resting on a bed-pan which receives the fluid as it escapes from the vagina; but the majority of women object to this plan, as it necessitates the presence of an assistant, and you are then obliged to permit the patient to inject the fluid from a vessel placed in front of her, or in a foot-pan or bath over which she sits. This is a very inefficient method, for the fluid escapes from the vagina too rapidly, and does not distend that canal, as it is desirable it should. In cases where there is not any urgent reason for the use of medicated lotions, it is often a good plan to direct the patient to use her syringe while sitting in a warm hip-bath. I have found this method very efficacious in allaying vaginal irritation.

But very few patients can continue to use any of the ordinary syphon syringes for more than a few minutes at a time without fatigue; consequently, where it is our intention to inject a stream of water into the vagina for a length of time other means must be adopted.

The use of hot water vaginal injections, of a temperature of from 98° to 110° according to the nature of the case, is strongly advocated by Dr. Emmet, of New York; and there is no doubt that, when properly administered, they are in many cases, a very efficacious and valuable remedy; but to carry out this treatment aright four things are necessary:—

1st. The quantity of hot water used on each occasion should be large;

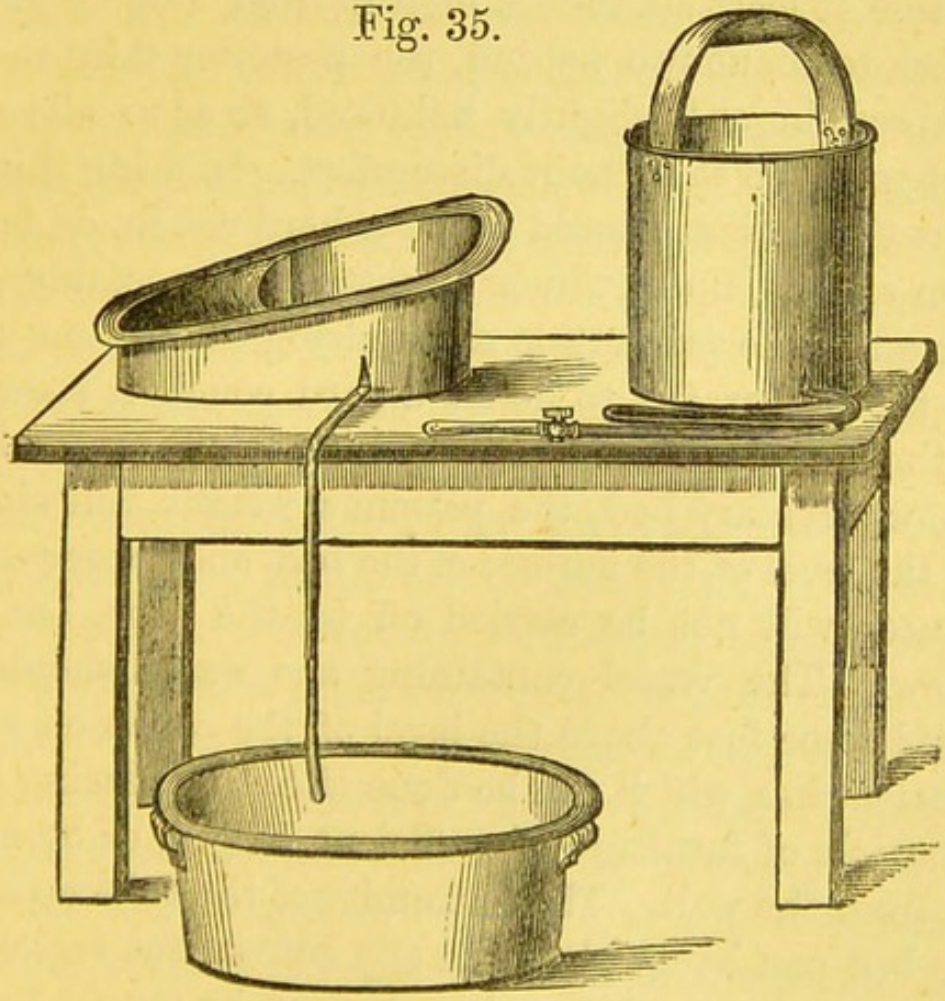
2nd. The temperature of the water should be kept up to an even standard;

3rd. The stream should be continuous;

4th. The patient should lie in such a position as will permit of some of the water remaining in the vagina, and consequently keeping that canal more or less distended.

To effect these objects I employ a very simple apparatus (Fig. 35).* It consists of a tin or zinc vessel, similar

Fig. 35.



Apparatus for Vaginal Douche.

to that used for purposes of irrigation by Surgeons, and

* Made by Fletcher and Phillipson, 10 Lower Baggot street, Dublin.

capable of holding not less than two gallons. To the side of this can, close to the bottom, an India-rubber tube six or eight feet in length, is attached, the free end of which is furnished with a stop-cock, and fitted with a vulcanite tube perforated with numerous holes about eight inches long, or an ordinary gum elastic vaginal tube will do. The other part of the apparatus consists of a bed-pan, made of zinc or tin, somewhat similar in shape to the slipper bed-pan in common use, with an India-rubber tube affixed to a point near its bottom. The bed-pan should be at least six inches high in front, sloping gradually back to about two behind, the posterior third should be covered in and slightly hollowed, so as to allow the patient to lie on it without discomfort. In using this apparatus the patient should lie on a hard couch, or, better still, on a table, upon which a mattress, if necessary, can be spread. The precaution of requiring the patient when using this apparatus to lie on a hard couch is essential, for if the pan be placed on anything yielding, such as a sofa or ordinary bed, the patient's weight will sink it below the level of the surface of the bed, and consequently the water will not be carried off by the tube, but will overflow. The vessel containing the water should be elevated some feet above the level of the couch on which the patient lies, which can be done either by placing it on some article of furniture of sufficient height, or by hanging it from the wall. The extremity of the tube attached to the bed-pan being placed in any convenient vessel, the arrangement is complete. Any one can be taught how to regulate the temperature of the water, and to replenish the vessel containing it, if that be necessary, while the patient herself can easily control its flow by means of the

stop-cock affixed to the end of the vaginal tube; the tube attached to the bed-pan carries off the water as it flows into it from the vagina, and thus obviates the necessity for repeatedly interrupting the douche to have the pan emptied. This simple and cheap apparatus can be used with very little trouble.

Having thus pointed out the method of syringing the vagina, it is further important that you should consider the temperature of the fluid to be injected, the medicinal agents to be so employed, and their strength.

As a rule, I recommend you never to inject any perfectly cold fluid into the vagina; doubtless perfectly cold water is a more tonic application, if I may use that expression, than warm water could be; but the object of injections generally is to allay irritation, and not to give tone to the vaginal walls; that will soon follow as a result if you remove the local affection. Besides I have seen very unpleasant and even serious consequences follow the injection of cold water into the vagina. Thus severe uterine colic, and intense pain above the pubes occurred as an immediate result in one case; and in another so grave were the symptoms that life was endangered from an attack of pelvic cellulitis which followed the injection into the vagina of cold water, ordered with the view of checking profuse menstruation. I recommend you, then, to direct that the fluid employed be used at about blood heat, and when vaginitis is present, at even a higher temperature, while in cases of cellulitis, it should be used at a temperature of from 105° to 110°.

The medicinal agents employed for vaginal injections are very numerous. I, however, restrict myself to a few. I have so frequently found solutions of alum and of

the sulphate of zinc to aggravate the patient's sufferings when vaginitis was present, that I do not, in such cases, now employ either. They coagulate the albumen which enters so largely into the composition of leucorrhœal discharges, and, if you examine a patient any time within twenty-four hours after she has used an alum injection, you will find a number of hard masses in the vagina, formed by the coagulation of the discharge, and these often cause much discomfort. Borax is a better agent; but it too, sometimes, causes irritation, though in a less degree. A drachm of borax to the pint of water is the strength I usually direct to be used.

Where the object is to soothe and to allay irritation, an infusion of tobacco is an excellent remedy. Tobacco, must, however, be used with great caution. Some patients are peculiarly susceptible to its action; especially those in whom the orifice of the vagina being narrow some of the fluid is retained in the canal. Begin, therefore, by infusing fifteen grains of the unmanufactured leaf in a pint of boiling water. If this produces no unpleasant effect increase the strength to thirty, or even sixty, grains to the pint. In many cases the addition of a drachm of borax to each pint of the infusion greatly increases the efficacy of the treatment. Many patients, however, are unable to use the tobacco at all, as even a very weak infusion causes nausea and faintness. When this is the case, or where you fear to run the risk of causing any discomfort to the patient, I recommend you to substitute for tobacco an infusion of hops, directing an ounce of the latter to be infused in a pint of boiling water, with or without the addition of borax, as you may deem advisable.

Cases are, however, frequently met with where no va-

ginal inflammation or even irritation exists, but where a profuse and weakening leucorrhœal discharge is constantly being poured out, which it is necessary to check; here astringents, such as alum or zinc, in the proportion of a drachm to the pint of tepid water, often prove most useful. Should they irritate, you will find the decoction of oak bark serviceable. Warn your patient, however, that the decoction of oak bark stains linen, for ladies will not be pleased to find their underclothing or towels covered with ugly stains. This reminds me to give you a similar caution respecting the use of the solution of nitrate of silver. A few years ago this was almost the only remedy employed in the treatment of uterine disease. I can with confidence say that as an application in cases of disease of the body of the uterus or of the cervix it is nearly useless. In cases of vaginitis it may be employed with advantage. It must be applied through a speculum, the surface of the vagina being brushed over with a solution containing from ten to twenty grains of the salt to an ounce of water. The application may be repeated at intervals of two or three days. I now seldom employ the solution of nitrate of silver, as I look on its use in the majority of cases as a mistake, and I believe I can obtain better results by other means.

Of all the agents which are applied to the vagina for the relief of inflammation or congestion of that canal, glycerine, without doubt, is one of the most valuable. A small roll of cotton-wool will absorb five or six drachms of glycerine; you fasten to this a strong thread or piece of twine, introduce it through a speculum, and leave it in the vagina for twelve or even twenty-four hours, directing your patient to withdraw it at the expiration of that

time by means of the string which is left hanging outside the vulvæ. Glycerine thus applied produces a copious watery discharge, which has a marked effect on the mucous surfaces in immediate contact with it. Thus, after its application the vagina and vaginal aspect of the cervix uteri appear pale, and the copious discharge seldom fails to relieve, for the time at least, that distressing sense of heat which is complained of in severe case of vaginitis. In less acute cases the addition of ten grains of tannic acid to the ounce of glycerine often proves useful, but if used before the acute symptoms subside, it may cause increased irritation. Be sure, whenever you use glycerine, to warn your patient that she is to expect a copious discharge, otherwise the great flow which often comes on almost immediately will cause much alarm.

Medicated vaginal pessaries, containing a variety of medicated agents, such as iodide of lead, mercury, tannin, belladonna, &c., are in common use. I can only say that I have never found them of real service, and consequently do not now employ them. But many drugs may be administered with great advantage per anum in the shape of suppositories; this specially holds good with respect to iodoform. In some painful affections, and especially in some cases of fibroid tumours of the uterus, in which the sufferings are severe, five grains of iodoform, in a suppository introduced into the rectum gives great relief, and may with advantage be substituted for opium. It seems to act by relieving muscular spasm.

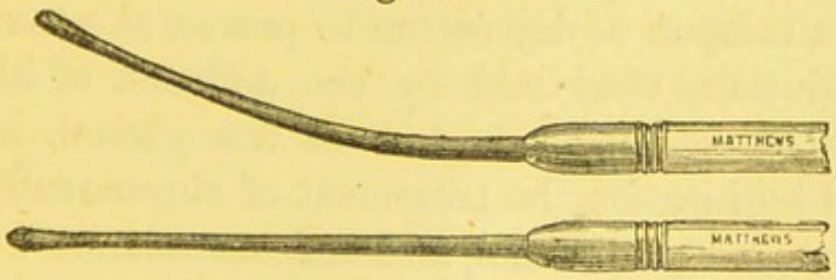
Numerous medicinal agents are now employed in the treatment of disease of the cavity of the uterus. These may be used in the form of fluids, of solids, or of ointments. I mention them in what I consider to be the order of their value.

With respect to fluids, I give you one caution: be careful how you inject them into the uterus. Such a method is fraught with great danger, and except that it is generally easy of execution has little to recommend it.

The fluids most commonly employed in the treatment of intra-uterine diseases, are a saturated solution of carbolic acid, iodized phenol, tincture of iodine, the tincture of the perchloride of iron, the pernitrate of mercury, chromic acid, and the fuming nitric acid. A solution of nitrate of silver is also sometimes used, but I believe it to be inefficacious.

Carbolic acid is a mild, but not always a painless application; applied to the vaginal surface of the cervix it produces a very superficial slough, its effects passing off in twenty-four hours. Applied to the interior of the uterus, its effects are equally superficial and transitory. It is therefore useful in cases where you desire to apply a mild, stimulating caustic; but it is not suitable when it is necessary to destroy the so-called granulations which in severe cases cover the vaginal surface of the cervix and extend into its canal; nor where an unhealthy condition

Fig. 36.*



PLAYFAIR'S PROBES.

of the mucous membrane lining the body of the uterus, the result of chronic endo-metritis, exists—a condition which often gives rise to profuse menorrhagia. It is best applied

* Made by Matthews Brothers, 27 Carey street, London.

by means of a flexible silver or copper probe, such as those suggested by Dr. Playfair (Fig. 36), round the end of which is wrapped a layer of cotton; this can be passed into the uterus to the desired depth. When carried beyond the os internum the carbolic acid sometimes causes pain, which, however, soon subsides. I generally introduce the probe twice, dipping it a second time in the solution before doing so, because the first application cauterizes the cervical canal only, but the second generally reaches the body. Always carefully wipe off the cervix any of the solution which may have escaped, for if it comes in contact with the vagina it causes much smarting, which, however is easily relieved by passing up a small pledget of cotton soaked in water.

Iodized phenol is the name given by Dr. Battey, of Georgia, U.S.A., to a solution of iodine in carbolic acid. He directs half an ounce of iodine to be mixed with one ounce of crystalized carbolic acid, and combined by the aid of gentle heat. Dr. Battey states that used at this strength it has a powerful effect on cancerous growths. A piece of cotton saturated with the solution, is to be laid against the part affected; outside of this is to be placed a tampon of dry cotton to protect the sound parts. This solution, weakened by the addition of about one part of carbolic acid to two of the phenol, is recommended by him for the treatment of chronic affections of the cervix, cervical canal, and endo-metrium. I consider it a very useful agent.

The perchloride of iron is an admirable styptic, and, as such, should be used when it is desirable to check uterine hæmorrhage. You can apply it in the same manner as the carbolic acid; but it is generally better to saturate a

small roll of cotton with the tincture (or, as being less irritating, with a saturated solution of the drug in glycerine). Pass this up through a speculum, and place it in contact with the os uteri, and then, outside this, another and larger pledget of cotton, well soaked with glycerine. Both these should be removed within twelve hours of their application. I have seen a very deep slough produced in a case where the cotton, saturated with the perchloride, was accidently left in the vagina for two days. When it is desirable to check hæmorrhage depending on a granular condition of the cervix, or the existence of cancerous ulcerations, the perchloride of iron is a very valuable agent. Iodine has been used for the same purpose; it will sometimes answer, but it is less certain in its effects. The pernitrate of mercury is a powerful and active caustic. It has been recommended by some practitioners as an application in cases of malignant disease. I never employ it, because I believe I have in nitric acid a caustic equally, if not more efficacious, and at the same time one which is much safer; for severe salivation has followed the use of the pernitrate in persons susceptible to the peculiar action of mercury.

Chromic and nitric acid are nearly identical in their action. The former is, however, in my opinion, more uncertain in its effects: it is also more irritating. I therefore prefer the nitric acid. Its application causes very little, indeed in general, no pain; it produces but a superficial slough, and has a wonderful effect in bringing about a healthy condition of the mucous membrane lining the body and cervix uteri. It also, in many instances, exerts a directly sedative influence, allaying the severe pain and vesical irritation often present in cases of endo-metritis.

No matter which of these fluid caustics you may select certain rules applicable to all should be borne in mind. In the first instance, local inflammation, indicated by tenderness of the uterus when touched, should, if present, be removed, or at least mitigated, by appropriate treatment before any of them be used. To effect this the cervix, if soft and engorged, should be punctured, if hypertrophied and indurated the douche should be used.

When it is desirable to apply nitric acid to the fundus, it should always be done through a cannula or tube, with the double object of preventing the agent selected from being weakened by admixture with the secretions during its passage through the cervical canal, and by contact with its walls, and also of protecting the healthy structures from the action of the caustic. For it must be borne in mind that the mucous membrane lining the cavity of the uterus may be, and often is, diseased, while that lining the cervical canal is in a perfectly healthy condition. It is therefore all-important that the healthy structures should be protected from the action of the caustic.

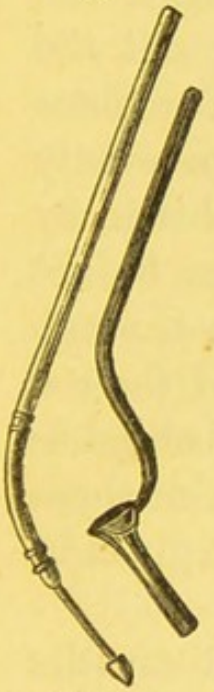
With the view of effecting this object, I have devised an instrument of very simple construction. It consists of a short tube or cannula made of vulcanite, and of a curved stilette, fitting the cannula accurately, which is fixed to a boxwood handle (Fig. 37).

Formerly I had the cannula made of platinum (Fig. 38), but its cost is so great that it prohibits its general use.

The easiest and most satisfactory method of using this instrument is by exposing the os uteri by means of the Duckbill Speculum, and the cervix being fixed by a tenaculum, to introduce it into the uterus; but if you have

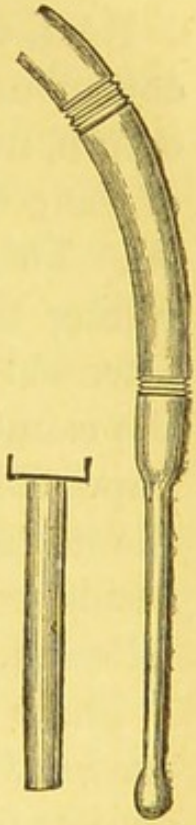
not an assistant you will in general succeed in introducing it through a full-sized Fergusson's speculum. In either case, when this has been effected the stilette is to be withdrawn, and the cannula being held steady by means of the handle affixed to it, a copper or platinum rod round which a layer of cotton wool has been carefully rolled, is to be dipped in the acid and passed through the cannula up to the fundus. There is seldom much difficulty experienced in introducing the cannula, for generally in suitable cases the cervical canal is patulous. If this is not the case a single tent of sea-tangle, introduced twelve hours before the application is made, will dilate the cervix sufficiently, or Nos. 3 and 4 of Hegar's dilators may be introduced for the same purpose.

Fig. 37*



Author's Cannula for Intra-uterine Medication.

Fig. 38.*



A twofold advantage is gained by employing a cannula such as I recommend in the treatment of intra-uterine disease. First, it enables you to convey the caustic up to the part to which you desire to apply it, without its being weakened by previous contact with the cervical canal. Secondly, it protects the latter from the action of the caustic, a matter sometimes of importance if, as is often the case, that canal is healthy. Should it be desirable to apply the caustic to the cervical canal, that can be done after the cannula has been withdrawn.

Now one word as to the details of this operation—if

* Manufactured by Fannin and Co., Grafton street, Dublin.

that be not too dignified a name for the proceeding—for you will fail in your attempt to carry out this method of cauterizing the interior of the uterus successfully unless you attend to various little points. The first is, that the extremity of the cannula passes fairly through the os internum and that it is not allowed to slip out.

Next, and even more important, is the affixing of the cotton firmly on the end of the probe. Draw out the cotton, moisten the tip of the rod, catch but a few fibres of the cotton at first, and roll the rest slowly and evenly on. This is better effected by rotating the rod than by rolling the cotton round it. If these directions be not attended to the cotton will wrinkle up as it passes through the cannula, and this will render the passage of the rod impossible; or, if loosely put on it may be left behind in the uterus when the rod is withdrawn. Neither of these accidents will ever occur if the directions I have given be followed.

These directions apply equally to all liquid caustics used for the purpose of intra-uterine medication, and the success of your treatment will depend very much on the dexterity with which you carry it out. If there be too much cotton rolled round the probe, or if it be too loosely rolled on, the rod will stick in the cannula, and you will have to withdraw it and re-introduce it; again, if you take up too much of the caustic on the cotton it will trickle down, and may cause much pain, and set up inflammation in the vagina; so that to carry out this method, simple though it be, skill is needed and must be acquired.

Of the solid caustics, the nitrate of silver and sulphate of zinc are the only ones I use. These can be inserted

through the cannula I have described; but better by means of Sir James Simpson's porte-caustique (Fig. 11, p. 89).

By using it you can dispense with the speculum. Ten grains of the nitrate of silver or of the sulphate of zinc, the latter in the form of "zinc points," as suggested by Dr. Braxton Hicks, may be introduced through it up to the fundus, and left there to dissolve. Either of these caustics so used is liable to cause pain, seldom, however, severe in character; this too can be, in some degree at least, lessened by placing a pledget of cotton saturated with glycerine in the vagina. I use both these agents occasionally, but less frequently than formerly, for since I have devised the means of applying the nitric acid, without previous dilatation, to the interior of the uterus by means of the cannula, the results have been so satisfactory that I now seldom resort to the use of the solid caustics.

Of the use of ointments I have no personal experience; they are more difficult to apply than either the fluid or solid caustics named. Dr. Barnes, however, considers them to be often of great value in some cases.

It is occasionally advisable to destroy the tissues of the cervix to a greater depth than can be effected by means of nitric acid. For this purpose two agents are employed; namely, caustic potash, or potassa c. calce, and the actual cautery; the former is eminently useful in those cases where the lips of the os uteri is in a state of granular erosion, and you have seen me use it with the very best results. As I have in a previous lecture (Lecture IX.) explained the mode of applying it, I shall not now dwell on it further than to remind you that it must be used cautiously, and that the vagina must be protected from the

action of the caustic by the insertion of a pledget of lint saturated with vinegar under the lower edge of the cervix.

The actual cautery is not much employed in this country, but in America its use is warmly advocated. Dr. Gaillard Thomas states that, according to his experience, "of all the means of counter-irritation for removing chronic parenchymatous congestion, and causing a diminution in the size of the uterus by stimulating absorption, this is the most efficient and least objectionable as to its consequences," and in this opinion I entirely concur. He uses a small steel rod terminating in a disc not much larger than a split pea. This heated in a spirit lamp he applies for ten or twenty seconds to the cervix, so as to create a small slough, re-heating and re-applying the cautery, so as to cauterize the cervix in two or three places, one at either side of the os uteri. I have found excellent results to follow the use of the actual cautery, but much prefer Paquelin's thermo cautery to the metal rod. On a previous occasion (Lecture IX., page 191), I have given my opinion as to the value of the actual cautery, and now refer you to it.

Dr. Getchell, of Philadelphia, also advocates the use of the actual cautery in cases in which the cervix uteri is hypertrophied and indurated; but instead of steel rod he employs charcoal sticks, made of nitrate of potash, twenty grains; charcoal, seven drachms; powdered gum, one drachm, and water sufficient to make into a paste. This paste is to be formed into sticks of any required diameter and length. Dr. Getchell uses them of about the diameter of the little finger; the stick is to be held in the flame of a gas or spirit lamp for a few moments till converted into a live coal, and applied through a

speculum. His directions are: "Take the caustic in the forceps and apply it about four or five lines from the os to the lip which is most hypertrophied. Now, if you make slight pressure for a few seconds you will destroy tissue over a space of about the size of a three cent piece, and of about two lines in depth; the pain is very slight. On withdrawing the cautery I sponge the part with cold water. I then introduce a pledget of lint saturated with glycerine, and keep the patient in bed for forty-eight hours." The actual cautery may be applied once a month. I have tried these methods frequently, and can bear testimony to their efficacy. Dr. Getchell's is very convenient, but in cases in which much induration exists, it is not sufficiently active.

I shall now make a few observations respecting those drugs which are most frequently employed in the treatment of uterine disease, premising that medicines have but little influence on the uterus, and that therefore, it is not surprising they effect but comparatively little good in the chronic diseases of that organ. My own experience leads me to the conclusion that those which have any direct effect on the uterus do not exceed four or five in number. I have satisfied myself that ergot of rye, sulphate of quinine, strychnia, and arsenic exert a direct action on the uterus. I am not satisfied that any other medicine does. I do not mean to say that other medicines are not of use in the treatment of uterine disease, but I believe that their action is only secondary. Thus, the administration of iron is often followed by marked benefit in many cases of old standing uterine disease, but this improvement is only the result of improved general health.

Ergot is a drug, the value of which, though long known, has but recently been fully recognized. At first used only in labour with the view of stimulating the muscular fibres of the uterus and exciting them to increased action, it is now prescribed by physicians in cases of hæmorrhage from the lungs and other viscera, sometimes even with very good results in the hæmorrhage occurring from the bowels in typhoid fever; but it is specially indicated in nearly all the forms of uterine hæmorrhage. Astringents are, in my opinion, nearly valueless in such cases. There is hardly a case of uterine hæmorrhage or of menorrhagia, unconnected with malignant disease of the uterus, in which, from one cause or another, that organ is not enlarged, and its muscular tissue relaxed. Hence the value of ergot; it stimulates the muscular fibres of the uterus to contract, and thus checks the flow of blood. When administered for this purpose, ergot must be given in large doses and at short intervals. A drachm of the liquid extract, or an ounce of the infusion should be administered every third hour. In anæmic patients the addition of ten drops of the tincture of the perchloride of iron to each dose greatly enhances the efficacy of the medicine. Ergot may also be administered in cases of menorrhagia in the form of powder; ten grains of it, directed to be taken at short intervals, being the ordinary dose.

One other mode of administering ergot deserves special notice. I allude to its hypodermic injection. It is thus employed by physicians in many cases in which hæmorrhage occurs, unconnected with uterine disease; but it is specially useful in the treatment of menorrhagia depending on the presence of uterine fibroids. The recorded

cases seem to prove that ergotin, that is the active principle of ergot, injected subcutaneously, not only arrests the profuse hæmorrhage which occurs in connection with these tumours, but has the effect of diminishing their volume. The drawback to using it subcutaneously is that it is liable if not carefully used to produce great irritation at the point where it is injected, the result frequently being the formation of troublesome though circumscribed abscesses. I generally inject fifteen to twenty minims of the Ext. ergotæ liq. B. P., with equal parts of water, daily. In carrying out this treatment, the needle should be made to penetrate deeply into the muscular structures, the safest site for the injections being the glutæus muscle.

Next to ergot, quinine is, perhaps, the most valuable agent at our disposal in the treatment of uterine hæmorrhage depending on a relaxed condition of the muscular tissue of the uterus, such as that which occurs in many cases of subinvolution. But you must give it in large doses; five grains or upwards every four hours. I have also found quinine in full doses efficacious in cases of menorrhagia, where ergot has failed. Thus, I have at present under my care, a lady whose uterus is the seat of a subperitoneal fibroid, and she suffers from profuse menstruation. I have tried with her in turn nearly every known remedy, and she finds greater benefit from quinine in seven-grain doses, with the addition of ten minims of the tincture of the perchloride of iron, than from any other drug. She is also one of those patients who has derived benefit from the use of the spinal hot water bag. I do not rely as much on quinine in cases of menorrhagia as I do on ergot, but of this I am satisfied, that in some

cases in which ergot produced no beneficial effects, the administration of quinine checked the hæmorrhage.

One other drug specially deserves notice with reference to its efficacy in certain forms of menorrhagia. I allude to arsenic. It seems by diminishing the calibre of the capillary arteries, to check the exudation of blood from the inner surface of the uterus. I do not in general administer arsenic during a menstrual period, but direct it to be taken in the interval between the periods. I believe it to be of great use in those cases in which the excessive loss is met with in females of a leuco-phlegmatic temperament. Arsenic should be given after meals, in gradually increased doses of from three to eight drops of the liquor arsenicalis B. P. It is best administered by directing the patient to take the number of drops ordered on a crumb of bread, after meals, or if preferred can be given in combination with a bitter, such as the compound tincture of gentian, or, if that be objectionable, with the compound tincture of chloroform. In several cases I have found its efficacy increased by the addition of ten drops of the tincture of digitalis to each dose.

That strychnia exerts a direct action on the uterus is, to my mind, clearly established. Added to ergot in cases of parturition, it greatly increases the efficacy of the latter drug, being specially useful when *post partum* hæmorrhage is anticipated. It appears to have the power of increasing the tonic contraction of the uterine fibres and of preventing their undue relaxation when the pain has subsided. It is specially valuable administered in combination with ergot in cases of menorrhagia depending on imperfect involution of the uterus. Its use is contra-indicated in all cases where any inflammatory condition

of the uterus or ovary exists. Strychnia is also useful in many forms of amenorrhœa where it seems desirable to stimulate the uterus and ovaries, and in such cases it is often prescribed with advantage in combination with iron. It should be administered cautiously, commencing with three or four drops of the liquor, the doses to be gradually increased to eight, or even ten drops, three times a day. I have, however, known even small doses produce very unpleasant symptoms; some patients being apparently very susceptible of the effects of this drug.

Mercury seems beneficial in some forms of chronic uterine disease, specially in those in which a low form of chronic inflammation exists, with thickening of the uterine wall and induration. It should be administered in small doses for a considerable length of time. The only preparation of mercury which I employ in these cases is the perchloride, in doses $\frac{1}{20}$th of a grain three times a day. If constipation exists it may be prescribed in the form of pills, each containing $\frac{1}{4}$th of the extract of belladonna, with $\frac{1}{8}$th or $\frac{1}{4}$th of a grain of the extract of aloes. I direct these pills to be taken continuously for many weeks.

The bromides, specially the bromides of potassium and ammonium, exerts a marked influence in certain forms of ovarian irritation and congestion. In many women the menstrual period is ushered in by severe mammary pains, the breast becoming hard and full, pain being also experienced in the ovarian regions. In such cases, thirty grains of the bromide of potassium, taken three times a day, often produce marked results. It is also sometimes useful in the vomiting of pregnancy, but it cannot be relied on. The same remark applies to its use in the reflex

irritation of the stomach met with in some of the chronic forms of uterine and ovarian disease.

I may here remark that the hypodermic injection of morphia occasionally controls the vomiting met with in pregnancy, or that which sometimes follow severe cases of *post partum* hæmorrhage. The formula I now adopt for the solution to be injected subcutaneously is the following:

Acetatis morphiæ, gr. viii;
Liquor. atropiæ, ♏xlviii;
Glycerini, ♏v;
Aquæ, ad ℥iv—M.

Fifteen drops of this solution contain half a grain of the acetate of morphiæ, and $\frac{1}{40}$th of a grain of sulphate of atropia.

Indian hemp is a useful drug, and is often administered with benefit in cases of painful menstruation. Its use seems to be specially indicated in those forms of dysmenorrhæa depending upon the presence of uterine fibroids, in which the pain experienced at the commencement of the menstrual periods is sometimes very severe. Most patients bear this drug well, and derive much benefit from its use. The dose is from one-half to a grain of the extract, or from ten to fifteen drops of the tincture, every fourth hour; but with some it disagrees, producing dizziness and nausea, and then its use must be discontinued. A grain of the extract of Indian hemp, combined with one of camphor, and quarter of a grain of opium, forms a pill very useful in some forms of dysmenorrhœa It should be repeated at intervals of three or four hours so long as the pain lasts.

Iodoform administered in the form of a suppository sometimes is very useful in allaying the pain due to the presence of a uterine fibroid; each suppository should contain from five to ten grains.

From what I have said it may be inferred that I have little faith in the value of that class of medicines known as emmenagogues, and which are popularly supposed to have a specific action on the uterus, and to be capable of inducing the occurrence of the menstrual flow should it never have appeared, or having appeared, be suppressed. I do not believe that any known medicine is endued with any such special power, and am of opinion that much harm is often done by the exhibition of powerful and irritating drugs, in such cases. Doubtless, the administration of some medicines is often followed by the occurrence of menstruation. Thus, in anæmic girls, the exhibition of aloes combined with iron, often produces this effect. But then this is brought about as a result of the improved condition of the patient's general health, due to the action of these drugs, and not to any special action the iron or aloes exercise on the uterus. I therefore advise you not to administer "emmenagogues" to your patients in your future practice, but to treat the cases of amenorrhœa which come under your care on rational principles.

In some patients suffering from uterine disease, great irritability of the bowels is a prominent symptom; these patients are generally in a condition urgently demanding the exhibition of tonics, which, however, it is difficult to administer, as they often only increase the previously existing irritation of the gastro-intestinal mucous membrane. In such cases you will sometimes succeed by combining quinine with the carbonate of bismuth, administered in

the form of powder; two grains of the former with eight or ten of the latter, to be taken before meals. Quinine sometimes agrees if combined with pepsine wine. The bromide of iron in ten to fifteen grain doses, alone or combined with a drachm of the succus conii, is a valuable medicine, specially useful in cases of debility, where the existence of ovarian irritation prevents the exhibition of a stimulating tonic.

Most patients, however, labouring under uterine disease suffer from constipation of the bowels, which is a source of great discomfort to them, and is also a most troublesome symptom to treat; the action of any strong purgative increasing their sufferings at the time, while the dose must be repeated at short intervals, often too in augmented doses. In such cases enemata of cold water, taken regularly at the same hour daily, frequently answer the purpose of procuring a daily evacuation. Some patients cannot bear, however, the injection into the bowels of cold water; when this is the case it must be used tepid, but its effects are then much less satisfactory. Over and over again patients have told me that enemata produced no effect; on inquiry I found they used warm water, and on inducing them to try the injection cold, have known satisfactory results to follow. But many patients cannot or will not submit to this treatment; then you may try a pill containing a half a grain of the extract of belladonna and four grains of the compound rhubarb pill, to be taken regularly each night; or, if iron be indicated, you may combine the extract of aloes with the sulphate of iron, in doses of from one quarter of a grain to a grain of the former, with two grains of the latter, to be taken as a pill three times a day, before meals. Very often the

smaller doses named will prove quite sufficient if taken regularly.

But the question of aperients is too extensive a subject for me to enter into at length. In conclusion I shall only point out that the Pullna, Frederichshall, or Hunyadi Janos waters often agree very well. They should be taken before breakfast, and be warmed by adding a small quantity of hot water.

Although not connected with the subject of which I have been speaking, I wish, before concluding, to give you directions as to the method of plugging the vagina, which becomes necessary in many cases of uterine hæmorrhage depending on almost any cause. Of course, in an emergency, a sponge or a pocket-handkerchief may answer the purpose; but when it can be obtained, nothing does so well as common cotton wadding. It should be cut in strips, two inches wide, the full length of the sheet, the paper to which the wadding adheres being left attached. These strips should then be introduced one by one, with the aid of a speculum, a piece of tape or twine being attached to those first introduced, for the purpose of facilitating removal, the ends of the string being left outside the vulvæ. As many strips of the wadding as the vagina will contain are in this manner to be introduced, from four to six being usually required, according to the capacity of the vagina. As the strips of wadding are introduced the speculum should be gradually withdrawn, and, when finally removed, the finger should be passed into the vagina, and the wadding packed firmly in, and, if it be found that the vagina is not fully distended with the plug, more cotton should be introduced. If this precaution be not adopted, blood is very likely to ooze out be-

tween the sides of the vagina and the plug. Another very good plug is formed by twisting cotton wool into a loose rope, and introducing it in the same manner.

The plug thus formed is easily withdrawn, for if the ends of the strips last inserted be laid hold of by a pair of dressing forceps, and that they are then rotated so as to coil the strips round them, each piece can be extracted in succession without its breaking, while the ones first introduced are withdrawn, by means of the strings attached to them.

Where I have the aid of an assistant, I prefer using the duck-bill speculum when plugging; but if alone I introduce the strips of wadding through a full-sized Fergusson's speculum. In cases of emergency, where no speculum is at hand, one may be extemporized by introducing the handle of a spoon into the vagina, and with it drawing back the perinæum, or the index and middle finger of the left hand may be introduced, and made use of to dilate the orifice of the vagina; for if this be not done by some means the introduction of the plug is not only a matter of difficulty, but will cause the patient much pain. Dr. Barnes advocates plugging the os uteri itself with sea-tangle or sponge tents, in preference to filling the vagina with the plug. Doubtless, this method is efficacious, but the difficulty of effecting it will render its general use unpopular.

Any substance left in the vagina rapidly becomes very offensive; but this can be in a great degree remedied by smearing the wadding or cotton freely with glycerine. The plug should in all cases be withdrawn after the lapse of twenty-four hours; to be replaced for a similar period if the hæmorrhage continues. Should you be unable to

obtain wadding, cotton or tow will answer the purpose very well. You must, however, be careful to attach a string to each of the rolls first introduced, and to keep the ends outside the vulvæ, or you will experience some difficulty in removing the plug. Plugging is efficacious in restraining hæmorrhage depending on any of the causes I have enumerated as giving origin to menorrhagia, and should be practised in severe cases.

END.

INDEX.

PAGE.

Abortion, a cause of subinvolution 78
Absorption of fibroids . . 169
Actual cautery, value of, 191, 216
Adenoma of the ovary . . 326
Alveolar tumour of ovary . 326
Amenorrhœa 36
congestive . . . 41
constitutional . . . 46
treatment of, by cold hip-bath 358
by spinal ice bag . 363
Amputation of cervix uteri 266, 309
Anæmia 47
Anteflexion of uterus . . 259
endo-metritis, depending on 203
Aperients 390
Aphthæ, vaginal 25
Arnott, Mr., on cancer of the uterus 302
Ascites, diagnosis of, from ovarian dropsy . . . 338
Atresia, vaginæ 39
Atthill's, Dr., intra-uterine cannula 379
écraseur 125
Avulsion of fibrous tumours . 147

Backache, treatment of . 362, 366
Bandages, wet abdominal . 364
Barnes, Dr., dilators . . 99
Baths, value of hot and cold . 358
Bi-valve speculum . . . 7
Bladder, irritation of, in cervicitis 187
in endo-metritis . . 201
in retroflexion . . . 240

PAGE

Blisters, use of, in uterine diseases 365
Blood-letting, local. . 23, 180
Borax, vaginal injections of 27, 372
Breasts, reflex irritation of, in retroflexion 242
Bright's disease, menorrhagia in connection with . . 75
Bromide of potassium in uterine therapeutics. . 387

Calcareous transformation of fibrous tumours . . . 170
Cancer of the uterus . . 298
a cause of menorrhagia . 76
amputation of cervix in . 309
diagnosis of . . . 321
epithelial . . . 303, 308
Freund's operation for . 315
medullary . . . 301
pathology of . . . 300
post mortem appearances . 302
Sims' operation for . . 312
symptoms of . . 304, 321
Cancer of the vagina . . 303
Cannabis Indica, in dysmenorrhœa. 388
Cannula, Dr. Atthill's intra-uterine 379
Cannulæ, Gooch's, Dr. Atthill's modification of . . . 125
Carbolic acid, intra-uterine application of . . 82, 375
Catarrh, cervical . . 29, 177
Cauliflower excrescence . . 303
Caustic potash, application of. 185, 190

PAGE.

Caustics, rules for intra-uterine application of . . 378
Cautery, actual, use of . 191, 217
Cellulitis, pelvic . . . 217
Cervical catarrh . . 30, 177
Cervix uteri, amputation of . 266
abrasion of . . . 176
dilatation of . . . 64
division of . . . 94
elongation of . . . 266
fissured 192
granular erosion of . . 92
hypertrophy of . . 291
induration of . . . 186
inflammation of . . 173
treatment of . . . 179
inflammation, chronic of . 186
diagnosis from cancer 188, 321
treatment of . . . 181
mode of puncturing. . 180
shortening of . . . 293
ulceration of . . . 175
Chapman's spinal bags . . 361
Charcoal cautery sticks . . 382
Children, leucorrhœa in . . 28
Chlorosis. 47
Chromic acid 377
Climacteric period, menorrhagia at . . . 74, 110
Clitoridectomy . . . 31
Cold water baths, use of. . 358
enemata 390
Constipation due to retroflexion 233
habitual, treatment of 365, 390
Curette, use of . . . 108
Cystic disease of ovaries. . 324
Cystocele. 262
Cysts, development of, in fibrous tumours . . . 137
Cysts, ovarian. . . . 324

Depletion, local, of cervix . 180
Dermoid cysts of ovaries . 327
Dilatation of uterus . . 94
rules respecting . . 100
Dilators, Dr. Barnes' . . 99
Dilators, Hegars' . . . 101
Displacement of the uterus . 228

PAGE,

Division of cervix . . . 64
in cases of anteflexion . 71
of dysmenorrhœa . . 64
of endo-metritis . . 209
Douches, vaginal . . 223, 369
Dropsy, ovarian . . . 324
Duck-bill speculum. . . 8
Dysmenorrhœa . . . 50
cause of pain of . . 55
classification of cases of . 51
depending on endometritis 202
mechanical . . . 60
inflammatory . . . 54
ovarian 54
spasmodic . . . 52
Dyspareunia 33

Ecraseur, Dr. Atthill's. . 125
Dr. Hicks' . . . 122
Electricity in amenorrhœa . 43
Electrolysis 180
Elongation of the cervix uteri. 166
Emmenagogues . . . 389
Emmet's operation for fissured cervix . . . , . . 192
Endo-cervicitis . . . 177
Endo-metritis . . . 194
sterility, depending on . 204
pathology of . . . 203
Enemata. 390
Endoscope, use of . . . 103
Enlargement of the uterus . 285
causes of 287
Enucleation of fibrous tumours 146
Epithelial cancer . . 303, 308
Ergot in uterine therapeutics. 384
Ergot, hypodermic injections of, in fibroids . . 151, 384
Examination, bi-manual, of uterus. 5
digital do. . . . 3
with speculum. . . 6
sound 11
Expulsion of fibrous tumours. 170

Fergusson's speculum . . 6
Fibrinous polypus . . . 129
Fibro-cystic disease . 122, 340

PAGE.

Fibrous polypus . . . 129
Fibrous tumours of uterus . 133
absorption of . . . 169
avulsion of . . . 147
calcareous deposit of . 170
changes in size of . . 166
in character of . . 169
cysts, development of, in . 169
enucleation of . . . 146
ergot hypodermically in . 151
expulsion of . . . 170
hysterectomy in . . 165
incision of . . . 145
influence of pregnancy on. 166
injections in cases of . 150
intra-mural . . . 138
ovaries, removal of, in . 165
sloughing of . . . 170
spontaneous cure of. . 170
sub-mucous . . . 138
sub-peritoneal . . . 135
surgical treatment . 145, 162
Flexions of the uterus . . 228

Galvanic stem pessary . . 44
Glycerine 24
in uterine diseases . . 182
Gonorrhœa 24
Gooch's cannulæ, Dr. Atthill's modification of . . . 125
Granular erosion of cervix uteri 91
Greenhalgh's stem pessary 64, 247
spring do 245
iodized cotton . . . 190
medicated pessaries. . 27
metrotome . . . 67

Hæmatocele, pelvic . . 244
Hæmorrhage, see menorrhagia
Hewitt's, Dr., speculum. . 7
Hicks', Dr., écraseur . . 122
zinc points . 183, 381
Hildebrandt, Dr., on hypodermic injection of ergotin 151
Hops, infusion of . . 26, 372
Hot water, therapeutic uses of. 360, 368
Hodge's, Dr., pessary . . 244

PAGE.

Hunyadi Janos water . . 391
Hymen, imperforate . . 39
Hypertrophy of uterus . . 291
Hypodermic injection of ergot 151, 384
of morphia . . 53, 388

Ice bags, spinal, in uterine disease 363
Imperforate hymen . . 39
Indian hemp in dysmenorrhœa 388
Induration of cervix, uteri . 190
Inflammation of cervix, acute 172
do., chronic. . 186
Injections, hypodermic, of ergot 151, 384
of morphia . . 53, 388
intra-uterine of iodine . 150
of liq. ferri perchlor . 150
vaginal 367
Intra-uterine applications . . . 83, 198, 375
Iodine, injection of, into ovarian cyst 352
into uterine cavity . 150, 377
Iodoform 389
Inversion of uterus. . . 267
Involution, defective . . 77
Iodized cotton . . . 190
Iodized phenol . . . 376

Kreuznach, waters of, in chronic inflammation of uterus 297
Kuchenmeister's Scissors . 66

Lameness, uterine . . . 236
Laminaria digitata, tents of . 96
Leeches, application of, to cervix uteri 180
Leucorrhœa 18
causes of 21
cervical 29
infantile 28
uterine 30
vaginal 20
injections in . . . 372

Mammæ, reflex irritation of . 242

PAGE.

Masturbation . . . 31
Menorrhagia 72
constitutional causes of . 73
local do . 76
depending on cancer . 76
depending on congestion of ovaries and uterus . 110
on endo-metritis . . 195
on fibrous tumours . . 138
on granular condition of cervix and os uteri . 91
on polypus . . . 119
on retention of portion of placenta . . . 109
on subinvolution . . 76
Menstruation 34
interrupted . . . 46
diminished, *vide* amenorrhœa 36
profuse, *vide* menorrhagia 72
suppressed, *vide* amenorrhœa 36
Mercury in uterine diseases . 387
pernitrate of . . . 377
Metritis, chronic . . . 214
Metorrhagia 72
Metrotome, Greenhalgh's . 67
Dr. Savage's . . . 65
Micturition, frequency of, *vide* "bladder" . . 187, 102
Morphia, hypodermic injection of . . . 53, 388

Nidation 20
Nitrate of silver, solid, use of in subinvolution . 89, 381
Nitric acid, application of, to cavity of uterus . 104, 199, 378
in granular erosion of os . 92

Oakbark, injection of decoction of 373
Œdema of fibrous tumours . 166
Ointments, intra-uterine application of . . . 381
Oöphorectomy . . . 354
Os uteri, pin hole . . . 64
Ovarian dropsy . . . 324
dysmenorrhœa. . . 54

PAGE.

Ovarian tumours, pathology of 325
influence of on life . . 344
symptoms of . . . 334
Ovaries, absence of. . . 36
adenoma of . . . 326
alveolar tumour of . . 326
cystic disease of . . 324
dermoid, cyst of . . 327
diagnosis of tumours of . 339
inflammation of . . 353
prolapsed . . . 355
Ovariotomy, cases of . . 329

Para-metritis . . . 217
Pelvic cellulitis . . . 217
hæmatocele . . . 224
Peritonitis, a cause of enlargement of uterus . . . 290
Peri-metritis 217
Pessaries, flexible stem . . 247
galvanic . . . 44
Greenhalgh's spring. . 245
medicated . . 27, 374
Hodge's, Dr. . . 244
Zwank's 264
Phenol, iodized . . . 376
Phthisis, leucorrhœa in . 21
Pills, purgative . . . 290
Playfair's probes . . . 375
Placental polypus . . . 130
Plugging of vagina . . 391
Polypus, definition of . . 113
cystic 131
fibrinous . . . 129
fibrous 118
mucous 114
operation for removal of . 121
placental . . . 130
symptoms of . . . 119
varieties of . . . 114
Porro's operation . . 315
Porte caustique, uterine . 89
Potassa fusa, application of in chronic cervicitis . . 185
in granular erosion of cervix 92
Pregnancy, influence of, on fibrous tumours . . . 166
sickness of, treatment of 364, 387

PAGE

Prolapsus uteri . . . 261
Pruritus vulvæ . . . 26
Puncturing cervix, mode of 81, 180

Rectocele 265
Retroflexion of uterus . . 229
causes of . . . 232
treatment of . . . 243
Retroversion 249
diagnosis of . . . 259

Savage's, Dr., metrotome . 65
Scissors, Kuchenmeister's . 66
Sea-tangle tents, use of . . 96
Simpson's, Sir James, *porte-caustique* 89
Silver, nitrate of, in subinvolution 89
Sound, the uterine . . 11
method of using . . 13
Spinal bags 361
Speculum, bi-valve . . 7
Duck-bill . . . 8
Fergusson's . . . 6
Hewitt's . . . 7
introduction of . . 8
Sponge-tents . . . 95
Steel-wire, advantages of, for écraseur 124
Sterility due to cervical catarrh 177
to endo-metritis . . 204
Strychnia, action of . . 386
Subinvolution, causes of . 77
menorrhagia, depending on 76
stages of 80
treatment of . . 79, 81
Syringing vagina . . . 366

Tapping, in ovarian dropsy . 350
Tents, sea-tangle . . . 96
sponge 94
Tobacco, infusion of, in vaginitis 26, 372
Tumours, fibrous . . . 133
fibro-cystic . . 169, 340
ovarian 324

PAGE.

Tube for application of nitric acid 104

Ulceration of cervix uteri . 175
Urethra, vascular tumour of . 33
Uterine lameness . . . 236
porte-caustique . . 89
sound 11
therapeutics . . . 357
Uterus, absence of . . 37
anteflexion of . . 259
cavity of . . . 172
displacements of . . 220
dilatation of . . . 94
enlargements of . . 285
exploration of . . 94
fibro-cystic disease of . 169
inversion of . . . 267
fibrous tumours of . . 133
granular condition of cavity of . . . 93
prolapse of . . . 261
rudimentary . . . 38

Vagina, absence of . . 38
atresia of. . . . 39
cancer of. . . . 303
occlusion of . . . 39
mode of plugging . . 391
Vaginal injections, rules for using 367
Vaginismus 32
Vaginitis, acute . . . 23
sub-acute . . . 25
Vomiting checked by morphia hypodermically . . 220, 388
by cold to spine . . 363
Vulsellum 121

Water, cold, therapeutic uses of 258
hot, do., do. . 360, 368
application of, to spine . 361
vaginal injections of . 368
White's repositor . . . 280

Zinc points, Dr. Hicks' . 183, 381
injections . . . 372
Zwank's Pessary . . . 264

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