

Observations on abortion : containing an account of the manner in which it is accomplished, the causes which produced it, and the method of preventing or treating it / by John Burns.

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ON
ABORTION.

CONTAINING

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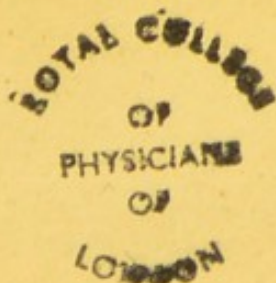
BY JOHN BURNS,

LECTURER ON MIDWIFERY, AND MEMBER OF THE FACULTY OF
PHYSICIANS AND SURGEONS IN GLASGOW.

LONDON:

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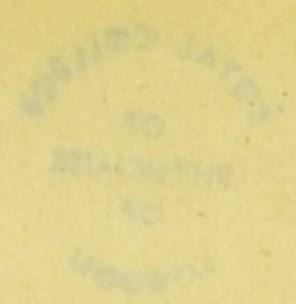
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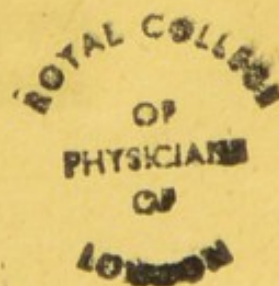
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1808



TO
THE GENTLEMEN
WHO ATTENDED THE AUTHOR'S
LECTURES
IN THE SESSION
1802—3,
THIS BOOK IS INSCRIBED,
AS A
GRATEFUL AND AFFECTIONATE
REMEMBRANCE
OF THE
VERY FLATTERING COMPLIMENT
WHICH THEY
BESTOWED UPON
HIM.



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OBSERVATIONS

ON

ABORTION.

BY abortion is generally understood the expulsion of the contents of the gravid uterus, at a period of gestation so early as to render it impossible for the foetus to live. It is an accident or disease which is very frequent in its occurrence, which is always attended with disagreeable circumstances, and which, although it seldom prove immediately fatal, may yet be productive of much mischief at a future

time. The consideration, therefore, of the manner in which it takes place, of the causes which give rise to it, and of the most likely means of preventing it, or of obviating those unpleasant symptoms which accompany it, must form a subject of very great importance to the medical student. But before proceeding to consider these points, it will be necessary to understand the structure and formation of the ovum, which I shall, therefore, first of all explain.

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*Of the Formation of the Ovum.*

THE human uterus, in the unimpregnated state, consists of a succulent substance, in which we may perceive fibres



running in every direction. In the interstices of these we find a serous fluid, which can easily be squeezed out. By injecting the vessels finely with size or mercury, we observe them to be numerous intermixed with the fibres, but very small. A portion of these vessels follow an irregular course toward the inner surface or cavity of the uterus, and open there upon the membrane which lines it. At the menstrual period the vessels enlarge or dilate a little, and their orifices become more distinct over the surface of the cavity, as may be ascertained by inspecting those who have died at this time. Sometimes a slight temporary serous secretion precedes the flow of the menses, and succeeds it. More frequently the vessels yield a bloody fluid at once, which continues a certain number of days.—When impregnation takes place, the vessels enlarge still more; and we can



observe small trunks forming in the substance of the uterus, the largest of which are at the two sides where the spermatic and hypogastric branches meet\*. The old fibres are more separated, and new ones added, especially at the fundus.—The quantity of interstitial fluid is also increased, so that the uterus becomes manifestly softer. The vessels, as they enlarge, tend to the uterine cavity; but instead of opening there, and yielding a fluid, as in menstruation, they either elongate themselves, or, which is more probable, form new and very delicate vessels, which project from the inner surface of the uterus, giving it an ap-

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\* Both arteries and veins enlarge, but the latter increase more rapidly in size than the former, so much so, that even before the descent of the ovum into the uterus, and while the viscus is not itself materially enlarged, the renous system has assumed the appearance of sinews, each branch being larger than a goose quill.



pearance as if covered with down. This takes place first and chiefly at the fundus, and, in a slighter degree, immediately above the narrow cervix, whilst the intermediate body remains still quite smooth.

These vessels project for about a line in length, at right angles, from the surface which yields them; and as they consist of arteries and veins, the down, or efflorescence, which they form, has, after death, a striated or radiated appearance, the empty arteries being white, the fuller veins black or red. These vessels constitute the outer layer of the decidua, or what may be called decidua striata, although the stria be obliterated as gestation advances.



Almost immediately after the formation of these primary vessels, they secrete from their extremities a membrane, or rather an irregular tissue of vessels, which, on account of their origin, may be called secondary. These assume a direction at right angles to those which formed them, so that they cross the stria or primary vessels, and therefore any body coming down through the first set of vessels, must, before it can get into the cavity of the uterus, either rupture this secondary organ, or push it before it. It is in this manner that the inner layer of decidua is formed, part of which is afterwards protruded before the vesicular ovum, constituting decidua reflexa, or protrusa.

The primary vessels adhere pretty closely together at their roots, but are



more loose or separated at their termination. They are at first only yielded by the fundus, and in a small degree by the surface, immediately above the cervix, whilst the cervix itself produces from the lacunæ, which are increased in magnitude, a jelly, which sometimes fills up the os uteri completely; at other times there is only a small quantity formed in the cervix, leaving the os uteri quite patent. The inferior part of the uterine surface, which yields the primary vessels, is not a quarter of an inch in breadth; and the cavity being there small and narrow, the vessels from the opposite sides soon come in contact, and intermix without forming any secondary vessels. This portion may be called the cervical efflorescence.

The secondary vessels are very dif-



ferent from the primary ; for, whilst the latter are short, straight, and parallel to each other, the former are more extended, intermix, and ramify together, so as to form an irregular tissue or sheet of vascular substance, the fibres or vessels of which assume a direction at right angles to the down or primary vessels which formed them. This direction seems to be very naturally produced by the weight of the secondary vessels, which makes them hang down or point to the os uteri. Very soon we can perceive ragged irregular processes, hanging into the cavity of the uterus, and extending toward the cervix, so that this layer of decidua presently appears to consist of a number of torn floating membranes, like portions of spiders' webs, pendulous in the uterine cavity ; but nearer examination shews that there has been no laceration,



the margins being smooth and well defined. These I would call the processes of the decidua interna.

Such is the structure of the decidua externa and interna, at three weeks or a month after impregnation; and at this period no foetus is in the uterus. In one case I detected the vesicular ovum in the tube. It was about half way betwixt the two extremities, was rather smaller than a full-grown pea, and contained a little fluid. In another case I found it still in the ovarium, covered by the fimbriated extremity of the tube. By puncturing the peritoneal coat of the gland, the vesicle escaped.

It has been the general opinion, since the time of Dr. Hunter, that the decidua extended a little way into the tube; and on his authority I stated this to be the



case in an account which I formerly published. By careful examination, I am now convinced that this is not the case. My brother, in his dissections, even thought that the uterine extremity of the tube was less changed in point of vascularity, than any other part of it.

When the foetus does descend into the uterus, it is contained in a double membrane. The internal one is the amnion, and possesses no distinct vessels. The external one is the chorion, and is from the first vascular, and soon becomes so much so, that its vessels have by some been described as forming a distinct tunic.

From what has been said, it will be evident, that, when this vesicle does



reach the uterus, it will be received amongst the primary vessels which will surround it, whilst the secondary vessels, or decidua interna, will lie before it, and prevent any communication betwixt it and the uterine cavity. But it cannot remain long thus; for, in proportion as the vesicular part of the ovum increases, it will push the decidua interna before it, and encroach upon the cavity of the uterus. This circumstance, together with the intimate connection formed betwixt the vessels of the chorion and those of the decidua, with the consequent production of a placenta, I have already very fully detailed in a former publication, to which I refer\*.

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\* Vide Anatomy of the gravid uterus, with practical inferences relative to pregnancy and labour.



When the ovum descends, and the subsequent changes are beginning to take place, the body of the uterus comes also to form decidua; for I have formerly said, that, until the foetus comes into the uterus, the fundus alone yields this production. At the same time, the processes of the decidua interna elongate still more, and, together with those which are now formed by the portion produced by the newly-formed decidua externa (for additional primary vessels imply additional secondary ones) at the lower part of the uterus, will come to fill up all the intervening space betwixt the bottom of the chorion or decidua reflexa and the cervical efflorescence; so that, by the end of the second or beginning of the third month, the cavity of the uterus is quite filled, and we have the ovum perfectly organized. We have



the foetus inclosed in its membranes, and swimming in water; we have the placenta thick and well formed, and large in proportion to the membranes; we have the decidua reflexa distinctly seen, and the lower part of the uterus filled with the two layers of decidua, and the processes of the internal one.

If at this time we take the ovum, composed of all these different parts, out of the uterus; or, if we cut off the face of the uterus, and remove the decidua from the front of the membranes, we shall see at the upper part the placenta and membranes like an old fashioned watch, the placenta resembling the case, and the membranes (when the decidua is taken off) the glass of the watch\*;

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\* The placenta, contrary to some plans, is not



then, at the lower part of the membranes, we see the remains or margins of the decidua reflexa, which has been removed to shew the chorion; whilst, still lower down, we observe the decidua externa, and the processes of the interna, filling up the cervix and inferior part of the body of the uterus, forming a kind of firm stalk to the globe above. This stalk is thick, so as to occupy all

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formed exactly at the fundus uteri, stretching equally down on the two faces of the uterus, with the membranes hanging perpendicularly from it. But it lies chiefly on one face of the uterus, whilst the membranes are turned to the other. The centre of the membranous bag, therefore, at this early period, is not directed to the os uteri, but either to the fore or back part of the uterus. In proportion, however, as the bag enlarges, it elongates, its centre, or apex, descends, and ultimately corresponds with the long axis of the uterus.



the lower part of the uterus; but the layers and processes, furnished by the different sides, do not adhere when they meet in the axis of the uterus; but we have always a small canal or perforation leading up in the axes of the uterus from the cervical efflorescence, or the gelatinous plug, to the bottom of the decidua reflexa.

In proportion as the membranes enlarge and elongate, the decidua reflexa gradually protrudes before them down this canal, until at last it reaches the bottom; or, in other words, the membranes come to occupy all the uterine cavity.



*Of the Manner in which Abortion  
takes place.*

THE process of gestation may be stopped, even before the foetus, or vesicular part of the ovum, has descended into the uterus, and when only the primary vessels are formed. In this case, which occurs within three weeks after impregnation, the symptoms are much the same with those of menorrhagia. There is always a considerable, and often a copious discharge of blood, which coagulates or forms clots. This is accompanied with marks of uterine irritation, such as pain in the back and loins, frequently spasmodic affections of the bowels, and occasionally a slight febrile state of the system. In plethoric habits, and



when abortion proceeds from over-action, or hemorrhagic action of the uterine vessels, the fever is idiopathic, and precedes the discharge.

In other circumstances it is either absent, or, when present, it is symptomatic, and still more inconsiderable, arising merely from pain or irritation. As the primary vessels are very small, and are soon displaced, they cannot be detected in the discharge. Nothing but coagulum can be perceived; and this, as in other cases of uterine hæmorrhage, is often so firm, and the globules and lymph so disposed, as to give it, more especially if it have been retained for some time about the uterus or vagina, a streaked or fibrous appearance, which sometimes gives rise to a supposition, that it is an organized substance. The dis-



charge does not cease, when the primary vessels are destroyed, but generally continues until the small vesicle passes out of the fallopian tube. Then it stops, and an oosing of serous fluid finishes the process.

The only interruption to the discharge in this case of abortion, proceeds from the formation of clots, which, however, are soon displaced. Women, if plethoric, sometimes suffer considerably from the profusion of the discharge; but, in general, they soon recover.

When the secondary vessels are formed, the symptoms are still pretty much the same; but if the vesicle have descended into the uterus, they are somewhat different. We have an attempt in the uterus to contract, which formerly



was not necessary ; we have pains more or less regular in the back and hypogastric region ; we have more disturbance of the abdominal viscera, particularly the stomach. The discharge is copious, and small bits of fibrous substance can often be observed\*.

Sometimes, when the vesicle has come

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\* In some instances, the uterus seems to have the power of forming a vascular substance from its inner surface, although impregnation have not taken place ; and, in this case, we may have the symptom of early abortion attending its expulsion. But much oftener we find that this appears as a derangement of the menstrual action, the vessels secreting a semi-organized substance, instead of the usual quantity of bloody fluid ; hence, as has been observed by that ingenious and excellent practitioner, Dr. Denman, we have sparing and painful menstruation.



into the uterus, before abortion takes place, it may be detected in the first discharge of blood, and will be found to be streaked over with pale vessels, giving it an appearance as if it had been slightly macerated. When all the contents are expelled, a bloody discharge continues for a few hours, and is then succeeded by a serous fluid at this time; and, in later abortion, if the symptoms come on gradually, we may sometimes observe a gelatinous matter to come away before the hæmorrhage appears.

If the uterus have been filled up, as in the beginning of the third month, the vesicle never escapes first; but we have for some time a discharge of blood, accompanied or succeeded by uterine pain. Then the inferior part or stalk of the ovum is expelled, gorged with blood,



and afterwards the upper part equally injured. Sometimes the whole comes away at once and entire; but this is rare. As considerable contraction is now required in the uterus, the pains are pretty severe. The derangement of the stomach is also greater than formerly, giving rise to sickness or faintness, which is a natural contrivance for abating the hemorrhage.

When the membranes come to occupy more of the uterus, and a still greater difference to exist betwixt the placenta and decidua, we have again a change of the process; we have more bearing down pain, and greater regularity in its attack; we have a more rapid discharge, owing to the greater size of the vessels; but there is not always more blood lost now than at an earlier



period, for coagula form readily from temporary fits of faintness and other causes, and interrupt the flow until new and increased contraction displaces them: Often the membranes give way, and the foetus escapes with the liquor amnii, whilst the rest of the ovum is retained for some hours or even days, when it is expelled with coagulated blood separating and confounding its different parts or layers. At other times the foetal and maternal portions separate, and the first is expelled before the second, forming a very beautiful preparation. In some rare instances we find the whole ovum expelled entire, and in high preservation. After the expulsion, the hemorrhage goes off, and is succeeded by a discharge somewhat resembling the lochia.



In cases of twins, after one child is expelled, either alone or with its secundines, the discharge sometimes stops, and the woman continues pretty well for some hours, or even for a day or two, when a repetition of the process takes place, and if she have been using any exertion, there is generally a pretty rapid and profuse discharge. This is one reason, amongst many others, for confining women to bed for several days after abortion.

There is generally, for a longer or shorter time before the commencement of abortion, a pain and other irregular actions in the neighbouring parts, which give warning of its approach before either discharge or contraction take place, unless when it proceeds from violence, in which case the discharge may in-



stantly appear. This is the period at which we can most effectually interfere for the prevention of abortion.

I need not be particular in adding, that we are not to confound these symptoms with the more chronic ailments which accompany pregnancy. Similar disturbances in the action of the neighbouring parts are every commonly found to precede labour at the full time; and even then we may, by proper means, postpone or retard expulsion for some hours or days.

A great diversity obtains in different instances with regard to the symptoms and duration of abortion. In some cases the pains are very severe and long continued; in others, short and trifling. Sometimes the hæmorrhage is profuse



and alarming : at other times, although circumstances may not be apparently very different, it is moderate or inconsiderable. Often the sympathetic effects on the stomach and bowels are scarcely productive of inconvenience, whilst in a greater number of instances they are very prominent symptoms.

I may only add, that, *cæteris paribus*, we shall find that the farther that the pregnancy is advanced beyond the third month, and the nearer it approaches to the end of the sixth, the less chance is there of abortion being accompanied, but the greater of its being succeeded, by nervous affection.

As there is a diversity in the symptoms, so is there also in the duration of abortion ; for, whilst a few hours in



many, and not above three days in the majority of cases, is sufficient to complete the process, we find other instances in which it is threatened for a long time, and a number of weeks elapse before the expulsion take place.



*Of the Causes giving rise to  
Abortion.*

ABORTION may very properly be divided into accidental and habitual. The exciting causes of the first class may, in general, be easily detected; those giving rise to the second are often more obscure; and, without great attention, the woman will go on to miscarry, until



either sterility, or some fatal disease, be induced.

In many cases there can be no peculiar pre-disposing cause of abortion: as, for instance, when it is produced by blows, rupture of the membranes, or accidental separation of the decidua: but when it occurs without any very perceptible exciting cause, it is allowable to infer, that some pre-disposing state exists; and this generally consists in an imperfect mode of uterine action, induced by age, former miscarriages, and other causes.

It is well known, that women can only bear children until a certain age; after which, the uterus is no longer capable of performing the action of gestation, or of performing it properly. Now,



it is observable, that this incapability or imperfection takes place sooner in those who are advanced in life, before they marry, than in those who have married and begun to bear children earlier. Thus we find, that a woman who marries at forty, shall be very apt to miscarry; whereas, had she married at thirty, she might have born children when older than forty; from which it may be inferred, that the organs of generation lose their power of acting properly sooner, if not employed, than in the connubial state.

The same cause which tends to induce abortion at a certain age in those who have remained until that time single, will also, at a period somewhat later, induce it in those who have been younger married: for in them we find, that, after



bearing several children, it is not uncommon to conclude with an abortion; or, sometimes after this incomplete action, the uterus, after a considerable time, recruits, as it were, and the woman carries a child to the full time, after which she ceases to conceive.

In the next place, I mention that one abortion paves the way for another, because, setting other circumstances aside, it gives the uterus a tendency to stop its action of gestation at an early period after conception, and therefore it is difficult to make a woman go to the full time, after she has miscarried frequently.

We also find that an excessive or indiscriminate use of venery either destroys the power of the organs of gene-



ration altogether, making the woman barren, or it disposes to abortion, by enfeebling these organs.

Some slight change of structure in part of the uterus, by influencing its actions, may, if it do not prevent conception, interfere with the process of gestation, and produce premature expulsion. If, however, the part affected be very small, and near the os uteri, it is possible for pregnancy to go on to the full time. Indeed, it generally does go on, and the labour, as may be foreseen, will be very tedious; but the operation of cutting the indurated os uteri, which has been proposed, is seldom necessary.

I have known one instance, in which a very considerable part of the uterus, I may say almost the whole of



it, was found, after delivery, to be extremely hard, and nearly ossified: but this state could not have existed before impregnation took place, for I cannot conceive that so great a proportion of the uterus should have been originally diseased, and yet that conception, and its consequent actions, should take place; but there is no difficulty in supposing, that, during the enlarging of the uterus, the vessels deposited osseous or cartilaginous matter, instead of fibres. In this case, it is evident that the delivery must be instrumental, owing to the deficiency of fibres, and recovery can seldom take place. Often we find this morbid action affect the placenta, instead of the uterus; but this is not dangerous.

A general weakness of the system, which must affect the actions of the ute-



rus, in common with those of other organs, is likewise to be considered as giving rise to abortion, though not so frequently as was at one time supposed. The uterus is not only affected by the general conditions of the system, more especially with regard to sensibility, and the state of the blood-vessels; but it likewise sympathizes with the principal organs, and may undergo changes in consequence of alterations in their state.

Thus we often find that loss of tone, or diminished action of the stomach, produces amenorrhœa; and it may also on the same principle induce abortion; on the other hand, the action of the uterus may influence that of other viscera, as we see in pulmonary consumption, which is sometimes suspended in its progress during pregnancy; or, if there be



any disposition in an organ to disease, frequent abortion, partly by sympathy betwixt the uterus and that organ, and partly by the weakness which it induces, and the general injury which it does to the system at large, may excite the irregular or morbid action of the organ so disposed.

As the action of the uterus is increased during pregnancy, it must require more nervous energy; but the size of the nerves of the uterus is not increased in proportion to the action; we must therefore depend for the increased supply upon the trunks, or larger portion of nervous substance, from which they arise, for we well know that the quantity of energy expended in an organ, does not depend upon the size of the



nerve in its substance, but on the trunk which furnishes it. Whenever action is increased in an organ, it must either perish, or the larger nerve must send the branches more energy, for the branches themselves cannot form it, their extremities being only intended for expanding it: from which it follows, that in pregnancy there must be more energy sent to the uterus, and less to some other part.

This is the case with all organs whose action is increased, other parts being deprived in proportion as they are supplied, except when irritation raises general action above the natural degree; the consequence of which is, that the power is not sufficient for the action, which becomes irregular, and the sys-



tem is exhausted, as we see in febrile conditions\*.

There being increased action of the uterus in gestation, requiring an increased quantity of energy to support it, we find that the system is put *pro tempore* into an artificial state, and obliged either to form more energy, which cannot be so easily done, or to spend less in some other part. Thus the function of nutrition, or the action by which organic matter is deposited, in room of that which is absorbed, often yields, or is lessened, and the person becomes emaciated, or the stomach has its action di-

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\* For a fuller explanation and defence of this doctrine, I beg leave to refer the reader to some observations on the animal economy, prefixed to the first volume of my Dissertation on Inflammation.



minished, or the bowels producing costiveness and inflation. If no part give way, and no more energy than usual be formed, gestation cannot go on, or goes on imperfectly. Hence some women have abortion induced by being too vigorous ; that is to say, all the organs persist in keeping up their action in perfection and complete degree.

A tendency to abortion also results from a contrary cause, from organs yielding too readily, allowing the uterus to act too easily. In this state it is as liable to go wrong, as the general system is when it is at the highest degree of action, compatible with health, the most trifling cause deranges it. Thus, sometimes, the intestines yield too readily, and become almost torpid, so that a stool can with difficulty be procured.



Here costiveness is not a cause of abortion, though it may be blamed. In like manner, the muscular system may yield and become enfeebled; and in this instance debility is accused as the cause of abortion, although it be, indeed, only an effect of too much energy being destined for the uterus. In this case, the woman is always weaker during menstruation and gestation than at other times.

Now this is not a piece of idle speculation, but is of much practical importance, especially in considering the means of correcting habitual abortion; and much attention should be paid to the state of the principal organs in the body; for, if we confine our attention merely to the uterus, we shall often fail when otherwise we might succeed; and



it will be necessary to remember, that the chain of sympathies in gestation is often extensive and complicated.

The state of the stomach, for example, may give rise to head-ach, tooth-ach, &c. and often it is dangerous suddenly to remove these remote effects. It throws too much energy to the uterus; its action is too much exerted; contraction and abortion take place: but in the unimpregnated state, the removal of these effects may, on the contrary, be useful: thus the pulling of a pained tooth sometimes speedily produces the return of the menses in cases of obstruction,

If the neighbouring parts do not accommodate themselves to the changes in the direction of energy, and act in



concert with the uterus, their action becomes irregular, and consequently painful. In this case the uterus may have its just degree of power and action ; but other parts may not be able to act so well under the change of circumstances. This is chiefly the case in early gestation, for, by time, the parts come to act better. It often gives rise to unnecessary alarm, being mistaken for a tendency to abortion ; but the symptoms are different. The pain is felt chiefly at night, a time at which weakened parts always suffer most ; it returns pretty regularly for several weeks, but the uterus continues to enlarge, the breasts to distend, and all things are as they ought to be, if we except the presence of the pain. This may be alleviated sometimes by anodynes, but can only be cured by time, and avoiding, by means of rest



and care, any additional injury to parts already irregular and ticklish in the performance of their actions. If this be neglected, they will re-act on the uterus at last, and impede its function.

Even although the different organs, both near and remote, may have accommodated themselves to the changes in the uterine action, in the commencement of gestation, the proper balance may yet be lost at a subsequent period; and this is most apt to take place about the end of the third, or beginning of the fourth month, when the uterus is rising out of the pelvis; and hence a greater number of abortions takes place at that time than at any other stage of pregnancy. There is from that time, to the period of quickening, a greater susceptibility in the uterus to have its action



interrupted, than either before or afterwards, which points out the necessity of redoubling our vigilance in watching against the operation of any of the causes giving in to abortion from the tenth to the sixteenth week.

If the uterus, in its unimpregnated state, become very torpid, as in some cases of amenorrhœa, the abdominal muscles sometimes have their action much increased; and there is absolutely an attempt made to expel it, violent paroxysms of contraction coming on, and repeated daily for a length of time.

These may be lessened by opiates, but can only be cured by exciting the natural action of the uterus. I mention this fact, from its singularity, although it do not immediately refer to abortion.



If the action of gestation go on under restraint, as, for instance, by a change of position in the uterus, or by its prolapsing too low in the vagina, it is very apt to be accompanied by uneasy feelings, for, whenever any action is constrained, sensation is produced. The woman feels irregular, and pretty sharp pains in the region of the uterus, and from sympathetic irritation both the bladder and rectum may be affected, and occasionally a difficulty is felt in making water, by which a suspicion is raised that retroversion is taking place.

Sometimes the cervical vessels in these circumstances yield a little blood, as if abortion were going to happen; but by keeping the patient at rest, and attending to the state of the rectum and blad-



der, no harm is done: and when the uterus rises out of the pelvis, no farther uneasiness is felt.

Retroversion of the uterus likewise constrains very much its action, and may give rise to abortion, though in a greater number of instances, by care, gestation will go on, and the uterus gradually ascend.

Sometimes in irritable or hysterical habits, the process of gestation produces a considerable degree of disturbance in the actions of the abdominal viscera, particularly the stomach, exciting frequent and distressing retching or vomiting, which may continue for a week or two, and sometimes is so violent, as to invert the peristaltic motion of the intestines near the stomach, in which case



feculent matter, and, in some instances, lumbrici, are vomited.

This affection is often accompanied by an unsettled state of mind, which adds greatly to the distress. We sometimes, in these circumstances, have painful attempts made by the muscles to force the uterus downward, and these are occasionally attended by a very slight discharge of blood. We have, however, no regular uterine pain; and, if we are careful of our patient, abortion is rarely produced.

The best practice is to take away a little blood at first, to keep the bowels open, to lessen the tendency to vomit, by applying an opium plaster, or a small blister, to the region of the stomach, and to allay pain by doses of hyocyamus



or opium, conjoined with carminatives. When the mind is much affected, or the head painful, it is proper to shave the head, and wash it frequently with cold vinegar, or apply a blister at the same time that we keep the patient very quiet, and have recourse to a soothing management.

The uterus being a large vascular organ, is obedient to the laws of vascular action, whilst the ovum is more influenced by those regulating new-formed parts; with this difference, however, that new-formed parts or tumors are united firmly to the part from which they grow by all kinds of vessels, and generally by fibrous or cellular substance, whilst the ovum is united to the uterus only by very tender and fragile arteries and veins. If, therefore, more



blood be sent to the maternal part of the ovum, than it can easily receive and circulate and act under, rupture of the vessels will take place, and an extravasation and consequent separation be produced ; or, even when no rupture is occasioned, the action of the ovum may be so oppressed and disordered, as to unfit it for continuing the process of gestation. There must, therefore, be a perfect correspondence betwixt the uterus and the ovum, not only in growth and vascularity, but in every other circumstance connected with their functions.

Even when they do correspond, if the uterus be plethoric, the ovum also must be full of blood, and rupture very apt to take place ; and this is a frequent cause of abortion, more especially in those who menstruate copiously. On



the other hand, when the uterus is deficient in vascularity, which often happens in those who menstruate sparingly or painfully, the child generally dies before the seventh month, and is expelled. The process is prematurely and imperfectly finished.

Abortion necessarily implies separation of the ovum, which may be produced mechanically or by spontaneous rupture of the vessels, or by an affection of the muscular fibres. It unavoidably requires, for its accomplishment, contraction of those fibres which formerly were in a dormant state. A natural and necessary effect of this contraction is to develope the cervex uteri.

This, when gestation goes on regularly, is accomplished gradually and



slowly by the extension and formation of fibres. In abortion, no fibres are formed; but muscular action does all, except in those instances where the action of gestation goes on irregularly and too fast; in which case the cervix distends, sometimes by the third month, by the same process which distends the fundus. But much more frequently the cervix only relaxes during abortion, as the os uteri does in natural labour, and yields to the muscular action of the fundus, or distended part.

The existence and growth of the fœtus depends on the fœtal portion of the ovum. The means of nourishment, and the accommodation of the fœtus in respect of lodgement, depend on the uterus; and these circumstances requiring both fœtal and maternal action, are inti-



mately connected. The condition of the uterus qualifying it to enlarge, to continue the existence and operation of the maternal portion of the placenta or ovum, and to transmit blood to the ovum, exactly in the degree correspondent to its wants, constitutes the action of gestation.

When this condition ceases, then muscular contraction begins, provided the cessation be universal in the uterus. This is necessary, for as the foetal and maternal actions are dependent on each other, the foetus would suffer if it were not expelled. The injury, indeed, will not be immediate; otherwise, in labour, the child would die before it could be born, because labour implies a cessation of the action of gestation. On the other hand, the loss of action in the foetal part will



soon influence the maternal part, and stop its action.

In labour, and at other times, when the action of gestation ceases, the circulation is still kept up in the maternal vessels of the placenta, until either separation and expulsion take place, or the vessels suffer so much as to cease to transmit blood. The cessation of action then does not necessarily immediately affect the foetus. As long as it, and the foetal portion of the ovum connected with it, remain stationary, the same quantity of blood will do. But the uterus cannot now increase its actions along with those of the foetus, so as gradually to enlarge and send more blood.

This is one cause of disagreement. Another is, that, in consequence of ces-



sation of action in the uterus, the maternal portion of the placenta or ovum ultimately suffers, and flags or decays, whilst the foetal portion must sympathize with it.

From this it results, first, that even in tedious labour the child does not die: secondly, that when the action ceases in the early months of pregnancy, the foetus does not instantly die, nor abortion immediately take place: thirdly, but it invariably happens, that, at whatever period the action ceases, the foetus will, if not expelled within a certain time, perish.

I have elsewhere\* endeavoured to

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\* Vide Dissertations on Inflammation, Vol. I.



prove, that we have a certain quantity of action present in the system at large, and properly distributed amongst the different organs, forming an equilibrium of action ; and that if one organ act in an over degree, another, which is connected with it, will have its action lessened, and *vice versa*.

The same holds true with regard to different actions belonging to the same organ ; and the fact is of considerable importance, both in explaining and curing diseases. During pregnancy, the muscular fibres of the uterus are dormant, possessing no contractile action ; at least, none qualifying them for contracting, so as to make the uterus smaller.

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I doubt much if even the individual



fibres possess a power of alternately contracting and relaxing, as in other muscles, in any degree whatever. But, whenever the action of gestation ceases, action is communicated to these fibres; and whenever this loss on the one part, and gain upon the other, is universally begun in the womb, the transference will be completed, and the ovum can no longer be preserved in the uterus.

The loss of action is generally speedy, when once begun. Perhaps in most instances it takes place instantaneously, and then the fibres begin individually to act; but they may not, for some hours, contract universally, and all at one and the same time producing pains.

But if some other organ shall receive the surplus of action, or the transferred



action, then the uterine fibres either will not contract, or will receive an inferior and insufficient degree of action, and expulsion will not take place until the organ sympathizing shall cease to have the increased action, whether it be the brain, the stomach, or the external muscles of the body. Sometimes also the action seems to be divided betwixt the uterus and other organs, or they alternate in their actions.

This fact is of importance in explaining and correcting many of the irregularities attending labour, which it would be impossible here to specify,

Sometimes the action is chiefly communicated to one part of the uterine fibres, whilst the rest are more torpid; and this part contracts in an undue de-



gree, clasping the child firmly, and retarding labour\* ; and, after expulsion, it is apt to return, and retain the pla-

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\* This contraction is sometimes so firm after the membranes have burst, as to produce the same effect upon the child, as the natural pains would have done had the pelvis been deformed ; that is to say, the presentation becomes unshapely, and the part below the stricture is swelled and livid. This spasm, like that which sometimes retains the placenta, is very difficult to be relaxed, and, in general, requires artificial management. If it come on at the full time, before the membranes break, it may give such a feeling to the lower part of the ovum, as to make it resemble a preternatural presentation, although the head really present. In this case, the band is generally pretty broad, but its contraction is not violent. It has the effect, however, of retarding labour, until we break the membranes, which excites a more general and effective action in the uterine fibres.



centa, whilst the rest of the uterus becomes torpid, producing flooding.

If, then, the action of gestation cease universally in the uterus, another action, namely, muscular contraction, begins, and then all hope of retaining the ovum any longer is at an end. I know that we have been told of instances where contraction, after beginning, stopped for several weeks.

The os uteri may be prematurely developed ; it may be open for some weeks, even without pain ; but no man will say that, in this case, labour or uterine contraction has begun. We may even have partial muscular action, in a few very rare cases, about the os uteri, which has less to do with the action of gestation than any other part of the uterus ;



but regular and universal action of the muscular fibres never yet has been stopped. It may, like other muscular actions, be suspended by anodynes or artificial treatment; but it never has, and never can be stopped, otherwise than by the expulsion of the ovum, when a new train of actions commence.

Whenever, then, at any period of pregnancy, we have paroxysms of pain in the back, and region of the uterus, more especially if these be attended with feeling of weight in that region, tenesmus, micturation, descent of the uterus in the pelvis, and opening of the os uteri, we may be sure that expulsion, though retarded, will soon take place.

This fact is not always attended to in abortion, for many think that if by ano-



dynes they can abate the pain, they will make the woman go to the full time.— This is true, with regard to many painful sensations, which may attend a threatened abortion, or which may be present, although there be no appearance of abortion; but it does not hold with regard to those regular pains proceeding from universal action of the uterine fibres; and we may save both ourselves and our patients some trouble, by keeping this in remembrance.

Seeing, then, that contraction is brought on by stopping the action of gestation, and that when it is brought on it cannot be checked, nor the action of gestation restored, we must next enquire how this action may be stopped. I have already mentioned several circumstances affecting the uterus, and



likely to injure its actions ; and these I shall not repeat, but go on to notice some others, which are often more perceptible ; and first I shall mention violence, such as falls, blows, and much fatigue, which may injure the child, and detach part of the ovum.

If part of the ovum be detached, we have not only a discharge of blood, but also the uterus, at that part, suffers in its action, and may influence the whole organ, so as to stop the action universally. But the time required to do this is various, and opportunity is often given to prevent the mischief from spreading, and to stop any farther effusion—perhaps to accomplish a re-union.

Violent exercise, as dancing, for instance, or much walking, or the fatigu-



ing dissipations of fashionable life, more especially in the earlier months, by affecting the circulation, may vary the distribution of blood in the uterus, so much as to produce rupture of the vessels, or otherwise to destroy the ovum. There is also another way in which fatigue acts, namely, by subducting action and energy from the uterus: for the more energy that is expended on the muscles of the inferior extremities, the less can be afforded or directed to the uterus; and hence abortion may be induced at an early stage of gestation\*.

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\* The same effect is observable in the stomach and other organs. If a delicate person, after a hearty meal, use exercise to the extent of fatigue, he feels that the food is not digested, the stomach having been weakened or injured in its actions,



Even at a more advanced period, inconvenience will be produced upon the principle formerly mentioned ; for the nerves of the loins conveying less energy, in many instances, though not always to the muscles, they are really weaker than formerly, and are sooner wearied, producing pain, and prolonged feeling of fatigue, for many days, after an exertion which may be considered as moderate.

This feeling must not be confounded with a tendency to abortion, though it may sometimes be combined with it, for generally by rest the sensation goes off. Neither must we suppose that the child is dead, from its being usually quiet during that period, for as soon as the uterus, which has been a little impaired in



its action, recovers, it moves as strongly as ever.

In the next place, I mention the death of the child, which may be produced by syphilis, or many diseases perhaps peculiar to itself, or by injury of the functions of the placenta. But in whatever way it is produced, the effect is the same in checking the action of gestation, unless there be twins, in which case it has been known that the uterus sometimes did not suffer universally, but the action went on, and the one child was born of the full size, the other small and injured\*.

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\* It has even been known, that, in consequence of the death of one child, the uterus has suffered partially, and expulsion takes place; but the other child continuing to live, has preserved the action of



The length of time required for producing abortion from this cause is various ; sometimes it is brought on in a few hours : at other times not for a fortnight, or even longer. In these and similar cases, when the muscular action is commencing, the discharge is trifling, like menstruation, until the contraction becomes greater, and more of the ovum be separated.

A third cause is a disproportioned action betwixt the uterus and ovum, the

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gestation in that part of the uterus, which, properly speaking, belonged to it, and pregnancy has still gone on. This, however, is an extremely rare occurrence ; for, in almost every instance, the death of one child produces an affection of the action of gestation in the whole uterus, and the consequent expulsion of both children.



one not increasing in the same ratio with the other, yet both continuing to act. This is productive of frequent discharges of blood, repeated at different, but always at short intervals, for several weeks, until at length the uterus suffers so much, that its action stops, or the foetus dies.

Another cause is, any strong passion of the mind. The influence of fear, joy, and other emotions on the muscular system, is well known; and the uterus is not exempted from their power; any sudden shock, even of the body, has much effect on this organ. The pulling of a tooth, for instance, sometimes suddenly produces abortion.

Emmenagogues, or acrid substances, such as savine and other irritating drugs, more especially those which tend to ex-



cite a considerable degree of vascular action, may produce abortion.

Such medicines, likewise, as exert a violent action on the stomach or bowels will, upon the principle formerly mentioned, frequently excite abortion; and very often are taken designedly for that purpose in such quantity as to produce fatal effects; and here I must remark, that many people at least pretend to view attempts to excite abortion as different from murder, upon the principle that the embryo is not possessed of life, in the common acceptation of the word. It undoubtedly can neither think nor act; but, upon the same reasoning, we should conclude it to be innocent to kill the child in the birth.

Whoever prevents life from continuing, until it arrive at perfection, is cer-



tainly as culpable as if he had taken it away after that had been accomplished. I do not, however, wish, from this observation, to be understood as in any way disapproving of those necessary attempts which are occasionally made to procure premature labour, or even abortion, when the safety of the mother demands this interference, or when we can thus give the child a chance of living, who otherwise would have none.

If any part with which the uterus sympathizes have its action greatly increased during pregnancy, the uterus may come to suffer, and abortion be produced. Hence the accession of morbid action or inflammation in any important organ, or on a large extent of cuticular surface, may bring on miscarriage, which is one cause why small-pox often excites abortion, whilst the



same degree of fever, unaccompanied with eruption, would not have had that effect.

Hence also increased secretory action in the vagina, if to a great degree, though it may have even originally been excited in consequence of sympathy with the uterus, may come to incapacitate the uterus for going on with its actions, and therefore it ought to be checked by means of an astringent injection.

In this case the uterus has, without any proof, been supposed to become too much relaxed, whilst in other cases, as for instance when the abdomen was harder than usual, it has with as little foundation been supposed to be preternaturally rigid.



Mechanical irritations of the os uteri, or attempts to dilate it prematurely, will also be apt to bring on muscular contraction. At the same time, it is worthy of remark, that the effect of these irritations is generally at first confined to the spot on which they act, a partial affection of the fibres in the immediate vicinity of the os uteri being all that is, for some time, produced; and therefore slight uneasiness at the lower part of the belly, with or without a tendency in the os uteri to move or dilate, whether brought on by irritation at the upper part of the vagina or os uteri, or by affection of the neck of the bladder, &c.\*

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\* It is an old observation, that these purgatives, which produce much tenesmus, will excite abortion; and this is certainly true, if their operation be carried to a considerable extent, and continue long violent. Hence dysentery is also apt to bring



may be often prevented from extending farther, and destroying the action of

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on a miscarriage. Those strong purges which are sometimes taken to promote premature expulsion, not only act by exciting tenesmus, but likewise by inflaming the stomach and bowels, and thus affect the uterus in two ways. It cannot be too generally known, that when these medicines do produce abortion, the mother can seldom survive their effects. It is a mistaken notion, that abortion can be most readily excited by drastic purges, frequent and copious bleeding, &c. immediately after the woman discovers herself to be pregnant; on the contrary, the action of the uterus is then more independent of that of other organs, and therefore not so easily injured by changes in their condition. I have already shewn, that abortion more frequently happens when the pregnancy is farther advanced, because then not only the uterus is more easily affected, but the fœtus seems to suffer more readily. It is apt, either from diseases directly affecting itself, or from changes in the uterine action, to die about the middle of the third month, in which case expulsion follows within a fortnight.



gestation by rest, anodynes, and having immediate recourse to such means as the nature of the irritation may require for its removal.

Tapping the ovum, by which the uterus collapses and its fibres receive a stimulus to action, is another cause by which abortion may be produced; and this is sometimes, with great propriety, done at a particular period, in order to avoid a greater evil.

It is now the general opinion, that contraction will unavoidably follow the evacuation of the waters. But we can suppose the action of gestation to be in some cases so strong as not to stop in consequence of this violence, and, if it do not stop, contraction will not take place. I do not, however, mean to say, that all discharges of watery fluid from



the uterus, not followed by abortion, are discharges of the liquor amnii, and instances of this failing to produce contraction. On the contrary, I know that most of these are the consequence of morbid action about the os uteri, the glands yielding a serous instead of a gelatinous fluid, and this action may continue for many months.

Sometimes the upper range of lacunæ yields water, whilst the under secretes jelly, which confines the water for some hours, until it accumulates, and comes out with a small gush. At other times, in the early period of gestation, it collects in considerable quantity betwixt the lower part of the decidua protrusa, which has not yet reached the cervix uteri and the cervical efflorescence, which becomes a little stronger than usual.



There is thus a species of dropsy produced, and the water is sometimes confined until a little before labour comes on; at other times it is discharged sooner, and an oozing continues for many weeks. In all these cases, we may derive some advantage from injecting three or four times a day a strong infusion of galls. The woman ought to use no exertion, as the membranes are apt to give way.

When the liquor amnii really is evacuated, sometimes a spasmodic contraction of the fibres near the cervix takes place, instead of that regular action which is necessary for expulsion; and if the whole of the liquor have not escaped, the remaining portion will be confined by the tightening of that part of the uterus round the foetus; and this contraction may endure for a very considerable



time. If not interrupted, it may lay the foundation of future diseases in the uterus.

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Of the Prognosis.

THE danger of abortion is to be estimated by considering the previous state of the health, by attending to the violence of the discharge, and the difficulty of checking it ; to its duration, and the disposition to expulsion which accompanies it ; to the effects which it has produced in weakening the system, and to its combination with hysterical or spasmodic affections. In general, we say that abortion is not dangerous, yet in some cases it does prove fatal very spee-

dily, either from loss of blood, or spasms about the stomach, or convulsions.

It is satisfactory, however, to know, that this termination is rare, that these dangerous attendants are seldom present, and that a great hemorrhage may be sustained, and yet the strength soon recover. But if there be any disposition in a particular organ to disease, abortion may make it active, and thus, at a remote period, carry off the patient. Frequently, repeated miscarriages are also very apt to injure the health, and break up the constitution.

When abortion is threatened, the process is very apt to go on to completion; and it is only by interposing, before it is fairly begun, that we can be successful in preventing it, for whenever the muscular action is established, nothing,

I believe, can check the process. As this is often the case before we are called, or, as in many instances it depends on the action of gestation being stopped by causes, whose action could not be ascertained until the effect be produced, we shall oftener fail than succeed in preventing expulsion.

This is greatly owing to our not being called until abortion has begun; whereas, had we been applied to upon the first unusual feeling, it might have been prevented. What I wish then particularly to inculcate is, that no time be lost in giving notice of any ground of alarm, and that the most prompt measures be had recourse to in the very beginning, for when uterine contraction has commenced, then all that we can do is to conduct the patient safely thro'

a confinement, which the power of medicine cannot prevent.

The case of threatened abortion, in which we most frequently succeed, is that arising from slipping of the foot, or similar causes, producing a slight separation, because here the hemorrhage immediately gives alarm, and we are called before the action of gestation be much affected.

Could we impress upon our patients the necessity of equal attention to other preceding symptoms and circumstances, we might succeed in many cases where we fail from a delay, occasioned by their not understanding that an abortion can only be prevented by interfering before it begins, but that, when sensible signs of it appear, the mischief has proceeded too far to be checked.

*Of the Prevention and Treatment of
Abortion.*

IN considering the treatment, I shall first of all notice the most likely method of preventing abortion in those who are subject to it; next, the best means of checking it, when it is immediately threatened; and, lastly, the proper method of conducting the woman through it, when it cannot be avoided.

The means to be followed in preventing what may be called habitual miscarriage, must depend on the cause supposed to give rise to it. It will, therefore, be necessary to attend to the history of former abortions; to the usual habits and constitution of the wo-

man ; and to her condition when she becomes pregnant.

In many instances a plethoric disposition, indicated by a pretty full habit, and copious menstruation, will be found to give rise to it. In these cases, we shall find it of advantage to restrict the patient almost entirely to a vegetable diet, and, at the same time, make her use considerable and regular exercise.

The sleep should be abridged in quantity, and taken not on a bed of down, but on a firm mattress, at the same time that we prevent the accumulation of too much heat about the body. The bowels ought to be kept open, or rather loose, which may be effected by drinking Cheltenham water : and this can be artificially prepared, if necessary.

There is, in plethoric habits, a weakness of many, if not all, of the functions; but this is not to be cured by tonics, but by continued and very gradually increased exercise, with light diet, consisting chiefly of vegetables.

This plan, however, must not be carried to an imprudent length, nor established too suddenly; but regard is to be had to the previous habits. It is a general rule, that exercise should not be carried the length of fatigue, and that it should be taken, if possible, in the country, whilst late hours, and many of the modes of fashionable life, must be departed from. We may also derive so considerable advantage from conjoining with this plan, the shower bath, or sea bathing, that they ought not to be omitted.

After conception, the exercise must be taken with circumspection; but the diet should still be sparing, and the use of the cold bath continued. If the pulse be at any time full, or inclined to throb, a little blood should be taken away; and much advantage will be derived in all these cases, by using the digitalis, so as to affect the pulse. Half a grain may be given, so often as may be found necessary, to bridle the circulation. It may be continued for two days, and then omitted for a day; and in this way it may be continued for a length of time; but it is seldom necessary to give it regularly, beyond the beginning of the fourth month, unless a change of circumstances afterwards require it.

The dose must be occasionally increased, so as to produce the desired

effect ; and I can vouch for the safety of the plan.

Injecting cold water into the vagina, twice or thrice a day, has often a good effect, at the same time that we continue the shower bath every morning. When there is much aching pain in the back, it is of service to apply cloths to it, dipped in cold water, or gently to dash cold water on it.

In this, and all other cases of habitual abortion, we must advise that impregnation shall not take place until we have corrected the system ; and after the woman has conceived, it is requisite that she live absque marito, at least until gestation be far advanced. I need scarcely add, that when consulted respecting habitual abortion, the strictest

prudence is required on our part, and that the situation of the patient, and many of our advices, should be concealed from the most intimate friends of the patient.

In other cases, we find that the cause of abortion is connected with sparing menstruation. This is often the case with women whose appearance indicates good health, and who have a robust look. This is not often to be rectified by medicine, but it may by regimen, &c. Here, as in the former case, we find it useful to make the greatest part of the diet consist of vegetables; but it is not necessary to restrict the quantity.

When, on the other hand, the patient has a weakly delicate appearance, it will

be proper to give a greater proportion of animal food, and two or three glasses of wine, in the afternoon, with some bitter laxative, twice a day, so as to strengthen the stomach, and at the same time keep the bowels open.

We also derive, in both cases, advantage from the daily use of the warm bath, made of a pleasant temperature; but this is to be omitted after conception. The internal use of the Bath waters is often of service; or where the circumstances of the patient will not permit this, we may desire her to drink, morning and evening, a pint of tepid water, which may be continued during gestation. Throwing up into the vagina tepid salt water twice or thrice a day, seems also to have a good effect.

I have already mentioned, that abortion is sometimes the consequence of too firm action, the different organs refusing to yield to the uterus, which is thus prevented from enjoying the due quantity of energy and action. These women have none of the diseases of pregnancy, or they have them in a slight degree. They have good health at all times, but they either miscarry, or have labour in the seventh or eighth month, the child being dead; or, if they go to the full time, I have often observed the child to be sickly, and of a constitution unfitting it for living*.

* In these circumstances I have sometimes found the children liable to a formidable disease, described by Dr. Heberden, in his little treatise on the diseases of children, "Cap. De Duritie Cutis." I have met with this oftener than once in the same

We may sometimes cure this state by giving half a grain of digitalis, and the eighth part of a grain of the tartris antimonii, every night at bed time, which diminishes the stomachic action. Bleeding is also useful, by making the organs more irritable. Exercise, so as to prove tonic, is hurtful in this species of abortion; instead of wishing to increase the action of any organ, our object is to diminish it, and make the different parts more easily acted on.

The accidental accession of an hysterical condition of the system, sometimes spontaneously cures this state: and if

family, until the constitution of the mother was attended to, on the principle I have mentioned, after which the children were healthy.

the patient have gone to the full time, but bear an unhealthy child from this cause ; if she meet with any accident in her confinement, inducing a nervous condition, she is less apt afterwards to miscarry, or have dead children.

There is another case in which all the functions are healthy and firm, except the circulation, which is accelerated by the uterine irritation. This is more or less the case in every pregnancy, but here it is a prominent symptom. The woman is very restless, and even feverish, and apt to miscarry, especially if she be of a full habit. Immediate relief is given by venesection, and afterwards we may, for some time, give every night half a grain or a grain of digitalis, with two grains of the extract of hyocyamus.

When, on the contrary, abortion arises, from too easy yielding of some organ, we must keep down uterine action, by avoiding venery, and injecting cold water often into the vagina. Clysters of cold water are also useful; at the same time we must attend to the organ sympathizing with the uterus.

Sometimes it is the stomach which is irritable, and the person is often very sick, takes little food, and digests ill. A small blister, applied to the pit of the stomach, often relieves this; a little of the compound tincture of bark, taken three or four times a day, is serviceable; or a few drops of the tincture of muriated iron in a tumbler glassful of aerated water; at other times the bowels yield, and the patient is obstinately costive. This is best cured by *manna*, with the

tartarite of potash. When the muscular system yields, producing a feeling of languor and general weakness, the use of the cold bath, with a grain of opium, at bed time will be of most service.

It is evident that it is only by attending minutely to the history of former miscarriages, that we can detect these causes ; and we shall generally find, that in each individual case it is the same organ in every pregnancy which has yielded or suffered. Previous to future conception, we may, with propriety, endeavour to render it less easily affected.

General weakness is another condition giving rise to abortion ; and upon this I have already made some remarks. I have here only to add, that the use of the cold bath, the exhibition of the Pe-

ruvian bark, and wearing flannel next the skin, constitutes the most successful practice.

Syphilis is likewise a cause of abortion. When it occurs in the mother, it often unfits the uterus for going on with its actions. At other times, more especially when the father labours under venereal hectic, the child is evidently affected, and often dies before the process of gestation can be completed.

In these cases a course of mercury alone can effect a cure. But we are not to suppose that every child, born without the cuticle in an early stage of pregnancy, has suffered from this cause; on the contrary, as the majority of these instances depend on causes already mentioned, and which cannot be cured by

mercury, I wish to caution the student against too hastily concluding that one of the parents has been diseased, because the child is born dead or putrid in the seventh month.

It is not always easy to form a correct judgment; but we may be assisted by finding that the other causes which I have mentioned are absent; that we have appearances of ulceration on the child, and that there are some suspicious circumstances in the former history and present health of the parents.

Advancement in life, before marriage, is another cause of frequent abortion, the uterus being then somewhat imperfect in its action. In general, we cannot do much in this case, except avoiding carefully the exciting causes of abor-

tion, and by attending minutely to the condition of other organs during menstruation or pregnancy, we may, from the principles formerly laid down, do some good.

It is satisfactory to know that, by great care, although we may fail once or twice, yet the uterus comes at last to act more perfectly, and the woman bears children at the full time.

After these observations, it is only necessary to add, that in every instance of habitual abortion, whatever the condition may be which gives rise to it, we find that it is essential that the greatest attention be paid to the avoiding of the more evident and immediate exciting causes of miscarriage, such as fatigue, dancing, &c. In some cases, it may

even be necessary to confine the patient to her room, until the period at which she usually aborts is past.

When abortion is threatened, we come to consider whether and by what means it can be stopped. I have already stated my opinion, that when the action of gestation ceases, it cannot be renewed, and that general contraction of the uterine fibres is a criterion of this cessation.

Still, as some of the means which may be supposed useful in preventing a threatened abortion are also useful in moderating the symptoms attending its progress, we may very properly have recourse to them. Some causes giving rise to abortion, do not immediately produce it, but give warning of their

operation, producing uneasiness in the vicinity of the uterus, before the action of that organ be materially affected.

The detraction of a little blood at this time, if the pulse be in any measure full or frequent, and the subsequent exhibition of an anodyne clyster, or a full dose of digitalis and opium, together with a state of absolute rest for some days, will often be sufficient to prevent farther mischief, and constitute the most efficacious practice.

This is the time at which we can interfere with the most certain prospect of success; and the greatest attention should be paid to the state of the rest of the system, removing uneasiness, wherever it is present, and preventing any organ from continuing in a state of undue ac-

tion. It is difficult to persuade the patient to comply with that strict attention which is necessary at this period; but being persuaded that if this period be allowed to pass over with neglect, nothing can afterwards prevent abortion.

I wish particularly to impress the mind of the student with a due sense of its importance; and I must add, that as after every appearance of morbid uterine action is over, the slightest cause will renew our alarm, it is necessary that great attention be paid for some time to the patient.

Often, instead of an uneasy feeling about the loins, or lower belly, we have, before the action of gestation stops, a discharge of blood, generally in a mo-

derate, sometimes in a trifling degree. This is more especially the case when abortion is threatened, owing to an external cause, and, if immediately checked, we may prevent contraction from beginning.

Even in those cases where we do not expect to keep off abortion, it is useful to prevent, as far as we can, the loss of blood, for as I cannot see that the hemorrhage is necessary for its accomplishment, although it always attend it, I conclude that our attempts to prevent bleeding can never do harm, for if they succeed in checking abortion, we gain our object; if they fail, they do not increase, but diminish the danger.

It should be carefully remembered, that the more we can save blood, the

more do we serve our patient. As the means for checking the discharge will be immediately pointed out, it is unnecessary here to enter into any detail.

Sometimes the vessels which furnish the cervical efflorescence in the beginning of gestation, do not assume that action, but yield blood, which passes for the menses, and makes the woman mistake her condition. As the uterine vessels increase in size, the discharge becomes greater and more frequent. It is now apt to pass for menorrhagia.

If it be allowed to continue, it tends to injure the action of the uterus, and produce expulsion, which sometimes is the first thing which shews the woman her situation. This discharge is best managed by rest, and the frequent in-

jection of saturated solution of the sulphat of alumine, or decoction of oak bark.

When a slight discharge takes place, in consequence of a slip of the foot, or some other external cause, we may also derive advantage from the use of the injection, but not so certainly as in the former case; and if the discharge be considerable, the injection will fail. It is better, in this case, to trust to the formation of a coagulum.

In those cases, where uterine pain precedes or accompanies the discharge, abortion cannot be prevented; but when the discharge precedes the pain, it sometimes may. Rest is absolutely necessary, if we wish the person to go to the full time: and it is occasionally neces-

sary to confine her to bed for several weeks, at the same time that we put her upon an effective course of digitalis, and give an anodyne at bed-time, taking care also to keep the bowels in a proper state by gentle medicine.

When we cannot prevent abortion, the next thing is to conduct the patient safely through the process; and the first point which naturally claims our attention is the hemorrhage. Many practitioners, upon a general principle, bleed, in order to check this, and prevent miscarriage: but miscarriage cannot be prevented, if the uterine contraction have commenced; and the discharge cannot be prudently moderated by venisection, unless there be undue or strong action in the vessels.

This is not always the case, and therefore, unless the vessels be at or above the natural force or strength of action, the lancet is not at this stage necessary. The fulness and strength of the pulse are lost much sooner in abortion than can be explained, by the mere loss of blood.

It depends on an affection of the stomach, which has much influence on the pulse; and the proper time for bleeding is before this has taken place. When abortion has made so much progress before we are called, as to have rendered the pulse small and feeble; or when this is the case from the first, bleeding evidently can do no good.

Instead of this, we may use the digitalis, which I have already highly re-

commended as a preventative; but I do not say that, in ordinary cases, where the contraction is brisk, and the process quick, it is at this stage absolutely necessary; and I shall afterwards mention that, when the stomachic affection is urgent, and the pulse much affected by it, the use of this medicine is improper. When, however, the case is tedious, and the discharge long continued, at the same time that the sickness is not considerable, the digitalis will be of essential service.

Nauseating doses of emetic medicines act in the same way with the digitalis, but are much less effectual, and more disagreeable, as well as uncertain in their operation.

Internal astringents have been pro-

posed, but they have no effect, unless they excite sickness, which is a different operation from that which is expected from them.

The application of cloths dipped in cold water to the back and external parts will have a much better effect than internal astringents, and ought always to be had recourse to. If the digitalis have been exhibited, it assists that medicine in moderating the circulation.

Even when trusted to alone, it lessens the action of the sanguiferous system, particularly of the uterine vessels. The introduction of a small piece of smooth ice into the vagina has been recommended, and has often a very speedy effect in retarding the hemorrhage, whilst

it never, if properly managed, does any harm. A small snow-ball, wrapped in a bit of linen, will have the same effect; but neither of these must be continued so long as to produce pain, or much and prolonged shivering. The heat of the surface is also to be moderated, by having few bed clothes, and a free circulation of cool air.

But the most effectual local method of stopping the hemorrhage, is by plugging the vagina. This is best done by taking a pretty large piece of soft cloth, and dipping it in oil, and then wringing it gently.

It is to be introduced with the finger, portion after portion, until the lower part of the vagina be well filled. The remainder is then to be pressed firmly

on the orifice, and held there for some time. This acts by giving the effused blood time to coagulate. It gives no pain; it produces no irritation, and those who condemn it, surely must either not have tried it, or have misapplied it.

If we believe that abortion requires for its completion a continued flow of blood, we ought not, in those cases where the process must go on, to have recourse to cold or other means of restraining hemorrhage.

If we do not believe this, then surely the most effectual method of moderating it is the best. Plugging can never retard the process, nor prevent the expulsion of the ovum; for when the uterus contracts, it sends it down into the

clotted blood in the upper part of the vagina, and the flooding ceases.

In obstinate cases we may, before introducing the plug, insert a little powdered ice, when it can be procured, tied up in a rag.

Faintness operates in the same way, in many cases, by allowing coagula to form in consequence of the blood flowing more slowly; and, when the faintness goes off, the coagula still restrain the hemorrhage in the same way as when the plug has been used. This naturally points out the advantage of using the plug, together with the digitalis, as we thus produce coagulation at the mouths of the vessels, and also diminish the vascular action. It will likewise shew the impropriety of using injections

at this time, for, by washing out the coagula, we do more harm than can be compensated by any astringent effect produced on the vessels.

The principal means, then, which we employ for restraining the hemorrhage, are bleeding, if the pulse be full and sharp; if not, we trust to the digitalis, stuffing the vagina, the application of cold to the external parts, keeping the heat of the body in general at a low temperature, and enforcing a state of absolute rest, which must be continued during the whole process, however long it may in some cases be. The drink should be cold, and the food, if the patient desires any, light, and taken in small portions.

Opiates have been advised, in order to

abate the discharge, and are, by many, used in every case of abortion, and in every stage. But as we cannot finish the process without muscular contraction, and as they tend to suspend that, I do not see that their exhibition can be defended on rational principles.

If given in small quantity, they do no good in the present point of view; if in larger doses, they only postpone the evil, for they cannot check abortion, after it has begun. Nothing can do this, for it proceeds from the cessation of the action of gestation, which we cannot restore.

But I will not argue against the use of opiates from their abuse. They are very useful in cases of threatened abortion, more especially in accidental sepa-

ration of the membranes and consequent discharge. They do not directly preserve the action of gestation, but they prevent the tendency to muscular contraction, and thus do good; for we find in the animal economy, that when two actions oppose each other, or alternately, preventing a tendency to the one has an effect in preserving the other.

Opiates are likewise useful for allaying those sympathetic pains about the bowels, and many of the nervous affections which precede or accompany abortion. They are also, especially if conjoined with digitalis, of much benefit in cases where we have considerable and protracted discharge, with trifling pains, as the uterus is not contracting sufficiently to expel the ovum, but merely to separate vessels.

By suspending, for a time, its action, it returns afterwards with more vigour and perfection, and finishes the process. But when the process is going on regularly, opiates will only tend to interfere with it, and prolong the complaint.

It was at one time the practice to endeavour to extract the foetus and placenta, in order to stop the discharge; but this is now very properly abandoned. If the whole ovum come away at once, the discharge stops; if only the foetus come away, it continues until the placenta and decidua are expelled; and where this process is tedious, we may derive advantage from gently irritating the os uteri with the finger, or using pretty strong saline clysters, or throwing cold water into the uterus by means of a female catheter, fitted to the elastic

gum bottle used for injecting hydrocele. These means are much safer than the attempts to pull out the placenta with the finger or pincers, which were formerly so often made, and which are very apt to injure the womb.

In cases where the discharge is protracted and profuse, with little or no pain, and the ovum is still entire, we may, if the pregnancy be considerably advanced, excite the expulsive action, by rupturing the membranes.

The stomach very soon suffers, and becomes debilitated, producing a general languor and feebleness, with a disposition to faint, which seems, in abortion, to depend more upon this cause than directly upon loss of blood. Indeed, the hemorrhage produces both slighter and

less permanent effects in abortion than at the full time, although less blood may have been lost in the latter than in the former case, for the vessels are smaller, and the discharge is not so sudden.

There is still another cause for this ; namely, that the action of the uterus is less in the early than in the late months. Now, we know that the effect of hemorrhage from any organ is, *cæteris paribus*, in proportion to its degree of action. Hence the discharge is less dangerous than at the full time, and still less in menorrhagia than in abortion.

It is likewise less in cases where hydatids are contained in the uterus, than when a child is present, very astonishing discharges being sometimes sustained in that case with impunity.

The effect of abortion on the stomach seems to be in proportion to the period at which that takes place, being greater when it occurs before the fourth month than after it.

The effect, though distressing, and often productive of alarm, is nevertheless beneficial, lessening the action of the vessels in the same way with digitalis, the use of which is improper when this condition is present.

The strength of the pulse is much abated; sometimes it becomes slower; but in general it remains much as formerly in point of frequency; we are therefore not to be too anxious in removing this condition, which restrains hemorrhage; yet as it may go beyond due

bounds, and produce dangerous syncope, we must check it in time.

We must likewise be very attentive to the state of the discharge when this affection is considerable, for if, notwithstanding this, the hemorrhage should continue, it will produce greater and more immediately hurtful effects than if this were absent.

The best method of abating this sinking and feebleness, is to keep the body perfectly at rest, and the head low. If necessary, we give small quantities of stomachic cordials, such as a little tincture of cinnamon, or a few drops of ether in a glass of aerated water; or we may give a little peppermint water, with fifteen drops of tincture of opium. In

urgent cases, Madeira or undiluted brandy may be given; but these are not to be frequently repeated, and are very rarely necessary.

Sometimes, instead of a feeling of sinking and faintness, the fibres of the stomach are thrown into a spasmodic contraction, producing sudden and violent pain. This is a most alarming symptom, and may kill the patient very unexpectedly. It is to be instantly attacked by a mixture of sulphuric ether and tincture of opium, in a full dose, whilst a senapism is applied to the epigastric region.

Spasms about the intestines are more frequent, and much less dangerous. They are very readily relieved by thirty drops of tincture of opium, in a dessert

spoonful of aromatic tincture, or forty drops of the tincture of hyocyamus in two tea-spoonfuls of the compound tincture of lavender.

The brain may also be affected, producing epilepsy, which is a very dangerous symptom. This is sometimes preceded by headach, flushing of the face, and feeling of fulness about the head and neck ; but at other times it attacks without any precursory symptom, and sometimes seems to arise directly from copious hemorrhage.

Nothing can be done to the uterus in the way of manual assistance, or extracting the ovum ; but our chief attention should be directed to the brain. It will, indeed, be proper to attend to the state of the pains and discharge. If the

latter be profuse, we must take measures to check it; if the former be absent, or seem to alternate with the convulsions, we may derive advantage from the use of a saline clyster, which will excite the contraction of the uterus, and confine the action more to itself.

The same effect may sometimes be obtained by injecting cold water into the os uteri. Whilst we thus endeavour to excite the regular action of the uterus, we must likewise act directly on the brain, by shaving the head, and applying a senapism to the scalp. We also detract blood, if the pulse indicate an evacuation. If, on the other hand, the disease seem to have arisen from the profusion of the discharge, it will be proper to give volatiles, or a full dose of laudanum, in a little warm brandy.

This state is to be distinguished from a combination of hysteria and syncope, which occasionally occurs during labour, whether natural or premature, and which is by no means equally dangerous.

This is known by the smallness of the pulse, the paleness of the face, the slightness of the convulsions, the absence of foam at the mouth, and an appearance of struggling about the throat. It attacks suddenly, generally on getting into an erect posture.

It is at first little different from syncope, and during the whole time the muscles of the face are not much affected, the countenance having rather a deadly aspect. This is removed by an horizontal posture, sprinkling the face smartly with cold water, and the use of vola-

tiles. The patient, in this case, as in epilepsy, is often unconscious of having been ill.

Regular hysteric paroxysms also sometimes accompany abortion, and are more dangerous than at other times, more especially if they seem to have been excited by the profusion of the discharge. If they last long, they either end in mortal syncope, or in stupor. If they have been brought on by some agitation of mind, they are less to be feared, though not even then void of danger.

Besides attending to the state of the discharge, the best practice is to keep the person very cool, and exhibit thirty or forty drops of tincture of opium, and two drams of tinctura valerianæ ammoniata in a little peppermint water. A

clyster, composed of a pound of cold water and two drams of tincture of asa-fœtida, is also sometimes of service.

Those disagreeable symptoms which I have described, fortunately do not often attend abortion; but the process goes on safely, and without disturbance. In this case, after it is over, we only find it necessary to confine the person to bed for a few days, as getting up too soon is apt to produce debilitating discharge.

We must also, by proper treatment, remove any morbid symptoms which may be present, but which depending on the peculiarities of individuals, or their previous state of health, cannot here be specified. When the patient continues weakly, the use of the cold

bath, and sometimes of the bark, will be of much service in restoring the strength; and, in future pregnancies, great care must be taken that abortion may not happen again at the same period.

Unfortunately we meet with some cases where the recovery does not take place with that promptitude and regularity which could be wished. This sometimes depends upon a continuance of the hemorrhage after the ovum is expelled, by which the patient is greatly weakened, and even her life put into danger.

The hemorrhage may either continue from the time of expulsion, or it may come on a week, or even longer, after it. It seems to proceed from the uterus

not going on in the process of restoration to the unimpregnated state, but remaining too long enlarged, the consequence of which is, that very soon the vessels pour out blood, and fill the cavity, forming a coagulum, which presently is expelled with a considerable flow of fluid blood; and this process may be very frequently repeated.

This, which is often connected with an hysterical condition, is more especially apt to occur in those who are subject to flooding after the expulsion of the child, as this marks a natural feebleness in the womb, and a disposition to flag in its actions after delivery.

In such patients it is often preceded by ill-smelled lochial discharge, which proceeds sometimes from the original

state of the secretion, but more frequently from its being retained for some time, and acquiring this smell.

This has given rise sometimes to an idea that the complaint proceeded from the retention of part of the placenta or membranes; but this retention often takes place without any such discharge succeeding; and, on the other hand, in several instances of this complaint we have certain knowledge that no part of the placenta has remained, whilst in almost every case we have a coagulum expelled, possessing exactly the shape of the uterine cavity, shewing that nothing else has been contained within it.

Indeed, the opinion is not very tenable, for a small part of the placenta or decidua would, if the uterus were con-

tracting, be soon expelled, and would then surely cease to have any farther influence ; whilst, on the other hand, if the uterus do not regularly contract in size, or recover itself, the hemorrhage will take place from this cause alone, independently of all considerations relating to the placenta.

By attending to this fact, we shall not only refrain from blaming midwives unjustly, but also from adding to the danger, by endeavouring to remove a substance which has no existence in the uterus, and which, even were it to a certainty within, it is there not as a cause of the hemorrhage, but as an effect of the cause which produces that.

This disease may take place at any period of gestation. It may follow abor-

tion in the second month, or expulsion at the full time ; but it is dangerous in proportion as we approach to the term of natural labour. It may attack only once or twice, or it may make many attacks for several weeks ; and it is wonderful how the system can be supported under these continued and repeated discharges : but we find that an incredible quantity of blood may be lost, if it be discharged at intervals.

We read in a foreign journal of a woman who, in the space of nineteen years, was bled no less than one thousand and twenty times without material injury. Each paroxysm is accompanied by slight pain in the back and belly, with considerable languor and feeling of depression. The discharge continues until the clot escapes out of the uterus, and

for some time after that until a new one forms; and during this last process we have a considerable oozing of serous fluid.

The old clot drops out of the vagina the first time that the patient is raised, or, if retained, it breaks down by putrefaction. On examining these clots, they will be found to be pretty firm, and often contain, intermixed, a quantity of whitish matter, proceeding from the morbid condition of the lochia, for the vessels, after bleeding often, throw out a secretion, and bleed no more until the next paroxysm, which may not take place for one or two days.

This complaint either terminates fatally by a convulsion or syncope, or the uterus diminishes in size, and, instead

of expelling the contained clot with hemorrhage, the coagulum seems to break down and come away gradually in a fluid form.

In abortion, during the early stages of gestation, we cannot take any other precaution to prevent this than keeping the patient for some time very quiet, as motion, or even any agitation of mind, might interfere with the process of recovery.

In more advanced gestation, as, for instance, in the seventh month, and afterwards, if we should be obliged, on account of flooding, after the birth of the child, to introduce the hand, and extract the placenta, we must be careful not to withdraw it, until we find the uterus contracting round it, which will

be a mean, though not an infallible one, of making it go regularly on in the process of restoration to the unimpregnated state.

The best method of treating this complaint is on the very first appearance of hemorrhage, to introduce a firm plug into the vagina, which will prevent it from going to an excessive degree. Afterwards we must take measures to prevent a return.

This is best done by keeping the circulation slow, by means of the digitalis, and putting the patient on a mild vegetable diet. We cannot assist the process of restoration otherwise than by endeavouring to excite the contraction of the uterus. This may be done by injecting an astringent fluid two or three

times a day, and by ordering saline clysters, which have also the effect of keeping the bowels open, an object of very great importance. We may also find it useful to excite gentle vomiting by small doses of ipecacuanha.

This has an excellent effect in making the uterus contract, and often is the method which nature takes to bring about recovery.

This complaint is different from the menorrhagia lochialis, or copious discharge of blood brought on by exertion after abortion or delivery. In this case we have no large clot discharged, but just the usual appearances of menorrhagia. This sometimes seems to become associated with other morbid conditions

of the system : and in those cases is more or less obstinate as they are intractible. It is generally cured by rest, the application of cold, and the use of the digitalis. The consequent weakness is removed by bark, or preparation of iron, with the cold bath.

Either of these discharges are very apt to produce painful headaches, vertigo, and often slight paralytic symptoms, which, however, soon go off. Any considerable increase of the hemorrhage gives relief to the headach, but it returns afterwards with greater violence.

It is frequently relieved by the use of small doses of the saline laxatives. In protracted cases, especially when the headach puts on an intermittent form, observing pretty regular periods, the

bark combined with valerian will be of service.

Sometimes the mind is affected after abortion, although we may have had little discharge; and the person becomes either melancholy, or, which is much oftener the case, mad, with great volubility of tongue. This mania is, in general, sudden in its attack, and is often preceded by a violent fit of palpitation, or some other nervous affection.

It occasionally alternates with external pain or swelling of some of the joints; and, though frequently a tedious complaint, is oftener got the better of than any other species of mania. The head, upon a general principle, ought to be shaved and blistered, and a free discharge kept up from it. The bowels

are to be carefully attended to, and no indurated faces should be allowed to remain in them. The camphorated emulsion may be given through the day in its usual quantity; and a full dose of extract of hyosciamus exhibited at night. The patient is to be kept, in every respect, as quiet and easy as possible.

Another distressing consequence of abortion, as well as of labour at the full time, is hysteria appearing in various forms, but more especially under that of palpitation of the heart. This attacks suddenly, often in consequence of a fright.

The patient has a violent beating in the breast, and sometimes a sense of suffocation. She feels also a knocking within the head, attended with a sense

of heat, and often a redness in the face. The pulse becomes extremely rapid and irregular, and continues so until the fit goes off, which sometimes is not for a considerable time.

During the paroxysm, the patient is much terrified, and impressed with a belief that she is going to die. After it is over, the mind is left timid, and the body in a state of languor. Sometimes the fit is succeeded by a profuse perspiration, whilst betwixt the attacks the temperature is very versatile.

This, like all other complaints of the same class, is very obstinate; but it is not in general dangerous, unless when it proceeds from uterine disease, marked by pain in the hypogastric region and tension of the belly. In this case, the

danger is great, and is only to be averted by the early use of purgatives, followed by antispasmodics, whilst fomentations are applied to the belly.

The other case, which is purely hysterical, is to be relieved by giving, during the paroxysm, a liberal dose of tincture of opium and ether. Small doses have no effect. During the intervals we may give a table spoonful of the following mixture five or six times a day.

R Tinc. digitalis \mathfrak{z} iss.

Extr. Hyociami \mathfrak{z} i.

Emuls. Camphorat. \mathfrak{z} iv. misce.

It is also an essential point, that the bowels be kept open, and the patient put upon a light diet. As the attacks are very apt to come on at night, when the person is about to fall asleep,

we sometimes find it useful to give a dose of tincture of hyocyamen and ether at bed-time, and must take great care that the patient be not afterwards disturbed or put off her rest.

When she is much troubled with flatulence, during the intervals the tincture valeriana ammoniata is of considerable service. Tonics and the cold bath are also proper. Hysteria either consists in or depends upon a preternatural aptitude in the different organs, to have their actions morbidly increased, or rendered irregular; and hence it may affect secreting as well as muscular parts; and many of the discharges of lying-in women will be found to be, in this sense, hysterical, and to alternate with other symptoms, such as globus, palpitation,

headach, &c. and even the most troublesome of all the discharges, that proceeding from the uterus not recovering or contracting properly, is, I believe, properly speaking, an hysterical affection, connected with several others, and alternating with them.

The next disease which I shall mention is also, I believe, altogether hysterical. I mean that resemblance of fever which is often met with after either abortion or delivery, at the full time, and which is, like the rest of its tribe, abundantly obstinate,

This is not to be confounded with milk-fever, or other general diseases arising from local injury. It is sometimes preceded by palpitation, frightful

dreams, and other nervous affection*. At other times it attacks directly with a shivering fit, which is soon alternated with heat; then the heat becomes steady and distressing, and continues until a profuse perspiration carries it off.

The head is generally pained in the two first stages, and the pulse is frequent in them all. The thirst is considerable, the stomach filled with flatus, and the belly bound. Often we have irregular action of the heart occurring in all the stages, whilst the mind is weakened, and

* Hiccup sometimes accompanies this complaint: at other times it attacks the patient as a disease by itself, or alternates with palpitation. It is best treated by giving large doses of ether. It is also necessary to clear the bowels; afterwards the compound tincture of bark is useful.

the patient is much afraid of dying. The paroxysm continues for several hours, and, like ague, is apt to return regularly for a length of time.

In the cold stage, we give small quantities of warm fluid. In the hot stage, we lessen the number of bed clothes; but must not do this suddenly, as the shivering is very apt, in either this or the sweating stage, to return, upon slight exposure to cold.

In the last stage, we are careful not to encourage the perspiration too much, by refraining from warm drink, for much sweating only tends to render the disease more obstinate. A repetition is to be prevented, by keeping the bowels open, by the use of the bark, conjoined with antispasmodics, and by carrying the pa-

tient, as soon as possible, to the country.

The last disease, which I shall speak of, proceeds from the retention of the whole, or a part of the secundines, for a length of time after the expulsion of the foetus. This circumstance, as I have formerly mentioned, may sometimes occur in that state of the uterus, which gives rise to hemorrhage, appearing as a joint effect with it. In this case, however, we must not conclude that the one symptom is dependant on the other, for both proceed from a common cause, the want of contraction of the uterine fibres.

It occasionally happens, that no hemorrhage accompanies this retention, but the remains of the ovum putrify, and

after many days come away in a very foetid state. Until this expulsion takes place, we have very offensive discharge from the vagina, and not unfrequently loss of appetite, prostration of strength, frequent and small, but sharp pulse, hot and parched state of the skin of the hands and feet, with other febrile symptoms, even to an alarming degree, and generally accompanied with hysterical affections.

When this disease proves fatal, there are often, but not always, conjoined towards the termination symptoms of inflammatory action in the uterus.

The practice, at one time, was to endeavour, with the fingers or forceps, to extract the remains of the ovum; but this is not always successful, and is pro-

ductive of much irritation. We find it most useful to keep the parts clean, by injecting infusion of camomile flowers with a small quantity of oxygenated muriatic acid, to open the bowels with gentle laxatives or clysters, to support the strength by light nourishment with small portions of wine frequently repeated, if agreeable to the patient, and plenty of subacid fruit, whilst, at the same time, we, if necessary, procure rest, or allay irritation by opiates.

FINIS.

ERRATA.

- Page 24, line 9, for *ar every*, read *are very*.
 34, — 8, for *expanding*, read *expending*.
 40, — 16, for *takes*, read *take*.
 41, — 5, for *in*, read *rise*.
 64, — 11, for *urerus*, read *uterus*.
 74. — 12, dele the comma after *frequently*.
 94. The paragraph beginning with *I wish*, &c.
 ought to form a part of the preceding sentence.