lization? I do not dwell upon this repulsive method, because I believe simple puncture of the sac is the right course to adopt.

If the opportunity of treatment during development has been passed by, and *rupture has taken place*, what is the course to be adopted?

The question is often discussed, whether it is not advisable to perform *laparotomy* (λαπάρα, the soft part between ribs and hips, *abdominal section*) with a view to removing the embryo and effused blood, to check bleeding by tying the Fallopian tube on the proximal side of the sac, and cutting away the sac? I do not imagine that this will be successfully carried out in cases of early tubal rupture. In the first place, the greater number of subjects die within a few hours from the primary shock of the injury and hemorrhage. Laparotomy must add to this shock, and cannot restore the lost blood. Secondly, to discover the source of the bleeding, and to remove the blood is by no means easy. I have found considerable difficulty in tracing the parts with all the advantages incident to a post-mortem examination. Thirdly, if we could tie the tube, and amputate the sac, the pain caused by the ligature might by itself exhaust the vital power. I fear the actual state of science has no resource beyond the old one of rallying the patient from collapse by cautious administration of stimulants, of procuring rest by opium, and by controlling inflammation, if the patient survives until this conservative process sets in. If this fortunate event should be reached, the case may resolve itself into one of encysted pelvic hæmatocele, and must be treated on the principles laid down for that condition.

But this issue by cataclysmic rupture is not invariable. I agree with Lesouef's observation that extra-uterine gestation is a far more frequent accident than is supposed, and that if it be so rarely observed, it is because the embryo in the greatest number of cases is destroyed in the first days of its development. No appreciable symptom then is manifested, or if the physician is called in, it is impossible for him to refer what he sees to its true cause. When a tubal, ovarian, or abdominal gestation is brought to an end in the first days, the hemorrhage may not be fatal, and the rational signs of gestation not having yet appeared, the source of the resulting hæmatocele escapes detection. In these cases the hemorrhage may escape from the surface of the tube, or from its open end. There is not necessarily rupture of the tube; and the embryo perishes, and a hæmatocele is formed. I have related cases, upon my interpretation of which of course it is easy for criticism to cast a doubt, but which I nevertheless believe to be of this nature. In yet another order of cases, rupture of the tubal sac takes place early, the hemorrhage is not fatal, and the impregnated ovum escaping into the abdominal cavity may graft itself upon the peritoneum, when a sac will be formed by false membranes.

Lesouef, quoting Bernutz, says: "If the rupture of the tubal sac takes place on a level with the attached border of the tube, the blood will find its way into the cellular tissue of the broad ligament, and thus find difficulty in effusion, whilst the ovum will insinuate itself in the route made between the folds of the broad ligament, and become developed there. For it must be remembered that the ovum itself rarely ruptures, its envelopes remain intact, and its vitality is not necessarily destroyed."

The *tubal gestation may go on to term*. This issue is exceedingly rare; so rare, that a case which Spiegelberg[1] relates he believes to be singular. Convulsions came on in a woman at term, with signs of labor; copious albumen was found in the urine. She died after three days, the convulsions and albuminuria having ceased on the death of the child. The cause of death was perforation of the sac. Examination showed that the sac was tubal; a sound passed from the uterus into it; muscular fibres were found over the surface; the sac was inclosed between the two layers of the broad ligament; the ovary was found entire. I am unwilling to hint a doubt of the accuracy of so excellent an observer as Spiegelberg; but it appears possible, even in this case, that there had been at an early stage rupture of the tube at its lower margin, which had given opportunity for the ovum to extend its sac by opening up a space between the folds of the broad ligament.

The question of performing laparotomy to extract a fœtus developed outside the uterus will be more conveniently discussed after the description of the other forms of extra-uterine gestation.

2. *Ovarian Gestation.*—The reality of this form has been doubted. Velpeau and Arthur Farre especially contend for the negative. The reasons adduced are twofold: 1st, the physiological one, which is based upon the assumption that the ovum must have escaped from the ovary before it can be impregnated; 2d, the anatomical one. It is urged that there is no clear evidence of a fœtus or fœtal membranes having been discovered in the ovary. Professor A. Willigk[2] advocates this view, and criticizes the alleged cases. He has carefully dissected several, and failed to find fœtus or membranes in the ovary. It is needless to say that the microscope is necessary to identify presumed chorion-villi.

On the other hand, there are cases which it is hypercritical to set aside as being imperfectly observed. And the physiological objection falls to the ground if we accept the conclusion of Bischoff and Coste that impregnation does take place in the ovary. Thus Duverney[3] relates a case given by De Saint-Morissey, of a lady who, pregnant for the ninth time, at three months fell ill with collapse from severe colic in the right groin. She died in nine or ten hours. The abdomen was full of clots, and a small fœtus was found in the midst. The right ovary was torn longitudinally, and in the half of the side not attached to the tube its whole capacity was filled with clots. Every one present was satisfied that this was the spot where the fœtus had been formed.

Goupil cites a case from Ucelli. The uterus was enlarged.

Drs. P. U. Walter[4] and Hecker[5] relate cases in confirmation.

A case is related by Uhde[6] of a young woman who died under the usual signs of "abdominal collapse." Blood was found in the peritoneum. The right ovary was enlarged and emphysematous; at its lower and hinder part was a sac formed of chorion, which had burst. It was the size of a large plum, and contained an embryo 7‴ to 8‴ long. The right tube was hanging quite free, its fimbriæ loose. The preparation is

[1] Archiv f. Gynäkologie, 1870.
[2] Prag. Vjhrtschr., lxviii.
[3] Œuvres Anatomiques, 171.
[4] Monatsschrift für Geburtskunde, 1861.
[5] Ibid., 1859.
[6] Ibid., 1857.

preserved, and affords a good means of testing the reality of ovarian gestation.

It is, *primâ facie*, unphilosophical to affirm an absolute negative. It is, then, wise to admit that ovarian gestation may happen, but safe to affirm that it is very rare. During life it would be difficult, if not impossible, to diagnose it from tubal gestation. If detected before rupture, it would be right to treat it by puncture in the same way, for the histories of the few cases narrated show that the ovarian sac, like the tubal one, is apt to burst early. Probably a more frequent issue is the merging into the tubo-ovarian or abdominal forms.

3. The *tubo-ovarian* form is not very infrequent. Probably its history commences with arrest and development of the ovum just within the fringes of the pavilion of the tube, so that this structure supplies part of the sac, the rest being made up by adhesions contracted with the ovary. It may also arise from original tubal gestation, early rupture of the tubal sac, and fusion of this with the surface of the ovary by adhesions. The occurrence of signs of pelvic inflammation at some period in the history of these cases supports the probability of this event. The tubo-ovarian gestation, like the abdominal form, differs from the tubal by the greater probability of the gestation going on to the full development of the fœtus. What then happens will be considered under "Abdominal Gestation."

4. *Abdominal Gestation.*—It appears to me doubtful whether abdominal gestation is ever primary, that is, whether the impregnated ovum attaches itself *ab initio* to some part of the peritoneum. It can scarcely be doubted that ova, impregnated or not, frequently are missed by the *morsus diaboli*, and fall into the abdominal cavity, there to perish. Kiwisch insists that the spermatozoa also find their way into the peritoneum, and may there meet the stray ovum, and give rise to primary abdominal gestation. Such a fortuitous concourse of atoms resulting in gestation, rests at present on conjecture. Probably, then, abdominal gestation is always secondary upon tubal or ovarian gestation. After these latter forms have proceeded a little way, the sac, as we have seen, gives way, but the ovum is not cast out of its original habitat; it maintains its vitality by retaining part of its original attachments. Inflammation of the peritoneum is excited by the rupture and effusion of blood; neighboring organs get connected by adhesions with the sac; the embryo and its envelopes grow into the new space; fresh effusions of lymph are thrown out surrounding all; and thus a new sac is formed, in which it is difficult to trace the original tubal structure. It is only when the opportunity occurs of dissecting the parts at an early stage of gestation, that we can expect to unravel the structures involved in the sac. No long time elapses without the complication of inflammation and false membranes implicating neighboring organs, whilst possibly a process of atrophy of the original structures forming the cyst has altogether confounded analysis. That the original gestation may be ovarian and not tubal seems proved by a case related by the late Dr. Dyce, of Aberdeen. A woman died after having carried an abdominal gestation eight years, and having had two uterine pregnancies in the meanwhile. *Both Fallopian tubes were found entire*, but no trace of one ovary could be detected.

The course of abdominal gestation observed may be like that of ordinary gestation up to a certain point. But intercurrent attacks of pain, the expression probably of attacks of peritonitis, are apt to occur. 1. The *cyst may burst*, as in a case related by Dr. Thormann (*Wien. Med. Wochnschr.*, 1853). The cyst projected into the retro-uterine pouch, and under expulsive efforts it burst through a rent in the posterior wall of the vagina, an arm of the fœtus protruding.

2. In most cases, however, the cyst is too tough to burst. After labor-pains have persisted for some time, *the fœtus dies.*

3. Death may happen through *exhaustion under the efforts at labor*, and from compression of the fœtus upon the abdominal organs.

4. The *peritonitis* may prove fatal, and the cause may escape detection unless a post-mortem examination be made. Peritonitis may be the result of rupture or perforation of the sac, and it may precede or follow the death of the fœtus. In one case of this kind which I have related[1] a fluctuating swelling was formed behind the uterus. The uterus was driven forwards and above the symphysis pubis, and considerably elongated, I believe, by the pressure to which it had thus long been subjected. The absence of uterine pregnancy was first established by the uterine sound, and by dilating the cervix to facilitate exploration of the interior. Then the swelling behind the uterus was punctured. Fluid in part resembling liquor amnii escaped. Death was caused by the peritonitis. In most cases, probably, the sac will encroach upon the pelvic cavity, getting behind the uterus. The sound will isolate the uterus; the finger exploring by vagina and rectum will detect the fluctuating mass, perhaps make out parts of the fœtus, or fœtal bones. There may, however, be no fluctuation, the mass being solid from absorption of the liquor amnii, or from presence of coagulated blood. Sometimes when perforation, spontaneous or surgical, has been made, the discharge is characteristic. It is a sort of blood-stained putrilage, and may reveal shreds of disintegrated fœtal tissue.

5. In many cases the sac-walls being formed in part by some portion of the alimentary canal or the abdominal wall, or at least only separated from these by adhesions, a process of *ulcerative absorption* takes place, by which a fistulous *perforation is made into the intestines, or through the abdominal wall.* This process is attended by hectic or irritative fever and emaciation. It is rarely that the opening thus made is large enough to permit the easy or complete evacuation of the fœtus. The attempt at elimination is a long, tedious, and exhausting process, under which the patient commonly sinks.

When such an opening is formed through the abdominal wall, it is advisable to enlarge it by incision with a bistoury, or the cautery-knife, so as to give free exit to the remains of the fœtus, which should even be extracted by the fingers or forceps. The opening may be safely dilated to the necessary extent for this purpose, because the sac will almost certainly have contracted large adhesions for some distance around.

In the case of pointing and *perforation into the rectum* taking place, a similar course should be pursued; but the extension of the opening

[1] St. Thomas's Hospital Reports, 1871.

must be more limited. In either case, during the voiding of the fœtal bones, and after they have been all collected, if any offensive discharge continue, the cavity of the sac may be washed out from time to time by injecting a solution of iodine, permanganate of potash or carbolic acid.

Occasionally, but less frequently, elimination takes place by *the bladder*. In this case it may become necessary to dilate the urethra, which is easily done, so as to admit the finger or a lithotomy forceps, to facilitate removal of bones.

Another issue of abdominal and tubo-ovarian gestation is the *carrying to term*, when signs of labor supervene. The phenomenon offers points of remarkable physiological and clinical interest. It ought to throw considerable light upon the vexed problem—What is the cause of labor? If unmistakable labor-effort occur when the fœtus is inclosed in a sac quite independent of the womb, we are entitled to exclude the womb as the primary seat of the cause of labor. And, as we cannot ascribe to the artificial womb in which the fœtus happens to be contained, greater virtue than the natural womb possesses, we are driven to conclude that the primary cause of labor lies in the fœtus, unless we imagine some power resident in the mother. But this last hypothesis seems difficult to admit. I rather incline to the opinion that when the fœtus has attained its full development, when its organs are prepared for external life, some change takes place in its circulation which involves a correlative disturbance in the maternal circulation which excites the attempt at labor. Sometimes, even, a sanguineous show takes place from the vagina.

The seat of the labor-pains is not even clear in these cases. Velpeau believed the seat of the contractions to be the fœtal cyst. If the cyst be formed by the Fallopian tube, its muscular wall may be so developed as to possess true contractile power. The same remark applies if the sac be developed between the layers of the broad ligament. Dézeimeris thought the contraction was in the uterus, which in tubal cases at least is sufficiently developed. In a tubo-ovarian case which had passed into the abdominal form, the constitution of which I investigated with Dr. Hall Davis and Dr. Cayley, abundant smooth muscular fibres were found in the walls of the sac.

Whenever the sac takes its origin in or involves the tube, broad ligament, or ovary, we may expect to find muscular fibres in its walls.

Whatever the initial cause of labor, the attempt is necessarily abortive. The pains subside, notwithstanding all the help derived from a duly irritable nervous centre, excited by impressions emanating from the fœtus or its sac, and often vigorously seconded by emotional and voluntary actions. Under these the sac may burst. Perhaps the attempt is renewed at several intervals.

Treatment.—What is the best course to pursue? It is not necessary to say, that in the first place, accurate knowledge should be obtained as to the state of the uterus. Is it certain the uterus has no concern in the pregnancy? It is proper, I think, in all cases, to dilate the cervix, so as to permit full exploration of the cavity. And this exploration should be especially circumspect and deliberate, for although we may be sure that the cavity so examined is empty and has nothing to do with the pregnancy, the uterus may be double; the unexplored cavity may contain

the fœtus; or the gestation may be interstitial; that is, in one horn of the uterus.

The fœtus dies in many cases probably of asphyxia; in others from hemorrhage into the placenta. Large clots were found in the placenta by Koeberlé.[1]

Supposing that we are able to exclude all forms of uterine gestation, ought we to undertake to deliver, and how shall we do it? It will help us to answer this question if we examine the results that may occur if nothing be done. The fœtus dies, the vascular system which was brought into activity for its support becomes atrophied; the sac assumes the character of an inert mass; the system accommodates itself more or less to the burden, and things may go on for an indefinite time. There are instances of women having carried an extra-uterine gestation for forty, even fifty years, ultimately dying of independent disease or old age. The sac may become calcareous, or retain its soft structure; but it is almost always found intimately adherent to abdominal viscera. The fœtus may undergo one of several changes; for several years the fleshy part may be preserved, the skin retaining much of its original character, and the muscles also. The surface, however, is generally converted into adipocere. After a further time, the soft tissues, having first undergone this fatty metamorphosis, break down, leaving the bones bare. These next become separated. The cyst-walls inflame and suppurate, and a fistulous communication is opened with the exterior of the body, or with the bowels.

If the attempt at elimination be towards the surface by the abdominal wall, the skin becomes red, a tumor forms which becomes fluctuating; there is, in fact, an abscess which will burst if it be not opened. Considerable irritative fever attends the process; pus escapes from the opening at first, and it may be long before any part of a fœtus is recognized. A probe should be introduced to feel for solid substances; and the opening should be enlarged by the bistoury to permit the freer exit of the bones. Every bone should be carefully preserved to reconstruct the skeleton if possible, and thus to satisfy ourselves as to the progress of the case.

If the attempt be made by the bowel, commonly some distress in defecation arises, perhaps obstruction of the bowels, then sanguineous discharge or dysenteric symptoms. Pelvic inflammatory symptoms attend. If examination be made by the rectum, a projecting tumor may be felt, and through its walls we may make out solid bones. If this be clearly established, it is advisable to puncture the sac at once by a bistoury or cautery knife, and to aid the exit of the bones by fingers or forceps. There is a great advantage in the vaginal elimination, if a sufficiently free opening be made. The drainage is more easy and perfect. There is a greater tendency to contraction and obliteration. Access for observation, injection, and extraction of bones is more easy.

Or, in other cases, the fœtus undergoes a calcareous metamorphosis. This seems the change most compatible with long life of the mother.

[1] Des Grossesses extra-utérines et plus spécialement de leur traitement par la gastrotomie, by Keller. 1872.

There is a specimen in St. Thomas's Museum, for which I am indebted to Mr. R. W. Watkins, of Towcester. The fœtus had been retained for forty-three years. It is an admirable specimen of "Lithopædion," or conversion of the fœtus into stone. (*Obstet. Trans.*, vol. viii.)

But this conversion of the fœtus into a harmless mass must be regarded as a rare and fortunate accident. Various circumstances may arise to disturb the tranquillity of the sac, light up inflammation, and bring about dangerous, even fatal changes. A not uncommon circumstance thus acting, is a subsequent uterine pregnancy. The enlarged uterus may press upon the fœtal sac, and thus mischief may arise even during pregnancy. But the period of labor is especially perilous. During the expulsion of the uterine child, the extra-uterine sac is exposed to damage. The sac may be fixed low down near the pelvic brim, and be a direct obstacle to labor. Accordingly, the histories of many cases show, that a supervening uterine labor has kindled the dormant mischief, and caused death. Cases are, however, known, in which women, carrying an extra-uterine fœtus, have gone through a second and even several labors. They rarely escape in the long run. The danger is so great that it ought to influence our course of action.

I have stated my opinion that rupture of a tubal gestation-sac is not necessarily fatal. The blood effused may fall into the retro-uterine pouch, become segregated there, whilst the remains of the sac, with or without the embryo, may be shut off from the general peritoneal cavity by plastic effusions, and shrivel up. This view is confirmed by a remarkable case published in the *Obstetrical Transactions*, 1864, by Dr. Haydon, the specimen being reported upon by Drs. Tyler Smith and Braxton Hicks. A young woman became pregnant, and was supposed to have aborted, but no fœtus was seen. She was at the time dangerously ill, and not expected to live. Four or five years later she again incurred the risk of pregnancy, and six months afterwards died under symptoms of internal abdominal rupture. A gestation-sac in the right tube had burst, and a fœtus of three months' development had escaped; and appended to the edge of the rent was a small irregular solid mass, which proved to be a small fœtus packed very tightly within a membrane. The conclusion drawn was that the patient had had two distinct tubal gestations; that the first ended in rupture and isolation with shrinking of the embryo; that the second, occurring some years afterwards, ended by fatal rupture of the sac six months after conception, the embryo having died three months before the rupture.

Diagnosis of Abdominal Gestation from Ovarian Tumor and Normal Gestation.—The recognition of freely fluctuating ovarian tumors is generally easy; but difficult when the tumor is for the most part solid. Ovarian tumors are occasionally irregular in shape, and present hard projections which, if the mind is occupied with the idea of pregnancy, are readily mistaken for fœtal limbs. After the utmost pains have been expended in order to arrive at a conclusion, an exploratory incision may offer the only satisfactory information.

As to the diagnosis of one form of extra-uterine gestation from another, Scanzoni declares that this is impossible during life. This must be taken with some qualification. The abdominal form at least may commonly be

distinguished from the tubal by its greater development, by its longer history, and by its terminations.

The abdomen is generally less tense than in normal gestation; it is expanded transversely; the umbilicus is often strongly drawn in. If the fœtus is living its movements may be felt more distinctly, and are often more violent than in ordinary gestation. The placental *souffle* is said to be rarely heard. But Parry relates a case in which this sound was heard with unusual intensity by himself and Drs. Duer, Ellerslie Wallace, and Goodell, of Philadelphia.[1] The os uteri may feel like that of the pregnant uterus, the cervix being open. The body of the uterus is likely to be deflected to one side, and possibly fixed by adhesions. This fixing of the uterus, infinitely rare in uterine gestation, would raise a strong presumption in favor of extra-uterine gestation. In almost all these cases the uterus is elongated. This elongation and the direction imparted to the organ will be defined by the sound, if the circumstances seem to justify the use of this instrument. Or the sound in the bladder may aid in defining the position and size of the uterus.

When the fœtus is dead, the abdomen sinks; the breasts fall; the uterus resumes its ordinary state, remaining, however, somewhat above its normal length. The history will help. The subject will have been conscious of being pregnant. There will, probably, have been indications of peritonitis. Usually the liquor amnii is absorbed. But occasionally, as in a case related by Hutchinson,[2] and in one which I saw with Dr. Roper, fluid accumulates. If there is fluid enough in the cyst to permit of mobility of the fœtus, the fœtus may be felt to gravitate on putting the patient into the knee-elbow posture.

The question of *treatment* has to be discussed under four different aspects.

1st. Under the condition of early rupture, laparotomy might, as in the case of tubal gestation, be resorted to with a view to stopping the hemorrhage. Velpeau, Duparcque, Kiwisch advised it. Koeberlé says he would not hesitate to do it.

2d. When the stage of danger of rupture has passed; that is, after the fourth month.

3d. When labor supervenes at term.

4th. When labor has passed over and the child is dead.

2. What is to be done during the life of the child? Shall we wait, pursuing simply an expectant course, or shall we take means to kill the child, so as to stop the developmental stimulus, trusting to the reduction of the sac, to isolation from the general system, and atrophy? or shall we resort to abdominal section, or other sure way of opening the fœtal cyst so as to extract the child? The decision is extremely difficult. During the developmental stimulus, the sac and surrounding structures are full of blood. To make incisions into them at this time, or even to puncture them is attended with serious danger from hemorrhage. If the opportunity of tapping the sac at an early date has gone by, I think it

[1] Extra-uterine Pregnancy, its Causes, &c. By John S. Parry, M.D. Philadelphia, 1876. This work should be consulted for much valuable information and judicious discussion.

[2] Lancet, 1873.

will be better not to disturb the sac until the full term of pregnancy has arrived, when labor-effort is present, or when we know the child is dead. In one case[1] Dr. B. Hicks, having felt a fœtus of about three and a-half months in a cyst between the rectum and the vagina, tried to destroy it by passing a strong galvanic current through it. Although the fœtal movements ceased during the administration, the embryo survived. A month later Dr. Hicks passed a small trocar into it. On the fourth day the patient died under symptoms of internal hemorrhage. Two pints of fluid blood were found in the peritoneum. Duchenne's plan of giving a shock from a Leyden jar might have answered better.

3. What is to be done when the natural term of gestation arrives, the child being alive? New dangers now arise. The cyst may burst. There is renewed danger of hemorrhage, and of peritonitis. And, not seldom, accidents follow quickly on the death of the child. The cyst has on several occasions burst during the early days following false labor, and acute peritonitis has proved fatal. To obviate these dangers, Levret advised laparotomy. So did Gardien, saying the placenta might be left. Velpeau and Kiwisch also advised it. Keller, who represents the opinions of Koeberlé, is in favor of the proceeding. He cites nine cases in which this, the primary operation, was performed, seven children and four mothers being saved. He narrates eight other cases, in which the operation might have been performed with advantage, the opportunity being lost.

It must, however, be remembered that in a large proportion of cases the labor subsides, the dead child is tolerated, and for a time at least the mother goes on without serious distress. It is true another phase of danger succeeds, but the period for this may be remote. Looking first to the mother's safety, I think we must decide that this is best attained by not resorting to any operation to remove the child. The rule of action may be expressed as follows: If the labor-symptoms subside without sign of grave injury or hemorrhage, do not interfere. If, on the other hand, there arise evidence of severe injury, causing shock, peritonitis, or exhaustion, open the abdomen and remove the fœtus.

A weighty objection against opening the sac to remove the child whilst alive or recently dead, rests on the uncertainty as to the nature of the sac. In some abdominal cases it can hardly be said that a true sac with defined walls exists; the placenta may adhere directly to the back of the uterus, to the surface of the intestines, even partly to the kidney, or as in a case of Koeberlé, to the anterior abdominal wall, so that it was divided in the incision necessarily made to open the cyst. It may be almost impossible to cut down upon the fœtus without disturbing attachments to such an extent as to produce hemorrhage that would probably be fatal. The case differs essentially from that of the Cæsarian section. In laparotomy for extra-uterine gestation none of the favorable conditions proper to the Cæsarian section are present. The placenta is almost always much spread out, and sometimes very adherent. Moreover, if the extraction of the placenta were possible, would it be prudent to effect it? The placental insertion is not endowed with contractility as in uterine gestation;

[1] Obstetrical Transactions, 1866.

the maternal sinuses will remain gaping, and hemorrhage will be great. This objection to laparotomy whilst the child is living, loses some of its force if the attachments of the placenta are religiously respected, as the greater number of operators have understood the necessity for doing. The elimination of the placenta is then effected slowly, and the maternal vessels have time to contract and to become obliterated.

The most serious dangers of laparotomy performed at term are those which the elimination of the after-birth may provoke, that is to say, secondary hemorrhage, peritonitis, and septicæmia. But are these as great and real as they appear at first sight? In the first place the peritoneum is not always opened; the cyst has contracted adhesions with the abdominal walls. If an expectant plan be followed, if opium and perfect rest be employed, the vascularity of the sac and the organs connected with it gradually diminishes, menstruation returns, a degree of contraction takes place, and after a time probably further adhesions tend to complete the isolation. Still the patient's life may be said to be at the mercy of accidents, of which we may have no sufficient warning. The cyst may still rupture, or fatal peritonitis may ensue. If uterine pregnancy supervene, the situation may quickly become critical.

4. If it be decided not to operate during labor, what is the alternative? Shall we operate soon after the child's death? If the mother is suffering, exhausted, in great pain, and adhesions be diagnosed, it may be wise to operate within a few days. The placenta soon ceases to be a source of much danger. Its circulation has ceased. The blood coagulates in its villosities as was observed by Koeberlé.

If we decide to wait, the patient should be kept under vigilant observation. We should be ready to act the moment any sign of rupture or shock occurs. When an eliminative process begins, the propriety of interfering is clear, especially if irritative fever set in. The seat for operative measures will commonly be indicated by the seat of the eliminative molimen. If there be pelvic distress, such as obstruction or irritation of the rectum, crowding the uterus forwards upon the bladder, causing retention of urine, with or without local inflammation, and if we can detect parts of the fœtus or a prominent fluctuating tumor between the rectum and the vagina, this is the place to select. An opening may be made first with a large trocar, and any fluid contents of the sac be allowed to drain off. A sound, or the finger introduced through the opening, may detect the fœtus or bones. Opportunity may first be afforded for the spontaneous evacuation of the fœtus piecemeal. If this does not proceed satisfactorily, no great time should be lost before enlarging the opening with a bistoury or by cautery-knife; and, if feasible, of extracting the fœtal parts by finger or forceps.

If the effort be directed to the abdominal wall, the usual signs of abscess mark the point selected. The most common places are the neighborhood of the umbilicus, one or other flank about midway between the umbilicus and the anterior superior spinous process of the ilium, or a groin. In some cases a perforation may have taken place into the bowel or vagina, and there may also be eliminative effort towards the abdomen. The communication with the bowel may be at a point quite out of reach of examination by the rectum. In such cases the indication is to operate through