Ectopic Gestation

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Not to be given away as cases are numbered.

ECTOPIC GESTATION.[1]

THE discussion of the subject of ectopic or extrauterine pregnancy is of interest to the medical profession and of value to the laity. The physician is anxious to make a diagnosis and the lay woman is anxious to benefit by it. A great deal has been written of late on the subject and there are many questions that require further consideration.

I made a careful search through many of the original monographs on the subject some years ago, and presented a paper before the American Association of Obstetricians and Gynecologists in 1892 together with a report of a few cases. I am now able to give a further report of my experience, and append to this paper a tabulated statement of the cases upon which it is based.

All writers on the subject are familiar with the work of Dr. William Campbell, who was a teacher of midwifery in Edinburgh and who published his monograph about 1842. He gave a large amount of material with but little attempt at good arrangement, says Tait. His work, however, is a landmark in the literature of the subject.

On this side of the Atlantic, Parry, of Philadelphia, published a very remarkable work on the subject in 1876. Again, later, the subject chosen for the Jenks Prize Essay of the College of Physicians and Surgeons, Philadelphia, about the year 1889, was the diagnosis and treatment of extrauterine pregnancy, and the prize was awarded to John Strahan, of Belfast.

[1]Read before the Alumni Association of Detroit Medical College, June 4, 1902.

Tait, in 1888, wrote on ectopic pregnancy and pelvic hematocele. The work is based on an experience of forty cases.

Since the time when these writings were given to the public several points have been noticed: First, the less frequent rupture of ectopic pregnancy into the broad ligament than was supposed by Tait to occur; second, the ease with which the condition may be diagnosed before rupture; third, the frequency with which the disease occurs a second time in the same patient. It will be my aim to lay stress upon these three points in the present lecture.

I have a record of 45 cases (including one case of ruptured cornual pregnancy) operated upon. They include 3 cases operated on before rupture, 41 cases operated on after rupture, 1 case operated on after full time (ruptured cornual pregnancy), 5 cases after suppuration, 1 case of double ectopic gestation, 3 cases in which ectopic gestation occurred twice in the same patient, 1 case of interstitial pregnancy in its very earliest stage. I will endeavor to give you the outcome of this experience, not embellished in flowery language, but as a simple statement of facts. It will be well, however, to take the subject up systematically.

CLASSIFICATION.—The classification that I adopted in 1892 requires no change. Ectopic gestation may be met with in any part of the tube, from its intrauterine opening to its abdominal end. When the pregnancy is developed in the tube as it passes through the wall of the uterus, we call it interstitial or tubo-uterine; if developed in the middle portion of the tube, tubal; if developed at the ovarian end of the tube, tubo-ovarian or tubo-abdominal.

A pregnancy originating as an abdominal pregnancy has not been proved to exist. Tait says that he cannot believe that a fertilized ovum may drop into the cavity of the peritoneum and become developed there, because the powers of digestion of the peritoneum are so extraordinary that an ovum, even if fertilized, could have no chance of development. If it is possible for the peritoneum to digest live structures so rapidly, why do we find intraperitoneal worms, and how can spermatozoa exist in this region? I have seen intraperitoneal worms free in the cavity of the peritoneum in fish, and I presume that it is the existence of life in the worm that prevents this digestion. The stomach

wall is only digested post mortem. I feel, myself, that although abdominal pregnancy *per se* has not been demonstrated, there is no reason why it cannot occur.

A pregnancy originating as an ovarian pregnancy has not yet been proved to exist. Parry says "that if an ovarian pregnancy does occur it must be rare and will be curious; if it never occurs, so much the better." Bischoff and Barry are said to have discovered spermatozoa on the surface of the ovaries of bitches shortly after coitus. If it is possible for the spermatozoa to penetrate the wall of the ovary and produce an ovarian pregnancy, then, as a consequence of Bischoff's and Barry's observations, ovarian pregnancy should be frequently met with.

There are two conditions that must not be confounded in the classification of ectopic gestation. The first of these is pregnancy in a bifid or bicornuate uterus, and the second is a pregnancy occurring in a rudimentary uterine horn. These conditions must, however, be considered in the differential diagnosis of an ectopic gestation.

PATHOLOGICAL ANATOMY.—After the impregnated ovum has become arrested in the tube, a decidua serotina, if not a decidua vera, is formed; the chorionic villi develop. This development is beautifully shown in an early impregnated uterus of the rabbit. I have a slide prepared from such a uterus while a student in Zurich. The tubal wall, into which the chorionic villi push themselves, becomes thinned, and this is well shown in one of my specimens of unruptured tubal pregnancy. The specimen had not ruptured, but was on the point of rupturing.

Still further changes now take place. Blood vessels become increased in size and in numbers, the parts become very much congested, and the swelling of the tube, as seen in several of these specimens, closely resembles a small myoma in its interior. A decidua is formed in the interior of the uterine cavity; this decidua forms early, but is not likely to be shed until after the death of the ovum takes place or the tube has ruptured. I show here a specimen taken from a woman who died at our Union Station a few months ago. She died from intraperitoneal hemorrhage that was produced by rupture of a tube containing an ectopic gestation. Even though the pregnancy was of short duration, the decidual lining can be distinctly seen.

A tubal pregnancy is frequently injured by the rupture of its

own vessels; blood is thus poured out around the ovum into the interior of the tube. The progress of the condition now depends largely upon the site occupied by the impregnated ovum. The spot in which earliest rupture takes place is near to, or in, the uterine wall where the tube pierces the muscular structure of this organ. The middle portion of the tube allows of much greater distension, and, as a consequence, the pregnancy in this situation will proceed further without rupture. When the ovum is situated toward the abdominal ostium of the tube, tubal abor-

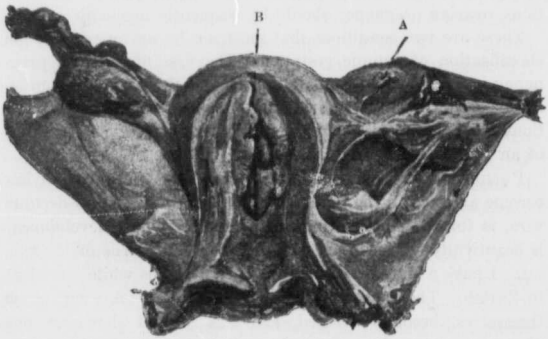

FIG. 1.—A, ruptured tubal pregnancy; B, decidua *in situ*.

tion is liable to occur through the fimbriated end. This leak may only be small, or, in other words, a tubal "drip."

Rupture of the sac may occur at any of the sites liable to be occupied by the impregnated ovum, and the result may or may not be fatal to the mother and may or may not be fatal to the fetus.

The ovum survives the rupture in only a very few cases. The site of rupture in the interstitial variety may be so small as almost to escape detection, as is shown in the specimen here exhibited (Fig. 2) and reported in the table as No. 34.

Tait says that rupture may occur as early as the fourth week. I think I have seen it occur earlier. In THE AMERICAN JOURNAL

OF OBSTETRICS, October, 1895, one of my cases is recorded that ruptured at a very early stage—I thought about two- or three-weeks gestation. A plate is there given, drawn from nature, but the plate does not exactly represent the size of the tube at the uterine end. It was smaller than it is there represented and corresponded more nearly with the condition of the tube on the distal side of the rupture.

The bleeding from an ectopic gestation may be either intraperitoneal or extraperitoneal. Intraperitoneal hemorrhage may occur in two ways: first, by direct rupture of the tube into the peritoneal cavity; second, by the tubal drip or a leakage, drop

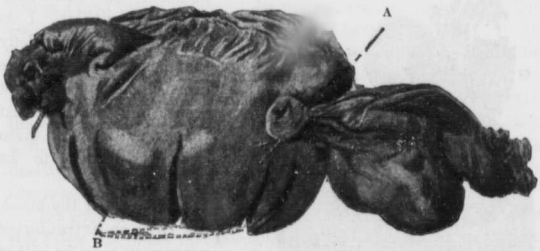

FIG. 2.—Interstitial pregnancy, very early rupture (Case 34). A, site at which uterine wall was ligated to control hemorrhage; B, cervical portion of uterus cut at various points.

by drop, of blood through the fimbriated end of the tube. When extraperitoneal it becomes so as a consequence of rupture through the mesosalpinx into the layers of the broad ligament. A great deal of stress has been laid upon this latter form of rupture, but in my experience I have not met with it.

In the table it may be noted that I found distension of the broad ligament on a certain side after opening the abdomen, but that the sac was peeled out as the operation proceeded. Had the rupture been into the layers of the broad ligament it would have been impossible to have peeled out the sac in this way.

On superficial examination many of these cases will simulate a mass in the broad ligament, just as those cysts do that were

formerly recorded, and that are perhaps still recorded, by the inexperienced as intraligamentous cysts. The cysts referred to are now known to be under the broad ligament—subligamentous and not intraligamentous. They can be readily distinguished owing to the fact that the tube will be found stretched along their upper surface. On closer inspection they will be found doubled under the ligament, but intimately associated with it. I do not for one moment deny that hemorrhage into the broad ligament does not occur, but I must insist that very few of these cases are brought to the operating table.

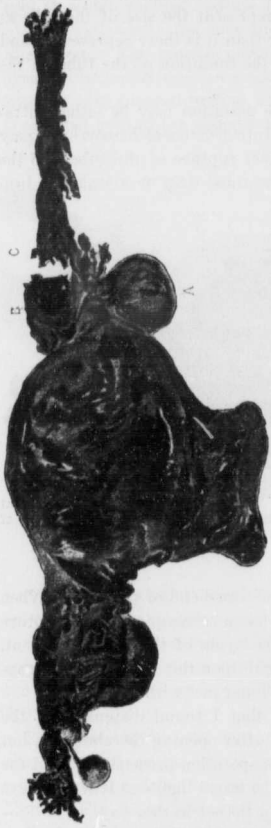

Fig. 3.—Very early rupture of tube containing ectopic gestation. (From American Journal of Obstetrics, October, 1895.)

I take it that the bleeding from an extrauterine pregnancy may be either slow or rapid. When slow the blood coagulates; when rapid it does not coagulate to such an extent. When the blood coagulates it produces a mass; when it does not coagulate no such mass is produced. When the hemorrhage is slow and the blood coagulates adhesions are rapidly formed around the site of the hemorrhage, and in a short time just as much tension will be produced in this way as can be exerted by the loose layers of the broad ligament. After a time the amount of blood

will be increased by fresh hemorrhage and the adhesions will no longer be able to retain the mass, and, as a consequence, free blood will be poured into the peritoneal cavity, and, if in any large quantity, will be found as high up as the liver and spleen. When the blood flows slowly the patients have attacks of syncope and of pain, and if the hemorrhage ceases for a time they resume apparent good health. The mass continues to increase in the pelvis so long as the hemorrhage continues intermittently.

In support of his argument in favor of broad-ligament rupture, Tait says that peritonitis rarely occurs in cases of broad-ligament rupture and that the talk about collections of blood becoming encysted is the veriest nonsense. I beg to assert that the blood does become encysted and that I have removed such encysted blood many times. It is not difficult to understand how we may have the organization of this blood clot without an appreciable amount of inflammation. Such organization of the blood is not a result of inflammation. Campbell recognized this feature years ago, and said in his book that the connection with the original mass—meaning the poured-out blood—through time, with the adjacent parts becomes so intimate that, when superficially considered, the ovum may seem to be involved by the layers of the broad ligament.

Tait considers that, in many cases after other operations upon the tubes, the mass that occasionally forms is an intraligamentous hematocele. There has been no proof adduced that these masses are intraligamentous hematoceles. Secondary hemorrhage is a well-recognized occurrence after the ligature of the blood vessels in other parts of the body, and among these friable, dense, and edematous structures in the pelvis there is no reason why secondary hemorrhage should not also occur. When these hemorrhages do occur it is difficult to understand why they should select the layers of the broad ligament instead of the pelvic cavity itself. I am satisfied that oozing may take place from the stump of an amputated ovary and tube into the general peritoneal cavity among the intestines, and that this oozing may cease and the blood clot may be absorbed or require vaginal section for its removal (as in a case of Dr. E. O'Reilly, of Hamilton).

Tait says in his "Lectures," on page 37: "Thus I tied the pedicle of one ovarian tumor with catgut and the patient died on the fourth day after operation. I found a large intraperitoneal hematocele, due to the gestation and loosening of the ligature." He states that these hematoceles produced by rupture

into the broad ligament produce stricture of the rectum; and in recording such a case, the only evidence that he brings to bear to prove that the effusion of blood was in the left broad ligament is the fact that the floor and the posterior wall of the abscess were found to consist of old laminated blood clot. In his zeal to establish the new theory he goes so far as to state that effusion of blood into the broad ligament may be produced by a sudden arrest of menstruation, and, further, that numbers of cases in which this effusion occurs do not think it worth while to ask for medical assistance and get quite well without it. "And, still further," Tait says, in discussing a case, that was supposed to be one of ovarian pregnancy, reported by Hildebrand, "the very fact that it was discharged by the rectum is conclusive evidence that it rested in the broad ligament."

Such is the argument he uses to prove his case. Do not abscess of the ovary and abscess of the tube burst into the rectum without going through the diverse channel of the broad ligament? I have reported one case, in the Transactions of the Michigan State Medical Society, 1892, of secondary suppuration of an ectopic gestation that ruptured directly into the abdominal cavity itself, and I feel satisfied that these intraperitoneal hemorrhages, producing organized masses, may rupture either into the rectum, bladder, or abdominal cavity at will, and that they are not influenced in any way by the presence or absence of the broad ligament.

If the fetus dies and the placental structures become inactive, recovery may occur whether the hemorrhage has been into the layers of the broad ligament or into the peritoneal cavity, as a consequence of absorption of the masses. If the placenta remains active, a further hemorrhage either into the broad ligament or into the pelvic cavity may occur and serious and dangerous symptoms may supervene. Or, further, suppuration may take place with the formation of a pelvic abscess.

If the fetus lives it may develop in the abdominal cavity, in the layers of the broad ligament, and—but very rarely—in the tube itself. When it develops in the abdominal cavity the fetus is really surrounded by amnion, though it may be difficult to make it out. In one case on which I operated the fetus had escaped from a bicornuate uterus that had ruptured. The pregnancy reached full time and a secondary rupture of the sac occurred at the end of the ninth month. Primary rupture did not take place into the broad ligament. The sac surrounding the

fetus might easily have been mistaken for broad ligament at the time of operation. The placenta after rupture may remain within the main gestation sac, or it may be partially extruded and, with the continuance of its growth, may spread out over the neighboring viscera.

When tubal abortion occurs the placenta is of course extruded into the abdominal cavity, and under such circumstances it seems hardly probable that it can have any power of taking on new adhesions to continue its life. If the placenta remains entire within the gestation sac after the extrusion of the fetus, there will then be two sacs, one containing the fetus and the other the placenta, and the cord will pass through an opening communicating from the one to the other.

Some of the Rarer Conditions.—*Interstitial pregnancy* is but rarely met with. I have met with it in one case, of which the following is a report: Mrs. S. (No. 34 in table). Patient of Dr. Bryans, of Toronto. She had missed one period; had slight hemorrhage from the uterus. Before the doctor saw her she had fainted three or four times. Had been taken ill at noon on the previous day with sudden, severe pain in the abdomen. She was sent into the hospital under my care, and the case was, unfortunately, not correctly diagnosed by the house surgeon, as he thought the patient was threatened with a miscarriage. In the morning, when I saw her, she was almost moribund. Operated, however, and found the abdominal cavity full of blood. It was very difficult to make out the point from which the hemorrhage was coming. Drew up one tube, found it healthy; drew up the other tube, found it healthy, and was for a moment at a loss to know what to do. On raising the uterus I found a small spot on its anterior wall behind the junction of the round ligament with the uterine fundus. On sponging this off I could make out distinctly a small cavity about the size of a small pea, with dark edges, and from which blood oozed. It was evidently a rupture of an interstitial pregnancy of but very short duration. The patient died the same afternoon and I have here the specimen to show you (see Fig. 2).

Interstitial or tubo-uterine pregnancy may, however, continue to grow for several weeks, up to the end of the fourth month, or even longer. Rupture may take place either downward into the cavity of the uterus or upward into the abdomen. We have no positive evidence that a downward rupture has ever taken place without coincident rupture into the abdomen, but rupture into

the abdomen alone has been met with. Very severe hemorrhage is one of the main features of this form of extrauterine pregnancy. Taylor met with but one case in his series of 42, Lawson Tait met with but one case in his series of 40, and I met with but one case in a series of 45.

Intra- and Extrauterine Pregnancy.—My friend Dr. Strathy, of our city, has met with such a case. He has kindly furnished me with the following notes: The patient's first child was born after an ordinary labor of a few hours. Another child was then felt to be in the abdominal cavity. It could be easily made out and the fetal heart sounds could be heard. The abdomen was not opened until the following day, when the child was removed without trouble. The placenta was found situated posteriorly over the psoas muscle and was not removed. Hemorrhage began at the time of the operation and could not be controlled, and the patient died four or five hours after.

Such an occurrence emphasizes the fact that it is extremely dangerous to operate during the life of the fetus.

Double Extrauterine Pregnancy.—I have met with one case of double extrauterine pregnancy, of which the following is a report: Mrs. E. (No. 42 in table). Patient of Dr. Andrew Eadie. Was taken ill one night with sudden, severe fainting spells while lying in bed. Was not seen by Dr. Eadie until the morning, when, on examination, he found a large mass in the pelvis behind and to the left of the uterus. I saw her at once and from her appearance judged that the case was one of ruptured ectopic gestation. She had the peculiar coloring of the skin so frequently noticed and a collapsed appearance. On further inquiry it was found that in August she had menstruated. In September she had seen very, very little; in October again but little was seen. Some pieces of decidua had come away from the uterus, but they were not preserved. The breasts indicated pregnancy. On examination, found blood clot, breaking down under the finger. Was satisfied that the case was one of ruptured extrauterine pregnancy.

On November 1, 1901, in the Toronto General Hospital Pavilion, assisted by Dr. Eadie, I opened the abdomen in the median line and found the abdominal cavity full of blood. On passing the fingers down to the right side, found a small mass; on drawing this up, found it to be omentum with an ectopic-gestation sac under its folds, running up to the surrounded Fallopian tube. On removing this sac the Fallopian tube was torn off; ovary and

tube on this side were ligated with silk. As soon as this gestation sac was disturbed a great deal of fresh blood was poured out. The fingers were then passed down to the other side as a matter of routine, and to my surprise I found another gestation sac connected with the left tube. This was rapidly removed from its adhesions, and on its removal it burst and the liquor amnii escaped, together with a three-and-one-half-months fetus. The two gestation sacs were, therefore, of different ages, and the right one, though smaller, was certainly active as well as the left. The pedicle was then tied off on the left side, a portion of

A B

FIG. 4.—Case 42. Double tubal pregnancy. A, right side, eight weeks; B, left side, twelve or fourteen weeks.

the ovary being left to continue menstruation. Abdominal cavity was washed out rapidly and the patient almost sank on the table. Subcutaneous injections of salines were given under the breasts, the arms and legs bandaged, a drainage tube was placed, and the wound closed with silkworm gut. The patient developed pleurisy with effusion into the left chest, from which I removed twenty-eight ounces; but, notwithstanding this fact, she made an excellent recovery.

The fact that both sides were active proved to me that it is quite possible to have pregnancy occur in one tube and then, at a subsequent date, occur in the opposite tube while the first is still

developing. The pregnancy in one tube, in this case, was evidently of three and one-half months' duration, while the pregnancy on the other side, we judged, was of about two months' duration.

Ectopic Gestation Occurring Twice in the Same Patient.—My experience with cases occurring twice in the same patient is as follows (three cases):

CASE I.—Mrs. H., æt. 24 (No. 3 in table). Operated on July 6, 1891. Had no children, but thought she had miscarried. Had passed three weeks over her monthly period, and had become unwell and remained so for seven weeks. The flowing then ceased and commenced again two or three weeks after. Severe pains, like labor pains, appeared; she became collapsed. The collapse disappeared and on June 30 she walked to the hospital. On examination a mass was found in front and to the right side of the uterus. Returning, two days later, to the hospital, I operated and found the abdomen filled with old dark liquid, and not clotted, blood. The woman had evidently been going around with this blood in her abdominal cavity. Removed ectopic gestation from the right side.

(Table, No. 9.) On October 10, 1895, I saw her again with Dr. Noble. Found her collapsed, pale, with all the appearance of internal hemorrhage; precordial uneasiness. Patient looked anxious and very ill. She had gone two weeks past her period. A sudden pain came on shortly after she wakened in the morning. No elevation of temperature. A mass was felt in the cul-de-sac of Douglas and broke down under the examining finger. Removed an extrauterine pregnancy from the left side. Patient recovered. This case was reported in THE AMERICAN JOURNAL OF OBSTETRICS, February, 1896.

CASE II.—Mrs. L., æt. 26 (table, No. 14). Referred by Dr. McMahon. Was nursing child 17 months old. Did not miss a monthly period. Was quite regular until she began, after one period, to flow continuously. This continued for four weeks. Patient was sent to my office, and I found the left tube and ovary normal, right ovary normal, right tube enlarged at its outer end and lying in front of the uterus. Two days after (August 14, 1896) I removed an extrauterine pregnancy, unruptured, from the right tube. Though the tube was unruptured, the abdomen contained old blood, and blood could be seen to ooze from the fimbriated end of the tube when it was drawn up, drop by drop, coming very slowly (tubal drip).

On September 28, 1898 (table, No. 27) saw the patient again with Dr. Fadie. Had missed a monthly period and gone a few days over. Irregular hemorrhage from the uterus and cramp-like pains in the lower part of the abdomen and chiefly on the left side. The two physicians who had seen her formerly saw her again and found a mass to the left side and behind the uterus. I examined her and found the ovary to be close to the uterus and normal in size. Next day removed an extrauterine pregnancy from the left tube. The ovary formed a cyst that had evidently been taken for the gestation sac, and the gestation sac had been taken for the ovary, being hard and firm and unruptured. The chorionic villi were penetrating the tube wall, and the wall might have ruptured any moment. There was no blood present in the abdominal cavity. There was no evidence of ligature or stump of tube on the opposite side, removed two years before. The wall of the uterus was smooth from the fundus downward. Patient recovered. This was reported in THE AMERICAN JOURNAL OF OBSTETRICS, volume xxxviii., No. 6, with the names of the attending physicians.

CASE III.—Mrs. R. (table, No. 20). This case has not been previously reported. Her physician was Dr. Fletcher, of Euclid avenue, Toronto. She had not missed a period, but uterine hemorrhage came on and continued for three weeks. She then had a sudden attack of faintness and became bathed in perspiration. Had pains of irregular character in the lower abdomen. On examination a mass was found behind the uterus.

On January 14, 1898, shelled out an ectopic-gestation sac with the clots found subsequent to rupture. Left tube and ovary were incorporated in the mass and were removed. Patient recovered.

(Table, No. 38.) In June, 1901, saw the patient again with Dr. Fletcher. She had indefinite pelvic pains and had come back on account of these, as we had advised her. On careful examination the doctor found a little nodule, he thought, on the right tube. I examined and found the same. The patient had a slight flow of blood from the uterus. We sent her to her home in the country and advised her to return in two weeks. She did so, and we examined her again and found the mass had increased to double its size, and concluded the case was one of extrauterine pregnancy on the other side.

On June 21, 1901, I opened the abdomen and found a hematoma of the right ovary; drew up the right tube and found an ectopic gestation the size of the end of the little finger. It was

the earliest unruptured ectopic gestation I have ever seen. Removed tube and ovary on that side.

When making my first report of Case 1, in which ectopic gestation occurred twice in the same patient, I looked up the literature of the subject and found but five similar reports that entirely satisfied me as to the correctness of the diagnosis in each case. It cannot be possible, however, that I have had an exceptional experience in this respect. Taylor says that upward of fifty such cases have been recorded. In his own case I find, however, that the first ectopic gestation was not demonstrated by surgical operation or postmortem examination, and, in view of what I have to relate later regarding conditions that simulate ruptured extrauterine pregnancy, I am not prepared to accept reports without such surgical or postmortem verification. In my cases the pregnancy occurred first on the one side and then on the other.

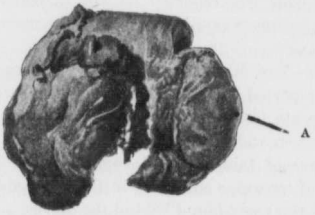

FIG. 5.—Very early unruptured tubal pregnancy at A (Case 38).

Coe has reported a case in which a lithopedion was found on the same side as that on which the ectopic gestation was situated at the time of operation. This demonstrated the fact that ectopic gestation can occur twice on the same side.

Ectopic Gestation Followed by Conditions Simulating Ectopic Gestation and Requiring Operation. CASE I.—In the table this case is reported as No. 1. Was operated on for extrauterine pregnancy December 24, 1886. She had good health and bore one child. Returned again and was operated on December 10, 1889, and a hematosalpinx, the blood of which was uncoagulated, was removed from the other side. There was no evidence to indicate that this was the result of impregnation. The symptoms on the second occasion were a continued flow from the uterus together with a mass on the left side.

CASE II.—This case is recorded in the table as No. 32. Operated on January 5, 1900, for extrauterine pregnancy. She returned on April 24, 1902, and was operated on April 26, when a tubo-ovarian cyst on the left side was removed. She complained, on the second occasion, of pains in the abdomen, chiefly on the left side. Had missed one week, but had no uterine hemorrhage. The mass could be felt on physical examination.

CASE III.—Case No. 13 in the table was operated on for extrauterine pregnancy December 24, 1895. She returned again and was operated on October 19, 1896, for a hydrosalpinx on the left side.

CASE IV.—This case is reported in the table as No. 17. Operated on for extrauterine pregnancy on July 13, 1897, when the right tube and ovary were removed, together with gestation sac on that side. Left tube and ovary looked healthy. She returned again on March 25, 1898, and at the operation I removed a hematosalpinx on the left side.

Cases of Previous Operation for Other Conditions, Followed by Ectopic Gestation. CASE I.—Mrs. McC. (No. 22 in table). In July, 1897, I removed a small cyst of the right ovary. Patient made an uninterrupted recovery. In February, 1898, removed ectopic gestation after rupture of the sac on the left side.

CASE II.—Mrs. R. (No. 44 in table). Was operated on May 4, 1890, for large ovarian tumor. Secondary hemorrhage occurred and the patient was reopened the same day. Recovered with some inflammatory symptoms. On January 28, 1902, operated again and removed an extrauterine pregnancy after rupture of the sac, from the opposite side.

The experience with these cases goes to prove that ectopic gestation follows the woman who has once had a pelvic inflammation. The report shows how difficult it is to be certain that a condition giving certain symptoms is undoubtedly ectopic gestation.

I operated on the wife of one of our leading practitioners for a ruptured ectopic gestation. She subsequently became pregnant and bore a living child, but in the interval, before pregnancy occurred, she was suddenly seized with all the symptoms of a ruptured ectopic gestation. No surgical operation was performed and she made a good recovery. Can I state, in such a case, that the patient undoubtedly suffered from extrauterine pregnancy on two different occasions? I have refrained from including this case in my table of ectopic gestation occurring twice in the

same patient, owing to the uncertainty that existed, but I find that there have been many similar cases recorded without any greater amount of proof.

ETIOLOGY.—Ectopic gestation seems to be intimately associated with inflammation of the tubes. It has been stated that the inflammation has been followed by desquamation of the epithelium lining the mucous membrane, and that, owing to this fact, the ovum has been allowed to settle in an abnormal position.

Another cause of the disease is undoubtedly mechanical obstruction to the progress of the ovum through the oviduct. This mechanical obstruction may be caused by pressure from without or within the tube, by growth, or as a consequence of distortion of the tube produced by adhesions. It has been stated that atrophy of the tube is a cause of extrauterine pregnancy, but I have not noticed such atrophy in any of my cases. The tubes have always appeared to be healthy and normal on the opposite side. It is evident that they were not healthy or they would not have required subsequent operative interference.

My experience does not coincide with that of Taylor, who states that he does not believe that ectopic gestation is produced by a result of previous inflammation of the tubes. I have almost always been able to elicit the history of a previous attack of inflammation from these patients, and this inflammation has frequently been followed by a period of sterility.

I have met with ectopic gestation in a young unmarried woman, and once in a bride of seven weeks who was, I believe, a virgin when married.

SYMPTOMS.—The symptoms of ectopic gestation must be considered: first, before rupture; second, at the time of rupture; third, after rupture.

Symptoms before Rupture.—History of a previous attack of inflammation and sterility; a missed period, more or less subsequent, more or less continuous discharge of blood from the uterus; pelvic discomfort; bearing-down pains, paroxysmal in character, but not severe; soreness or enlargement of the breasts.

Physical Signs.—On examination, with or without an anesthetic, a small mass to be made out in the tube on one side of the uterus, firm in consistence, rounded, regular, and not pitted like the ovary, and at the same time the ovary can be made out as separate and distinct from it.

Symptoms at the Time of Rupture.—The symptoms present before rupture will have added to them the following: sudden,

severe pain; collapse with cold perspiration; precordial uneasiness; pale and anxious face; rapid, thin pulse and dilated pupils; shifting dulness as the intraperitoneal blood shifts with the change of position of the patient; visibly increased vermicular action of the intestines; great restlessness; suppression of urine or great diminution in the quantity of urine; a desire to defecate without the ability to do so.

Physical Signs.—On examination there may be but little to be felt. It will be difficult to make out any small mass in the tube. Examination under these circumstances may give no clue as to the nature of the trouble.

Symptoms after Rupture.—In addition to the symptoms given before and at the time of rupture, we have the following: sallowish, faded-leaf color of the skin from absorption of blood pigment and loss of blood; slight puffing of the abdomen, without much tenderness and without rigidity of the abdominal muscles; recurrence of severe symptoms from time to time; slight elevation of temperature, irregular variations of pulse; irritability of the bladder may be present.

Physical Signs.—Pelvic examination discloses a mass on one side of, or behind or in front of the uterus. The blood clot may be felt to break down under the finger. There is a boggy feeling of the parts. The uterus is found slightly enlarged. A decidua may be discharged entire or in pieces.

I have not found the presence of the decidua of value in diagnosis. It is generally extruded too late and only after serious symptoms have set in. When it is extruded the case very closely simulates one of miscarriage and may be mistaken for it.

Tait says that he saw only one case of unruptured extrauterine pregnancy, and Parry says that it is very rarely that an opportunity is obtained to examine an unruptured cyst. I have brought three or four such specimens to exhibit here to-day. When the symptoms before rupture are more carefully studied and more carefully taught, unruptured extrauterine pregnancy will be more frequently met with. The unruptured cases with which I have met have occurred in the practice of those who have discussed the subject very carefully and who have been thoroughly familiar with the very earliest symptoms and physical signs. The diagnosis has, therefore, been made by them and only subsequently confirmed by me.

These are no "society utterances or library paper expressions," as Tait dubs them, but a statement of facts.

For many years a great deal of difficulty arose owing to the fact that writers endeavored to separate into two what was really one disease. They gave long tables of the symptoms of hemato-

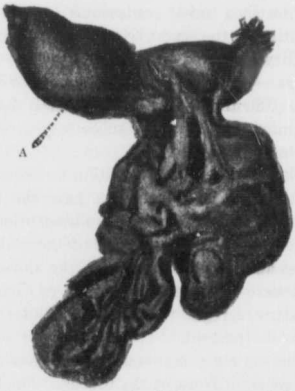

FIG. 6.—Unruptured tubal pregnancy at A.

cele on the one hand and ectopic gestation on the other. We now know that hematocele is, in most cases, due to ectopic gestation and that, therefore, the symptoms of hematocele are practically the symptoms of ectopic gestation subsequent to rupture or leakage.

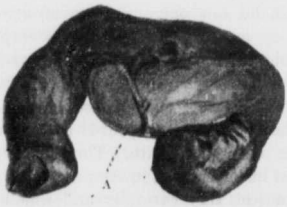

FIG. 7.—Unruptured tubal gestation (Case 26). A, site at which rupture was imminent.

DIFFERENTIAL DIAGNOSIS. *Before Rupture.*—A diagnosis must be made from the following conditions: first, abortion; second, myoma, sarcoma, carcinoma of the tube; third, hematosalpinx;

fourth, hydrosalpinx; fifth, pyosalpinx; sixth, cyst, fibroid, or hematoma of the ovary.

In abortion there will be no mass felt in the tube. The uterus will, in all probability, be larger than in ectopic gestation. In growths of the tube there will be no symptoms of pregnancy; no period will have been missed. In hematosalpinx and hydrosalpinx, as well as in hematoma of the ovary, the symptoms will closely simulate those of ectopic gestation. From the cases recorded it will be seen that it is impossible to make a differential diagnosis until after the abdomen has been opened. In cases of pyosalpinx there will generally be a history of inflammation with an elevation of temperature and an absence of the symptoms of pregnancy. A small cyst of the ovary will frequently produce uterine hemorrhage, coming on after a missed period, but without any of the other symptoms of pregnancy. The cyst can generally be readily made out; it is too dense and rounded and fluctuating to be a tubal pregnancy. The ovarian ligament assists us in coming to a conclusion as to whether the enlargement is tubal or ovarian, and, furthermore, the ovary on that side will be found wanting.

In two of my cases I was enabled to diagnose unruptured ectopic gestation owing to this very fact. The enlargement of the ovary led to the diagnosis of extrauterine pregnancy; the mass in the tube was mistaken for the normal ovary. Fortunately, in each case the abdomen was opened, and, though the enlarged ovary had been mistaken for the gestation sac and the gestation sac had been mistaken for the normal ovary, the patients were readily relieved from what could have been serious danger.

A fibroid of the ovary may be made out by feeling the ovarian ligament, and the irregular and hard outline of the growth itself is its chief characteristic. It is not likely to be accompanied by uterine hemorrhage.

At the Time of Rupture.—Differential diagnosis at this time must be made, first, from acute poisoning; second, from rupture of the bladder; third, from rupture of the stomach or intestines; fourth, from intraperitoneal hemorrhage from some other source, such as ruptured uterus in a case of normal pregnancy, rupture of a pregnant bicornuate uterus, or rupture of a pregnant ill-developed uterine horn; fifth, acute gonorrheal endometritis; and, sixth, attempted abortion.

In acute poisoning there may not be the symptoms of preg-

nancy or hemorrhage from the uterus. Rupture of the bladder is a very rare occurrence and generally associated with traumatism; symptoms of pregnancy will not be present and there will not have been uterine hemorrhage. Perforation of stomach or intestines, not due to traumatism, may closely simulate ectopic gestation at the time of rupture. Symptoms of pregnancy and uterine hemorrhage will be absent and there will, in all probability, have been symptoms of pre-existing inflammatory or other disease. Except in cases of perforation of a gastric ulcer, the patient is not, in my experience, greatly collapsed. Intraperitoneal hemorrhage from some other source cannot be definitely diagnosed from a ruptured ectopic gestation. Acute gonorrheal endometritis will very closely simulate ruptured extrauterine pregnancy. It is accompanied by fever and frequently by a discharge of blood from the vagina in which pus is found, and a discharge of either pus or blood from the urethra on stripping the same with the finger. There is often inflammation of the external genitals. Collapse is not marked; great abdominal tenderness is present. There will be no symptoms of pregnancy and the patient will not have missed a monthly period. Vomiting is often present, as well as rigidity of the abdominal walls.

In cases of attempted abortion there will be found some good reason why the patient does not wish to have a child. Symptoms of pregnancy will be present; temperature very high; pulse of inflammatory type; collapse not marked; rigidity of the abdominal walls. Patient gives evasive answers, though she may acknowledge having passed an instrument.

In the address on "Midwifery" read at the twenty-ninth annual meeting of the Canadian Medical Association, held at Montreal, I presented the table on page 21, that may be of interest.

Intraperitoneal hemorrhage may occur in a small amount and still give rise to severe symptoms. One of the patients on whom I operated for extrauterine pregnancy became pregnant subsequently. After she had missed two periods she was taken suddenly with severe pain in the side, in the lower abdomen, and felt as if something had given way. She had a large hernia from the packing that had been used at the time of the previous operation to check the terrible hemorrhage. I opened the abdomen, fearing that a loop of intestine might have become caught or that some bands had been torn, and feeling that I could, at the same time, repair the large hernia and place her in a better condition.

	Acute Gonorrheal Endometritis.	Ectopic Gestation.	Attempted Abortion.
Previous health.	Good.	Perhaps history of previous attack of inflammation and sterility.	Good. Very likely had children fast, if married.
History of discharge.	Mattery discharge, perhaps swelling of labia.	No mattery discharge.	Leucorrhea. No swelling of labia.
Menses.	Menstruation profuse, commencing perhaps at an irregular time, and lasting for ten days to three weeks. No period missed. Discharge not offensive.	A period missed, then irregular discharges of blood, more or less profuse. Discharge not offensive.	A period missed, perhaps only one or two days. Then discharge of blood lasting indefinite time, as instrument is often introduced at frequent intervals in desire to bring something away. Patient toward last becomes more desperate and uses more force. Discharge often offensive.
Pain.	Gradually growing worse.	Spasmodic. At times very acute. Spreads over a considerable portion of time. Sometimes only one sudden severe pain.	Sudden pain, perhaps followed by spasmodic pains over a considerable period of time.
Collapse.	Not collapsed.	Often collapsed at time of rupture and at each successive hemorrhage.	A partial condition of collapse. If from escape of irritating fluid injected into uterus through Fallopian tubes, definite collapse found, but it does not recur.
Temperature.	Elevated. Often simulates typhoid.	Not very high.	Very high. Simulates typhoid.
Pulse.	Not rapid, unless general peritonitis present.	Varies. Rises with each hemorrhage into peritoneum. Goes up suddenly and comes down quickly.	Very rapid, hard, inflammatory. Remains up.
Rigor.	No rigors as a rule.	No rigors at this period.	Rigors present.
Appearance—Face.	Not much altered.	Pale. Pupils generally dilated.	Anxious. Often slight delirium. Flushed, as if in high fever.
" —Skin.	No perspiration at first. Dry skin.	Sallowish. Intermittent perspiration. At times bathed in perspiration.	Intermittent perspirations, coming chiefly after chill.
" —Abdomen.	Distended, if peritonitis general. Muscles tense, tender.	Slight puffing. Perhaps resistance from intraperitoneal clot. Shifting dulness as clot shifts with patient's change of position. Not very tender. Increased vermicular action of intestines can frequently be seen.	Slight puffing at this stage. Distinctly localized tenderness simulating, if on the right side, appendicitis.
" —Breasts.	No enlargement. No change.	Perhaps enlarged and changed. Often had a period of sterility.	Perhaps enlarged and changed. Often still nursing last child.
Position.	On back. Feet drawn up. Does not care to move much.	Restless. Turns from side to side.	Assumes any position. Perhaps dragging pain if lies on one side.
Vomiting.	At first not persistent unless general peritonitis.	Not a marked symptom.	Irregular vomiting after taking food. Not persistent. Vomiting may have been present before as a consequence of pregnancy.
Onset of symptoms.	Definite history usually given. No apparent reserve, as patient frequently has no idea of cause of trouble.	Definite history given. No reserve. Onset usually definite. No particular anxiety at non-appearance of menses.	No definite history given. Evasive answers. Contradictory statements. Though history tallies closely with that of ectopic gestation, it lacks definiteness. Occasionally, if carefully questioned, shows that she was anxious at non-appearance of menses.
Digital examination.	Matting of parts on each side of uterus. Uterus somewhat fixed.	Mass on one side of uterus and behind. Clot may occasionally be felt breaking down under finger. Boggy feeling. Uterus perhaps slightly enlarged.	Mass usually on left side of uterus, I think from use of right hand in passing instrument, thus perforating fundus at left side. No boggy feeling. No clot felt.
Bladder.	Frequent history of irritability of bladder	Irritability of bladder not a marked symptom.	Irritability of bladder not a marked symptom.
Rectum.	Sometimes gonorrheal proctitis and rectal tenesmus, with passage of blood-stained mucus.	Often constipation and sometimes rectal tenesmus. No blood with any mucus passed. More a desire to have bowels moved without ability to defecate.	Often septic diarrhea.
Health of husband.	Often has had inflammation of kidneys or bladder (so-called).	Good.	Good.

It was only after she was anesthetized that I was able to make out intrauterine pregnancy.

After the abdomen was opened I found a small quantity of blood and a large adhesion binding uterus to the pelvic structures, that had been torn through. She was delivered later on, in the fifth month, in the early morning, and I saw her at 3 in the afternoon. I never had such difficulty in removing a placenta; it was universally adherent. She recovered.

I met with one other case of severe vomiting of pregnancy and collapse that simulated a case of ectopic gestation with rupture. The patient was threatened with a miscarriage and therefore had uterine hemorrhage after having missed a period. The pregnancy had been allowed to go on until the condition from excessive vomiting was extreme. Sudden pain and faintness set in. Upon careful examination, however, a correct conclusion was come to and a miscarriage induced, and even then we feared that the patient would succumb. A few days ago I saw the patient again in a similar condition and was struck with the close resemblance to a case of ruptured ectopic gestation.

After Rupture.—Differential diagnosis must be made from, first, inflammatory disease; second, from tumor of the ovary; third, from pelvic abscess; fourth, from myoma uteri; fifth, from cornual pregnancy; sixth, from pregnancy in an ill-developed horn; seventh, from malignant disease.

The mass discovered in the inflammatory disease is usually situated on both sides of the uterus. It is harder and more sensitive to touch. Great elevation of temperature is noted. Tumor of the ovary is not accompanied by symptoms of previous ruptured ectopic gestation unless it has been twisted on its pedicle. An ovarian tumor, pelvic in situation, that has been accompanied by uterine hemorrhage, and which has become fixed and inflamed as a consequence of a twist of its pedicle, will be difficult to diagnose from a mass left in the pelvis from ruptured ectopic gestation.

Pelvic abscess often results from ruptured ectopic gestation and breaking-down of the clot. Perhaps ectopic gestation is one of the most frequent causes of pelvic abscess. If of inflammatory origin, the history will assist in making a differential diagnosis.

Myoma uteri is usually more solid in consistence and rounder in outline, and the nodules on its surface are a great assistance in making a diagnosis. There will have been no sudden onset of severe symptoms.

It is difficult to diagnose cornual pregnancy, but the severe symptoms of rupture will, in all probability, have been absent. The same may be said of pregnancy in an ill-developed horn. If either of these have ruptured it will be impossible to distinguish from ectopic gestation after rupture. In malignant disease there will not have been any sudden onset of severe symptoms. The disease is accompanied by more pain and is of longer duration.

I had a curious experience with a case having an ill-developed uterine horn. The patient was 41 years of age, mother of four children. Had pain in the abdomen off and on for some time. It began in the left iliac region and passed in various directions. In September, 1891, had what she called typhoid fever and peritonitis; pain continued after this and came on chiefly at the menstrual period. When the patient was only 21 years of age she had had a lump, that appeared the size of a goose egg, to the left of the linea alba, in the lower pelvic region. A poultice was applied to it and it finally opened externally two or three inches below the umbilicus. The abscess remained as a chronic abscess for two years and then healed up. Owing to her indefinite symptoms when I saw her some years later, I decided to open the abdomen, and on April 9, 1892, this was carried out at the Toronto General Hospital. I found a bicornuate uterus; the mass to be felt to the left was one horn apparently only slightly attached to the cervix. This was determined by the situation of the round ligament joining its outer angle and the absence of broad ligament between the two uterine masses.

A year or two later I was called to see the patient with Dr. Rowan, of Toronto, and found her suffering from severe paroxysmal pains and obstinate constipation. She had been suffering from these pains for some weeks. The rectum was obstructed and a large mass was to be felt in the pelvis and could be felt above the pubes. I knew that the patient had a rudimentary uterine horn and decided that this mass must be retained menstrual fluid. She was not living with her husband. Upon puncture through the vagina a large quantity of black, tarry blood, resembling retained menses in cases of imperforate hymen, escaped. Had I not known the exact nature of the case I would have taken it to be one of pelvic hematocele caused by a rupture of an ectopic gestation into the broad ligament, but would have been puzzled by the tarry appearance of the blood.

Cornual Pregnancy.—In cornual pregnancy the round ligament will be found to run to the outer side of the mass, whereas

in tubal pregnancy the round ligament runs to the inner side of the mass toward the median line.

Differential Diagnosis at Full Time before Death of Child.—The diagnosis must be made at this time between ectopic gestation and *(a)* a normal intrauterine pregnancy with a very thin wall; *(b)* displacement of the pregnant uterus by a fibrocystic or myomatous tumor; *(c)* bifid uterus with pregnancy in one chamber. I have met with several cases of thin uterine wall with intrauterine pregnancy that felt as if the pregnancy must be outside of the uterus, but on more careful examination I was able to satisfy myself that the condition was a normal one. In cases of displacement of the pregnant uterus by a myomatous tumor I have never had any difficulty in making a diagnosis.

I have met with one case of bifid uterus with pregnancy in one chamber, and the report is as follows: Miss E., æt. 23. Had menstruated and had a discharge of blood from the uterus. Menstruation then ceased and she had seen nothing for two months. There had been no abdominal pain and there was no history of collapse. Patient looked in good health. I was so uncertain as to the diagnosis of the case that I decided to use the uterine sound. This passed in toward the right a distance of about three inches. A tumor could be distinctly made out, to the left side of the uterus, as large as a pregnancy at about three and one-half months. I felt satisfied that the patient was pregnant and decided that, as the uterus was empty, the pregnancy must be an extrauterine one. There was milk in the breasts. Operation was advised and the abdomen opened on November 22, 1900. I found a tumor that looked red and exactly like a pregnant uterus. The sound was passed again and it went in, as before, toward the right the same distance. On careful inspection the case was found to be one of a pregnancy in one horn of a uterus bicornis unicollis. Abdomen was closed and the patient went on to full time and was attended by my friend Dr. McIlwraith, of our city, who found the septum present at the time of delivery.

Differential Diagnosis at Full Time after Death of Child.—The diminution in size of the abdomen, the false labor, and the show that occurs are characteristic of this condition. The cervix is oftentimes found to be open, and in my own case (No. 45 in table) the finger could be readily passed up into the uterine cavity and the bicornuate condition of the uterus could be readily made out. The diagnosis must be made at this time between *(a)* slow-growing cancer, *(b)* fibrocystic tumor of the uterus,

and *(c)* tubercular peritonitis. In slow-growing cancer the increase is steady, and if there is any great increase in the growth the temperature chart will show evidence of suppuration, and this suppuration will be most likely to accompany an extrauterine pregnancy. A diagnosis between extrauterine pregnancy at this time and a fibrocyst of the uterus must be a difficult one.

I know of a case of tubercular peritonitis with the nodules floating about in the encysted fluid, simulating fetal parts, mistaken by an able surgeon for a case of extrauterine pregnancy after the death of the fetus. It was only after an exploratory operation had been performed that the diagnosis was settled.

TREATMENT. *Operation.*—Tait's first operation was performed in 1883. Operation is now the accepted method of procedure. It is called for to control the hemorrhage, to remove débris that may be dangerous to life, and to overcome the septic conditions that may present themselves.

Some have stated that the great impediment to the adoption of this treatment is the uncertainty of diagnosis. Tait laid down the dictum, however, that when the patient is found in danger of death from conditions within the abdomen which do not seem to be clearly of a malignant nature, but a correct diagnosis of which is impossible, the abdomen should be opened and the diagnosis made certain and thus successful treatment made possible.

He concluded "that in the great majority of cases of *extra*peritoneal hematocele, even when due to ectopic gestation, the disease may generally be let alone, being rarely fatal, and that it is to be interfered with only when suppuration or extreme hemorrhage has occurred. That, on the contrary, *intra*peritoneal hematocele is fatal, with almost uniform certainty, that so soon as it is suspected the abdomen must be opened and the hemorrhage arrested."

I must take exception to this opinion. I am satisfied that the cases of intraperitoneal hematocele are not uniformly fatal, and I have operated on cases that I feel satisfied might have recovered without operative interference, and have left unoperated on other cases, that have recovered, that had been collapsed and almost moribund at a considerable distance of time before I saw them. The fact that the patients had presented all the symptoms of intraperitoneal hemorrhage showed that such cases can recover without operation and that they need not necessarily be cases of hemorrhage into the broad ligament.

But it seems to me that such fine distinctions cannot serve any good purpose. If a diagnosis can be made before rupture—and that it can frequently be made is now beyond dispute—the abdomen should be opened, either through the abdominal wall in front or through the vagina below, and the unruptured tube should be removed. It is not necessary to remove the ovary if it is healthy. This will be a very simple procedure and the mortality, in skilled hands, should be almost *nil*. When rupture has occurred operation should be undertaken without delay. I have in one instance taken the patient in my carriage at once to the hospital at 1 A.M. in order to save delay. I have never regretted rapid action in these cases, but in two cases I have regretted delay. We should not attempt to quiet our fears by endeavoring to decide between tubal drip or weeping, and tubal rupture into the peritoneal cavity or the broad ligament. If your experience tallies with mine you will not often find the rupture into the broad ligament.

If you will do me the honor of carefully reviewing my table, you will see that the lowest mortality accompanies the early operation. When puzzled over these cases one should send immediately for further advice. We should not wait until the next day. If one consultant cannot be obtained owing to the lateness of the hour, another should be procured. Waiting means increased risk to the patient and increased difficulties for the operator. An operation is the only form of treatment in such cases.

The terrible contingencies that sometimes arise when the condition is allowed to proceed are particularly exemplified in Case 28 of the table (Mrs. J.). In that case, after opening the abdomen I found the uterus pushed forward; it looked like a uterus containing a six-weeks pregnancy. Adhesions of the omentum were broken down and these bled very freely. An enucleation of the mass was then started. After a time the finger burst into it and fluid escaped. Then portion of old clot came out. With the finger through the opening a fetus could be distinctly felt and this was extracted. The placental adhesion was now reached and blood gushed out immediately. It came so fast that, in a moment of desperation, I clamped the right uterine artery and then clamped the left one, and decided that it would be necessary to perform hysterectomy in order to get at the hemorrhage. Hemorrhage from these adhesions was terrible. The patient almost died on the table during the operation. Gauze was packed into the pelvis after the surface, from which the placenta had been re-

moved, had been touched with persulphate of iron. The blood seemed to come from hundreds of spots and to well up from them. Pressure was applied externally, rectum packed with gauze, vagina packed with gauze, and a firm bandage placed *in situ*. Notwithstanding the fact that the uterus, tubes, and ovaries had been removed with the mass, the bleeding continued from the surface of the cul-de-sac of Douglas and the surrounding parts, so that gauze had to be used in the aforementioned manner. The patient lived for three days.

Such an experience should be sufficient to warn us to wait, in such cases, until after the death of the child or until full time. It is very easy to lay down this rule, but it is not so easy for us to observe it. The life or death of the fetus is difficult to determine, and many operators find themselves face to face with a live fetus and an active placenta, owing to this very difficulty. They would like to draw back, but are forced to go on.

When the pregnancy is advanced vaginal section should give way to abdominal section. Tait believed that vaginal section is an unsatisfactory method for the purpose of saving the child. There are many cases recorded in which great difficulties were met with in getting the child out, and only two cases were known to him in which the child had been extracted alive. His experience is similar to mine and was sufficient to deter him from making another attempt to deliver the fetus in this way. He wrote that he would never, under any circumstances, attack a subperitoneal pregnancy from the vagina. He considered that the child could not be dragged out without tearing tissues in which large sinuses have been abnormally developed, and through structures unyielding as they are this can only be done with much force and with the likelihood of losing its life. If large vessels be torn it is simply impossible to find them and secure the bleeding points.

In one case, that of Mrs. J. (No. 19 in the table), I operated in this way. The following is the history of the case: The patient had been ill five weeks. Had missed a month and then had gone five weeks after that and then went six weeks. Sudden, severe pain in the abdomen came on, and when I saw her, after she had been ill for five weeks, she was profoundly septic. Uterus was pushed forward by a mass as large as an adult's head, and I was satisfied the case was either one of suppurating hematocele from ectopic gestation or retained menstrual fluid in an undeveloped uterine horn.

No.	Name.	Age.	Doctor.	Labors.		Menses.		Irregular hemorrhages.	Other symptoms.
				No.	Last.	Not missed.	Missed.		
1	Mrs. A. Adams No. 1.	38	J. F. W. Ross.	7	4 yrs.	.....	Frequently went 2 weeks over.	Menses occasionally stop six weeks. Dark chocolate color, fetid, profuse. Commenced Dec. 22, lasted till 24th. Came on December 28, lasted till January 4.	.....
2	Mrs. W. No. 74	31	A. Lynd..	5	3 yrs.	.....	10 days over.	Regular to December, since then profuse, June 12 went ten days over. Severe pain some weeks after. Had to lie down. Discharge copious. Unable to get up since. Very weak.	No signs of pregnancy. Case sent as one of probable hematocele or pelvic abscess. My diagnosis was either rupture of ectopic into broad ligament or uterine pregnancy and fibroid.
3	Mrs. H. 47.	24	Hospital service.	0	.....	.....	3 weeks over.	March 20, 1891, unwell; went seven weeks, and again unwell June 9. Taken with pains like labor pains and flowing. Thought had a miscarriage. Collapse. Hot cloths and went to bed. Bleeding continued.	None .....
4	Mrs. L. 66.	30	G. G. Rowe.	1	7 yrs.	... .	Went 7 weeks.	Doctor thought she had a miscarriage and curetted. July 18, menstruated; then went seven weeks, saw slight show.	Thought she was pregnant. After the curetting temperature went to 108°, pulse 130. Temperature rose suddenly. Violent diarrhea. Peritonitis.
5	Mrs. M. 70	28	C. R.* Cuthbertson.	Only married 7 months.		.....	5 days.....	None	No other symptoms of pregnancy. No similar attack before marriage. Removed to hospital to be more closely watched. While there sudden severe attacks of peritonitis and determined to operate at once.
6	Mrs. G. 86	31	R. A. Stevenson and W. P. Caven.	None.....		.....	3 weeks.	After missing three weeks had discharge of blood for three weeks.	Had a miscarriage three years before. Temperature and pulse normal until five days after first attack, when pulse was 130, temperature 102°.

Pain.	Physical examination.	Operation.	Result.	Remarks.
Pains on lifting, coughing, sneezing. Dyspareunia.	After examination per vaginam, I left the house. Hastily called back. Patient collapsed.	Done on second or third day after rupture. Found ruptured tubal pregnancy. Thought probable hematosalpinx, know was pregnancy. Abdomen full of clotted blood.	Recovered.	
Severe. Could not sit or stand. Came on suddenly and simulated labor pains.	Tumor felt in right inguinal region. Very tender. Vaginal examination: Cervix up under pubes. Passed sound four inches, went to left. Uterus moved independently of mass.	Done about thirteenth or fourteenth week. Mass found apparently in broad ligament and not removable. Ectopic gestation. Opened and washed out sac and drained. Hemorrhage at intervals for nearly six months from drainage tube opening.	Recovered.	
Pain like labor pains. Collapse.	June 30 walked to hospital. Examination found mass. To return in two days. Under chloroform a movable mass felt dropping into cul-de-sac, and hard, not boggy.	Operated about ninth or tenth week. Abdomen filled with liquid, not clotted, blood. Blood grumous. Evidently there several days.	Recovered.	Operated at Toronto Hospital July 6, 1891.
After seeing slight show, taken ill with pain in right groin and across abdomen, not very severe. Pain in head and limbs. Put to bed. Pain increased. Went out week after; went to doctor's house. Pain recurred in three days, severe; in bed; appeared weak. Pulse 90 to 120, then up and down. Poulticed. Simulated labor pains. Doctor told her she was pregnant.	Large mass extending nearly to the level of umbilicus, dull on percussion and fluctuating. Uterus three and a half inches in length, empty and in centre of pelvis, pressed by the mass back against sacrum. Diagnosed suppurating hematocele, but not sure whether due to ectopic gestation or not.	Done after five weeks of suppuration. Patient profoundly septic. Washed out clots from abdomen and removed fetal sac of about twelfth week from among intestines and unconnected with tube. Clots in abdomen had become encysted by inflammatory adhesions of intestines and had then suppurated.	Died.	
Five months after marriage seized with sudden pain, right side, low down in abdomen. Went to bed, sent for doctor. Cold sweat. In bed one and a half days. Up and around again. Recurrence of pain. Went to bed again.	Small mass felt on right side of abdomen, low down, in front of uterus and apparently between uterus and bladder, not movable or fluctuating. Diagnosis obscure; thought might be pus tube.	Found secondary rupture of a suppurating semi-organized old ectopic gestation clot. Purulent peritonitis.	Recovered.	
Abdominal pain, uncomfortable but not severe, lasted two weeks. Was straining at stool when sudden severe pain seized, low down in right side lower abdomen. Crawled to bed, got up a few hours after, pain recurred. Three attempts to walk. Pain came each time.	Pelvis filled with a mass. Diagnosed ruptured ectopic gestation, commencing suppuration in the blood clot.	Eighth to tenth week. Abdomen filled with blood, grumous, coffee-ground-colored, and stinking.	Recovered.	

No.	Name.	Ages.	Doctor.	Labors.		Menses.		Irregular hemorrhages.	Other symptoms.
				No.	Last.	Not missed.	Missed.		
7	Mrs. M. 321	34	Rowan and Burgess.	3	5 yrs.	Regular.	.....	.....	Feeling poorly for a week.
8	Mrs. P. 338	34	T. S. Wiley.	.....	.....	.....	1 month, and unwell 6 weeks after.	First hemorrhage that morning. On day before operation husband brought me complete decidual cast of uterine cavity.	Two weeks previously suddenly taken with faintness. Doctor found her in semi-collapsed condition; cold perspiration and rapid pulse. Afterward complained of irritability of rectum; distension. Improved and was up Taken ill, and doctor thought hysterical. Again improved, and then another attack when I saw her.
9	Mrs. H. Second operation. 340	28	T. Noble.	.....	.....	.....	3 weeks over time.	.....	Tender on pressure. Lips pale. Hands and feet felt chilly. Looked ill.
10	Mrs. R 351	29	Hospital service.	.....	.....	.....	.....	.....	.....
11	Miss G. 354	...	J. T. Fotheringham.	.....	.....	.....	2 weeks and began to lose blood.	.....	No symptoms of pregnancy. Out walking when suddenly seized with pain in abdomen. Felt faint and could not walk. Immediately taken to hospital.

Pain.	Physical examination.	Operation.	Result.	Remarks.
Suddenly taken with severe pain. Doctor found her cold to elbows, pulse thready, very pale, evidently collapsed. No pain of any account previously.	Found rapid, thready pulse, knees drawn up, and evidently extravasation in peritoneal cavity.	Could not finish operation at first attempt, owing to great collapse Could only use ether and ethyl chloride. Ectopic gestation, about two weeks' duration, in left tube. Tube completely severed from uterus. Difficult to reach bleeding spot. Tied in a portion of cornu of uterus in ligature. Only removed left tube. Abdomen full of blood clot, scooped out by handfuls. Almost collapsed on table.	Died.	
.....	At once concluded it was ruptured extra-uterine pregnancy. Felt a mass of blood clot in pelvis. Looked very ill. Decided to wait couple of days to prepare her, but suddenly took worse, and decided to operate immediately. Commencing tympanites. Pulse 120.	Peritoneum opened and enormous quantity of blood in cul-de-sac of Douglas. Peeled out ectopic-gestation sac of about third month. Rupture through fimbriated end of tube. Tube end clamped with forceps to stop hemorrhage Fetus not found. Placental tissue. Enlarged tube, size of small orange. Clots washed out and drainage tube inserted. Tube tied with silk.	Recovered.	
In morning suddenly taken with pain in abdomen and nauseated. Pain increased.	Under anesthetic felt blood clot break down under my finger in vagina. Outer end of tube felt somewhat enlarged.	Operated inside of an hour after first seeing her. On opening abdomen blood gushed out. Enormous quantity unclotted blood free in peritoneal cavity. Left tube and ovary tied off. Right had been previously removed, washed out, and drained.	Recovered.	
....		Found tubal gestation ruptured into broad ligament on left side, and removed. Also cyst of ovary and dilated tube on right side; peeled out dense adhesions and ligated. Hemorrhage, morning after operation, through drainage tube. Dr. Temple (in my absence) after consultation opened and found right pedicle ligature had cut through and abdomen full of blood.	Died.	Operation Toronto General Hospital November 13, 1895.
....	Cold hands, depressed pulse, pale lips, all appearance of intra-abdominal hemorrhage. Found blood clot in abdomen on examination.	Ectopic gestation in right side. Placenta extruding through rupture in tube. Tied off pedicle. Fetus about one inch long. As soon as peritoneum cut through, blood spurted out. Enormous clots and fluid blood removed. Washed out and drained. Left tube and ovary not removed.	Recovered.	On examination of specimen large rent found in tube on right side. Through rent placenta seen half extruded. Fetus escaped into abdomen. Bleeding free until pedicle ligated.

No.	Name.	Ages.	Doctor.	Labors.		Menses.		Irregular hemorrhages.	Other symptoms.
				No.	Last.	Not missed.	Missed.		
12	Mrs. W. 385	..	J. A. Amyot.	.....	.....	.....	.....	In November went two weeks over time. December 25 began to flow; flow then ceased a little while in January, but has been flowing ever since (March 19).	....
13	Mrs. F. 423	36	Hospital service.	.....	.....	.....	.....	.....	.....
14	Mrs. L. 443	..	T. F. McMahon.	.....	17 mos.	Regular.	.....	After one month's sickness began to flow and continued to flow four weeks.	.....
15	Mrs. S. 488	..	J. W. Rowan.	.....	15 mos.	.....	Menstrusted once since confinement and then went 5 weeks,	.....	Pulse somewhat improved by stimulants.
16	Mrs. Y. 503	..	M. Wallace.	.....	.....	.....	.....	.....	.....
17	Mrs. R. 550	..	W. J. Fletcher.	.....	.....	.....	2 months, and then began to flow. Never regular since first baby.	Menstruated in January and February. Missed March and April. In May regular, but small quantity and very painful, and faint spells when walking or sitting quiet.	Heart beat heavily with least exertion or excitement. Swelling of limbs and pains from knees downward. Appetite poor. Frequent desire to urinate, and pain on micturition.
18	Mrs. W. 560	..	T. Webster.	.....	...	.....	3 days....	On May 21 unwell and continued until June 27. Well for a few days and then came on profusely. Operated July 30.	Tenderness. When sitting felt discomfort of something, especially when riding bicycle. Painful urination. Some pieces like clot came away. No breast symptoms.

Pain.	Physical examination.	Operation.	Result.	Remarks.
Two or three days previous to when I saw her, had severe pain in abdomen.	....	Found mass down behind uterus near fimbriated end of right tube. Drew up ectopic gestation. Ligated and removed tube and ovary. Washed out and drained on account of oozing.	Died.	
....	....	Ectopic gestation, size of large apple, curled on left broad ligament. Ruptured some time from tube. Ovary and tube and sac removed. Sac inactive, but looked ready to break down. Drained.	Recovered.	Operation Toronto General Hospital July 13, 1896.
.....	On examination found right tube small at uterine end, but enlarged at outer end and lying in front of uterus.	Ectopic gestation of right tube tied off. No adhesions. Abdomen full of tarry and unclotted blood. Tube not ruptured, but blood could be made to ooze out by pressure on fimbriated end. Washed out and drained.	Recovered.	
Sudden, violent pain in abdomen, and fainted. Quite well previously. This occurred at 3 P.M.	I saw patient at 12:45 P.M. Hands cold. Pallid, anxious appearance of face. Pulseless at wrist. Precordial uneasiness lying on side. On turning on back dulness in front disappeared, showing evidence of fluid in peritoneal cavity. Feeling of fulness in cul-de-sac of Douglas, and blood clot.	Peritoneal cavity full of blood. Washed out enormous clots from behind uterus. Tube containing ten or twelve days' pregnancy removed. Tube had slit open near uterine cornu. Saline enemata ordered and legs and arms bandaged.	Recovered.	
....	.....	Found large mass lying in left broad ligament. Tied off left tube and ovary, and removed old ectopic gestation. Extremely difficult enucleation. Right tube and ovary somewhat fixed and during examination began to bleed, therefore removed them also.	Recovered.	
Pain came on suddenly and lasted two hours. Very severe. Pain across back and aching across bowels. Could not bear clothes to touch her after pain ceased. Pain commenced with flow and increased each day. Fainted. Retching during time of pain. Continued for two weeks before operation.	Found mass in front of uterus on right side.	Removed tube and ovary on right side. Pregnancy well out toward infundibulum. Tube very small over surface of placenta. Large quantity of blood escaped from fimbriated end of tube and old clot in pelvis.	Recovered.	
Intense pain about four weeks previous to operation. Three weeks previous, severe pain, and continued for these three weeks. Pain like discomfort from gas.	Under anesthetic found mass to left side, and concluded extrauterine pregnancy.	Drew up ectopic gestation, ruptured to a slight extent on under surface. Several clots but no blood in general peritoneal cavity. Tied off mass. Washed out and drained.	Recovered.	

No.	Name.	Age.	Doctor.	Labors.		Menses.		Irregular hemorrhages.	Other symptoms.
				No.	Last.	Not missed.	Missed.		
19	Mrs. J. 561	..	Vrooman.	.....	.....	.....	1 month. Then went 5 weeks. Again went 6 weeks.	. . ..	....
20	Mrs. R. 610	..	W. J. Fletcher.	.....	.....	Regular.	. .....	Came on and lasted three weeks.	Sudden attack of faintness and bathed in perspiration. Very weak.
21	Mrs. P. 617	..	R. J. Dwyer.	.....	.....	.....	1 month before went 2 weeks over time.	None	Some milk in breasts.
22	Mrs. McC. 631	33	J. F. W. Ross.	.....	. .	.....	Missed 1 monthly sickness by 2 weeks. Then came on and continued 2 weeks.	....	Tenderness in neighborhood left ovary and tube. Increased peristaltic action of bowels noticed through skin. Endeavored to get up, but fainted three times. Vomited. Puffing of abdomen. Pulse not increased. Temperature elevated to 99°
23	Mrs. S. 652	29	T. McKeown.	.....	.....	... .	.. ..	.....	.....
24	Mrs. McT. 656	29	C. McKenna.	.....	....	.....	Missed 1 period.	Some....	When doctor saw her, almost pulseless.
25	Mrs. C. 677	38	Hospital case.	.....	.....	... ..	.....	.....	....
26	Mrs. B. 682	..	J. F. W. Ross.	.....	. ...	. ...	.. ..	.....	....
27	Mrs. L. 710	30	A. Eadie.	. .	.....	... ..	.....	.....	Second operation for ectopic gestation.

Pain.	Physical examination.	Operation.	Result.	Remarks.
Sudden, severe pain in abdomen.	Very ill. Profoundly septic. Uterus pushed forward by mass size of adult's head. Opened cul-de-sac. Small pailful of clots in three stages of decomposition.	Broad ligament filled with mass, and felt fetus five and a half months. Packed cavity of hematocele with gauze. Pulse 140. Almost died on table. Gave unfavorable prognosis. Had to open abdomen to assist in extraction of fetus.	Died.	
Pains of an irregular character in lower abdomen.	Mass found behind uterus, filling cul-de-sac of Douglas, and extending from right to left side.	After difficult manipulation of fingers in cul-de-sac of Douglas, intestinal adhesions broken down and blood clot and ectopic gestation sac shelled out. Tube and ovary also removed. Washed out and drained.	Recovered.	
Sudden attacks of pain and fainting.	.....	Removed ectopic gestation at fimbriated end of tube on left side. Removed tube and ovary and as much of sac, or organized clot, as possible. Drained.	Recovered.	
Pain in spasms, so intense that it could scarcely be controlled by morphine. Slight pain in left breast. Pain on micturition.	Urethra on examination showed no pus or redness. Cervix uteri had a peculiar grayish appearance.	Ectopic gestation at outer end of tube on left side, eighth or tenth week; removed. Tube removed by chain catgut suture, but this slipped, then tied with silk. Peritoneum darkened. Intestines covered with blood; pelvis full of blood. Ovary not removed, although small fibroid nodule on surface. Clots washed out. No drainage.	Recovered.	
.....	.....	Shelled out ectopic gestation rapidly. Scooped out handfuls of blood clot. Intestines dark-colored. Washed out. Drained.	Died third day after.	
While in store suddenly taken with pain in abdomen and fainted.	Two or three days after abdomen swollen, dulness on percussion on side been lying on. Per vaginam could feel blood clot break down.	Ectopic gestation on right side. Tube and ovary removed. Left ovary cystic and removed together with tube. Almost half pailful of blood clot scooped out of peritoneal cavity. Washed out and drained.	Recovered	
Pain in pelvis.....	Lump found. History indefinite.	Old ectopic gestation sac easily removed. No drainage.	Recovered.	Operation Toronto General Hospital June 27, 1896.
.....	.....	Removed ectopic gestation of right tube, also tube. Left ovary behind. Left tube and ovary adherent and diseased and removed.	Recovered.	Operation St. Nicholas Hospital July 1, 1896. Unruptured.
.....	.....	Ectopic gestation of about eighth week in left tube. Tube and ovary removed. Also cyst of ovary.	Recovered	Unruptured.

No.	Name.	Age.	Doctor.	Labors.		Menses.		Irregular hemorrhages.	Other symptoms.
				No.	Last.	Not missed.	Missed.		
28	Mrs. J. 778	29	Dr. Gray.	.....	.. ..	.....	4 months..	None	Breasts enlarged and milk in them. Faintness, sickness at stomach. I thought she was almost four months pregnant.
29	Mrs. L. 823	38	Hospital service.	4	6 yrs.	.....	1 period ...	Some after missing period.	Three fainting attacks.
30	Mrs. C. 853	42	S. G. Parker.	.....	.....	.....	1 week over period.	Hemorrhage about two weeks previously. Doctor thought a miscarriage and curetted.	Nipples looked dark. Faintness. Almost died from this. Went from one faint to another. Elevation of temperature to 102° after currettement.
31	Mrs. W. 862	39	G. Elliott.	.....	.....	Not missed.	.....	Menstruated continuously five weeks.	In few days taken with sudden collapse and faintness. Doctor decided rupture had taken place, but she refused operation until my return.
32	Mrs. S. 879	34	G. Gordon.	.....	.....	Not missed.	.....	Some	Enlarged breasts. Milk in them. Symptoms of pregnancy.
33	Mrs. K. 893	28	A. Eadie.	.....	.....	... .	A few days past period.	....	Doctor found her almost pulseless. Collapsed. In two or three days, after rallying, taken home.
34	Mrs. S. 954	..	W. F. Bryans.	.....	.....	.....	1 period ...	Slight hemorrhage..	Fainted three or four times. Beads of perspiration on forehead. Pulse thin.

Pain.	Physical examination.	Operation.	Result.	Remarks.
....	Uterus packed high up, somewhat enlarged. Passed sound two and a half inches. Uterus pressed forward and distinctly felt on outside of abdomen.	Uterus pushed forward, looked like contained six weeks fetus. Broke down adhesions of omentum, bled freely. When mass burst into, fluid and portions of old clot escaped. Fetus felt with finger and with placenta removed. Blood gushed out immediately placenta touched. Uterine arteries clamped preparatory to hysterectomy. Portion of left ovary left behind. Hemorrhage from adhesion terribly profuse. Almost died on table. Necessary to pack with gauze after touching surface with iron. Pressure externally. Rectum packed and vagina partially packed.	Died.	
Irregular pains..... .	Mass felt in pelvis.....	Ectopic gestation and large mass outside of tube. Hole in side of tube quite large. Removed mass. Bowel folded in over site of old clot.	Recovered.	Operation St. Michael's Hospital Aug. 5, 1899.
No pain for some time, when it suddenly came on.	Colostrum on right side on pressure.	Sac firmly adherent to omentum and abdominal wall. On peeling frightful hemorrhage. Rapidly passed clamps to each broad ligament and removed sac. Hemorrhage continued from anterior abdominal wall. Forceps applied. Pus came up with blood at first. Left tube removed. Almost died on table. Saline beneath breasts. Drainage.	Recovered.	
In side.....	Found small mass. As I was leaving town advised them not to wait should severe symptoms arise.	Extrauterine pregnancy about sixth week. Ruptured tubo-abdominal. No free blood in abdominal cavity, but clots around tube end. Removed No drainage.	Recovered.	
Cramp-like pains, paroxysmal.	Mass on side of uterus.	Removed ectopic gestation from right broad ligament size of cocoanut. Hemorrhage considerable. Necessary to pack in gauze to control. Subcutaneous injections under each breast.	Recovered.	
Taken suddenly with pain while in church. Carried to a house and fainted. Could not go home for couple of days.	Two weeks after when I saw her, found mass filling pelvis, semi-fluctuant. Temperature elevated to 102°.	Omentum adherent in front. Pulled up and out gushed quart or more of blood. Removed left tube and ovary. Gestation near uterine end of tube. Gauze packed to control oozing.	Recovered.	
Taken ill at noon previous day with sudden, severe pain in abdomen.	.....	Abdominal cavity full of blood, fluid and clots. Point of hemorrhage difficult to find. Removed tubo-ovarian cyst on one side. Blood oozing drop by drop from small spot where tube enters uterine wall. Congested appearance of vessels indicated very early ectopic gestation, interstitial and of a few days' duration. Salines injected, arms and legs bandaged, foot of table elevated everything to sustain life; almost collapsed on table.	Died same afternoon	

No.	Name.	Age.	Doctor.	Labors		Menses.		Irregular hemorrhages.	Other symptoms.
				No.	Last.	Not missed.	Missed.		
35	Mrs. L 963	..	N. H Merritt.	.....	.....	.....	1 period ..	Then slight flow.....	Elevation of temperature after second attack. 102°. Pale lips, quite pallid when I saw her at night.
36	Mrs. A. 975	..	R. C. Griffith.	.....	.....	.. ....	A year ago missed 4 months.	.....	Poor health for some time. Some years previous had attack of inflammation. Jolting in going to hospital brought on inflammation. Sore and distended. Elevation of temperature.
37	Mrs. P. 980	35	A. Eadie.	.....	.....	.....	..... .	Not as much as usual in November. Then came on, and then again when I saw her in December.	Hernia on left side..
38	Mrs. R. 1006	..	W. J. Fletcher.	.....	.....	Not missed.	.....	Some....	Operated previously for same condition.
39	Mrs. J. L. 1009	30	A. Eadie.	.....	.....	.... ..	.....	Menses came on and lasted four days longer than usual. Again one week after, only part of day.	No symptoms of pregnancy. Bathed in cold perspiration during attack.
40	Mrs. B. 1026	..	W. R. Walters.	.....	.....	Not missed.	.....	Began to flow.....	Thought she was pregnant. Considerably [illegible] distended.
41	Mrs. L. 1047	..	T. Noble	.....	.....	Regular.	....	....	No symptoms of pregnancy or ectopic gestation.
42	Mrs. E. 1058	..	A. Eadie.	.....	....	.....	.....	In August menstruated; in September but very, very little; October very slightly. Some pieces of decidua had come away.	Taken ill night previous with sudden, severe fainting spell while lying in bed. Breasts looked like pregnancy.
43	Mrs. T. 1074	..	G. H. Carveth.	Only married 7 weeks.		.....	1 period ...	Some...	No breast symptoms. Very weak and prostrated. Managed to drag herself upstairs and lie down.
44	Mrs. R. 1087	40	F. Dawson.	.....	.. ..	.... ..	3 months ago missed 10 days.	Began to bleed and continued four weeks. Doctor says he saw placenta and that she had a miscarriage.	Three months ago had sickness at stomach, pain. Previously operated on twelve years before for ovarian tumor.

Pain.	Physical examination.	Operation.	Result.	Remarks.
Severe pain. While away was given hypodermatic morphia. Went home and had another attack.	.....	Removed gestation sac, four to six weeks' duration, tubo-abdominal. Large amount of clot removed.	Recovered.	
.....	Mass, evidently cystic, in pelvis.	Found adherent mass behind uterus, large amount of old suppurating clot. Ruptured ectopic gestation about a year ago and suppurated. Very severe hemorrhage, but finally checked. Drained through vaginal opening.	Recovered.	
Three attacks of severe abdominal pain at intervals.	Mass behind uterus, and satisfied blood clot poured out by ruptured ectopic gestation.	Large blood clot behind uterus Gestation sac in tube setting up to left on top of clot, about twelfth week. Hemorrhage in tube beyond producing hematosalpinx. This leaked into peritoneal cavity in small quantities, owing to adhesions. Removed tube and contents. Drained.	Recovered.	
Indefinite pains.....	Found small nodule first examination. Advised waiting two weeks. Then found enlarged to double size.	Removed hematoma of right ovary, also ectopic gestation of right tube size of end of little finger, unruptured.	Recovered.	Unruptured.
One slight attack of pain when evacuating bowels. Three weeks after, severe attack of pain while lying in bed.	Boggy-feeling mass in pelvis.	Ectopic gestation end of right tube, abdominal. Removed Cleaned out clots.	Recovered.	
Severe pain in abdomen.	Mass behind and to left side of uterus.	Removed ectopic gestation of left tube, tubo-abdominal. Also large mass of blood clot. Washed out with salt solution. Drainage tube.	Recovered.	
Sudden, severe pain in abdomen while walking on street. Managed to crawl into store.	Thought there was an internal hemorrhage.	Small ectopic gestation, from ten days' to two weeks' duration, in left tube. Removed with ovary. Abdomen full of blood. Washed out.	Recovered.	
.....	Peculiar coloring of skin and collapsed look. Felt blood clots breaking down. Mass chiefly to left side.	Abdominal cavity full of blood. Ectopic gestation sac under folds of omentum and running up to surrounded Fallopian tube. Removed this and while doing so tore off tube. Removed tube and ovary. Fresh blood poured out, also gestation sac in left side about three and a half months. Portion of left ovary left. Washed out and drained. Saline injected each breast. Arms and legs bandaged.	Recovered.	
A week before had sudden, severe pain. Cold perspiration. Had another attack.	.....	On opening abdomen a stream of blood, thickness of finger, spurted in air. Full of blood. Ectopic gestation of four or five weeks in right tube, removed with tube.	Recovered.	
.....	Mass down behind uterus, pushing it forward.	Tubal ectopic gestation with rupture into peritoneal cavity. Flakes of organized clot covered intestinal wall. Removed sac.	Recovered.	

CORNUAL PREGNANCY

No.	Name.	Age.	Doctor.	Labors.		Menses,		Irregular hemorrhages.	Other symptoms.
				No.	Last.	Not missed.	Missed.		
45	Mrs. H. 3.	30	Dr. McDermott.	2	5 yrs.	.....	.....	One miscarriage. Menstruated July 1, 1886, became ill. Pain September 26, 1886. Lost quantity of blood one week. Then ceased end of September.	End of September a swelling, size of large orange, to be felt in right iliac region. Doctor in constant attendance for bearing-down pains. In bed two months. Large with child when she got up. Legs swelled. Felt life in left side. Breasts large and hot. Felt life before Christmas and again in April.

Opened the posterior cul-de-sac through the vagina and removed a small pailful of clots. These clots were in different stages of decomposition. It was found to be impossible to deliver the fetus, and, as a consequence, I was forced to open the abdomen. After the abdomen was opened I was able to remove the fetus, about five and one-half months, and hastily close the opening and pack the cavity of the hematocele with gauze. The pulse had now reached 140. The patient did not stand operation well. Gave a very unfavorable prognosis and left for home. She died within a week. There was not much hope of recovery in this case, owing to the profoundly septic condition of the patient, and she died from this prolonged sepsis and not as the result of operation.

I mention this case to show that even after operation has been done through the vagina it may be impossible to deliver the fetus safely in this way.

At Full Time.—Tait thought it advisable not to operate before the child is likely to be viable, provided the delay necessary does not jeopardize the mother; and, further, that after the death of the fetus operation should be done without delay. I think that this is very sound advice.

Any attempt to destroy the fetus by medicines or the electric current is to be condemned. Many instances in which this has been attempted have resulted fatally. After the death of the child growth of the placenta may continue. I had one such case in which the woman bled through the drainage tube for a period of two months after operation. The fetus was removed, but it

WITH RUPTURE.

Pain.	Physical examination.	Operation.	Result.	Remarks.
April 15, 1887, severe pains came on. Sent for doctor. Pains ceased and did not return, but instead a soreness of stomach. Previously been ill off and on for two or three weeks. Doctor expected delivery of child.	Discharge of blood from vagina under examination, with clots and débris like placenta or decidua. Constant pain. External palpation gave fetal parts. Found uterus bicornis unicollis.	Preperitoneal fat very abundant. Opened peritoneum and stopped all bleeding points. Firm adhesions toward pubes in front, bled freely. On pressing above, fluid gushed out. Sac wall ruptured. Liquor amnii in abdominal cavity. Fetus full time removed. Fastened sac to abdominal wall. Cord drawn out. Drained cavity. Placenta untouched.	Recovered.	

was not considered advisable to remove the placenta. Whether this bleeding occurs as a consequence of growth of the placenta, or of a single detachment of portions of the placenta, it is difficult to say. A piece of placenta retained *in utero* produces frequently grave hemorrhage for two or three months after miscarriage, and yet the placenta does not increase in size or grow, and when removed it looks organized, but not putrid, and does not give rise to the idea that it is active. I presume the same condition may exist within the abdomen after what corresponds to a partial miscarriage is effected by means of operative interference and the fetus has been removed. One thing is certain, that surgical interference in the fourth and succeeding months, when the fetus is alive, is extremely dangerous, and surgical interference in the fourth, fifth, sixth, and seventh months is more dangerous than it is toward the end of gestation; and that surgical interference at any time before the death of the child is much more dangerous than it is after the death of the child.

Full Time after Death of Child.—There is danger to any woman who carries an encysted fetus. Abscess may form at any time and the fetal parts may be extruded through the vagina, through the rectum, or through the bladder. But such a condition need not be incompatible with a long and useful life, provided that no abscess forms.

I saw a lithopedion removed by Prof. Billroth, when I was a student in Vienna, that had been carried in the abdominal cavity for a number of years. The patient died as a result of the operation. She had not been greatly inconvenienced by her condition

and I have always felt that it would have been better to have let her alone.

Treatment of Placenta.—In the case on which I operated the placenta was left *in situ*. The opening into the wall of the sac was fastened to the abdominal opening and a Ferguson's speculum was passed in to act as a drainage tube. Symptoms of sepsis developed and irrigation of the sac was carried out at frequent intervals. The placenta came away piecemeal. The sac finally closed and the patient made a good recovery, though the convalescence was tedious.

Tait considered that the umbilical cord should be divided close to its placental origin, that the placenta should be emptied, as far as possible, of blood, and that after washing and cleaning the sac it should be hermetically sealed by closing the opening into it with stitches; and, further, that if symptoms of septicemia arise the sac should be reopened and drained. He had, however, treated three cases in a manner similar to that adopted by myself. They all survived, but only after going through a process of offensive suppuration that lasted for months and that nearly killed them all. Theoretically, the method of closing the sac ought to give good results, but in practice I am afraid subsequent suppuration will be found to occur.

And now, gentlemen, allow me to thank you for your patient hearing. This evening's address has given you the result of part of my lifework. Records have been carefully kept for this purpose and I cannot, in my lifetime, reduplicate them. Lawson Tait, my brilliant and much-admired master, has already passed into the great beyond, but not before he had instilled into me, and into others who had the benefit of his teaching, the habit of keeping accurate records of cases requiring abdominal operations. To this habit you owe the presentation of these cases and the lessons to be drawn from them.

I feel that I have been greatly honored by your Association and will always carry with me a pleasant recollection of its session in 1902.

481 SHERBOURNE STREET.