THE PRESENT STATUS OF ECTOPIC PREGNANCY—A SURGICAL DISEASE.

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The surgery of ectopic pregnancy is mature rather than old. It is little more than thirteen years ago that Mr. Lawson Tait first deliberately performed an abdominal section to rescue a woman dying from a ruptured ectopic pregnancy. The influence of this triumph in surgery is immeasurable. The number of lives saved is innumerable. The literature of the subject in text book, transaction, monograph and journal is stupendous. Methods of operation have been so far perfected that further progress in that direction is not likely to occur. However, women are yet dying the world over without any effort being made for their relief, or even the condition being recognized during life.

In view of the great interest taken in ectopic pregnancy these deaths should, for the most part, be avoided. Investigation will show that much of the literature is controversial in character. The disputed pathology and methods of treatment in ectopic pregnancy have already employed too much type to the detriment of sound diagnosis. While fine anatomic and pathologic distinctions are abstractly valuable in abdominal surgery, yet they do not always possess life-saving qualities. The minds of those who have studied carefully at the operating table and in the laboratory the intra-abdominal conditions found are often harassed by serious doubts. The demonstration of beautifully made, frozen sections do not always convey to every mind correct impressions. It is a sad commentary to have a man argue the probability of ovarian pregnancy with you while his patient is bleeding to death in the next room. He has lost the nucleus of the thing; it is the bleeding, not the possibilities, that demands action.

After all that has been said and written, I am inclined to the belief that, stripped of their controversial portions, the lectures of Mr. Lawson Tait, published in 1888, present about all there is concerning the matter. Mr. Tait was direct in his language; his pathology was simple; his operative technique was at once rational and successful. Further progress lies along the lines of simplicity in pathology, clearness in diagnosis, and definiteness in treatment. The general practitioner must be made to do this part, but first he must be taught the clinical history and diagnosis. Discussions of primary abdominal ectopic pregnancy, the living placenta, or electricity, are of no value when measured by diagnosis. It is upon these points that it is my purpose to dwell.

How much of fully demonstrated pathology is really useful in diagnosis and subsequent treatment of ectopic pregnancy? That all ectopic pregnancies are primarily tubal is demonstrable with so few exceptions that they need not be considered in the subsequent management of the condition. They remain tubal until rupture or abortion occurs. Tubal abortion, or the expulsion of the developing ovum from the fimbriated extremity of the tube into the abdomen may occur at any time between the second and eighth week of gestation. It is neither a complete discharge into the abdomen or incomplete, being arrested in the fimbriated extremity, and gives rise to the so-called

tubo-ovarian, or tubo-abdominal pregnancies. Rupture at the site of primary attachment is, however, the more common mode of tubal delivery, occurring at any time between the second and sixteenth week. Rupture is coincident with the period of greatest possible distention of the Fallopian tube. If the ovum develops in the uterine end of the tube and uterine tissue is involved in the walls of the gestation sac, the pregnancy is said to be interstitial; if in the middle portion, infundibular; if in the fimbriated extremity, ampullar. With rupture the ovum is, either wholly or partially, discharged into the broad ligament or the peritoneal cavity, and its life usually destroyed by the accompanying hemorrhage. Where the intra-peritoneal delivery is incomplete or it occurs between the folds of the broad ligament, gestation sometimes continues until secondary rupture and renewed hemorrhage or term is reached. Hemorrhage into the membranes of the ovum may occur while it is yet within the Fallopian tube, and lead to fetal death and the development of a tubal mole. Bleeding more frequently destroys the fetus than the mother, in the first four months of gestation.

The contention that all ectopic pregnancies continuing until viability are developed between the folds of the broad ligament, is not borne out by conditions found on the operating table or in the laboratory. Repeated hemorrhage without secondary rupture of the gestation sac may destroy a broad ligament pregnancy at any period of gestation. Suppuration within the sac may lead to the discharge of the fetal bones and other detritus into adjacent cavities, or through the abdominal walls. Another termination is the formation of lithopedion and adipose. The child dies during or at the conclusion of spurious labor. The death of the placenta is not always coincident with that of the fetus. There are a number of cases illustrating this fact, one of which in my personal observation will be reported in connection with this paper.

The children who have been delivered living from ectopic gestation sacs, have many of them shown little post-natal vitality, fully half dying in the early days, and very few living beyond a year. Again, many of them show gross deformities, hemiplegia, spina bifida, cleft palate, hare-lip, contractions of the limbs and club-foot.

The uterus always undergoes sympathetic enlargement, and from its mucous membrane develops a decidua, corresponding very closely to that of early uterine pregnancy.

From a careful analysis of my own cases, and the experience of others, I believe that the foregoing pathologic statements are all that are fully demonstrated, and further, they are all that are needed for the proper understanding of the diagnosis and treatment of the condition.

DIAGNOSIS.

The importance of diagnosis can not be overestimated in ectopic gestation, yet its difficulties are at once serious, if not at times insurmountable. The history of ectopic gestation is largely that of operations undertaken after rupture and hemorrhage, or after viability. Those operations done before rupture were often a matter of accident, or the patients were in unusually favorable circumstances. That most cases of ectopic pregnancy are first seen by the general practitioner, will not be disputed. Here is the

point: The general practitioner is bound to possess a knowledge of the natural history and diagnosis of this disease that will keep in his mind the possibility in every woman, married or single, during her child-bearing period of this condition. Suspicion, with competent consultation, is the best substitute for precise diagnosis with which I am familiar. The profession at large have suspicions of appendicitis under proper conditions, and if under other circumstances their suspicions of ectopic pregnancy can be aroused and skilled assistance called, then will a considerable advance have been made. The reason is obvious. In appendicitis, a clear, unmistakable and unequivocal statement of facts have been so briefly and repeatedly made, that all are familiar with and governed by them. All the statements are not absolutely or entirely true. There are exceptions to many of them, but they are sufficiently general in their application to form a universal basis for opinion and action. What is wanted is a similar primer of ectopic pregnancy. On reflection, it will be seen that the difficulties attending such a plan are many. There are general considerations which apply to the condition. That all women suffering from ectopic pregnancy have previously suffered from some disorders of the organs of generation is a fallacy. In three of seven cases reported at the conclusion of this paper, there was no history of prior generative disorders. One with a baby, the youngest of five children; another with a good previous history a few months married, and still another the mother of three young children. The other cases present a variety of conditions, sterility, displacement and inflammatory disease.

In order to discuss the diagnosis intelligently, subdivisions must be made. Clinically the most natural ones are: 1. Before rupture or tubal abortion. 2. After rupture has occurred. 3. The fetus *a*, living and viable, or *b*, dead.

The difficulties of diagnosis before rupture or tubal abortion are very great, and its possibility will not be admitted by all. The greater number of cases are not seen by a physician until rupture or abortion occurs. A minority come to the operating table for inflammatory disease of the appendages. There is a lack of symptoms pointing to the condition. The patient either believes herself normally pregnant, or has no suspicion of it. Nausea and vomiting may be present, with amenorrhea and mammary changes. The metrorrhagia of ectopic pregnancy does not occur, in the majority of cases, until after rupture or symptoms of impending rupture present. The one particular point upon which diagnosis depends may be stated as follows: Any woman who during her child-bearing period presents symptoms of disease of the organs of generation, of recent origin, either new or entirely different from those heretofore experienced, if associated with any of the probable early symptoms of pregnancy, demands at once a careful examination. If this point can be made sufficiently clear, many more cases will be operated on before rupture occurs.

When rupture or tubal abortion occurs other symptoms arise which at once brings the physician to the bedside. There that general rule, "Pain in the abdomen calls for careful investigation," always applies. The clinical history is of exceeding value in making clear this point. The pain associated with rupture or abortion can only be mistaken for appendicitis, biliary or renal colic, acute intestinal obstruction, or uterine abortion. With a full clinical history and a

careful physical examination, the diagnosis will be positive. Very few errors have been made and the abdomen opened to find another condition present. Few exploratory incisions are made in ectopic pregnancy.

Too great dependence can not be placed upon the expulsion from the uterus of decidual membranes. In a recently reported case where the diagnosis was chiefly based on that fact, no ectopic pregnancy was found at the operation. Membranous dysmenorrhea is associated with the expulsion of similar uterine casts. It is valuable rather than pathognomonic. Collapse is always an important symptom, and its source is to be carefully studied whether it arises from simple pain or pain associated with hemorrhage. It is not to be forgotten that many intra-abdominal conditions may give rise to collapse. Pain as a source of collapse is not always easily differentiated from bleeding or extravasation, with pain. In collapse from pain or fright, the administration of anodynes and the application of local heat is followed by reaction. The collapse from progressive bleeding is continuous, with little disposition to reaction.

After primary rupture, the fetus yet living, if the woman does not die or the fetus is not destroyed by the hemorrhage, gestation proceeds until the viability of the child becomes a contingency, or secondary rupture occurs. Very few of this minority ever reach term.

Defective clinical histories may make diagnosis very difficult. The bi-cornate uterus, uterine fibroids, may make the diagnosis difficult or impossible, and exploration of the cavity of the uterus unwarrantable. Under such conditions the patient ought to be under the most favorable auspices and in bed.

A sufficient number of cases of current intra- and extra-uterine pregnancy have occurred to keep its possibility in the mind of the surgeon. The pregnancies may date from entirely different periods. The most serious form of ectopic pregnancy is undoubtedly the interstitial. Unfortunately it gives rise to fewer direct symptoms than any other variety, yet when the rupture does occur the attack is explosive. The woman quickly bleeds to death within her abdomen. Four hours of inaction is quite sufficient.

TREATMENT.

What are the indications for treatment in ectopic pregnancy? The question may be conclusively answered by the phrase—a diagnosis. There are exceptions, but they are for the personal opinion of the experienced surgeon. What is the treatment? This also can be answered briefly in the interest of the patient—operative. Competent operators are so numerous and so successful in every part of this land that no excuse can be offered for non-surgical interference. When shall we operate? As soon as a diagnosis is made. Time forbids entering into the discussion of injections into the gestation sac to induce the death of the fetus, or the application of electricity in the treatment of ectopic pregnancy. These plans have been so repeatedly discussed and so universally condemned that nothing is to be gained by further consideration. If there be an advocate (there are a few yet living) of the use of electricity present, I can not hope to convince him, and admonition does no good.

It is quite superfluous to enter into the detail of operations to be undertaken at any period of ectopic

pregnancy, but certain subjects inevitably confront us: The position that vaginal celiotomy will assume in the treatment of ectopic pregnancy, the control of hemorrhage during operations undertaken at all periods, the time of operation, the child living and viable, the management of the placenta in operations undertaken after the sixth month, the management of cases where operations are to be undertaken for the removal of the dead fetus, either disintegrating or degenerating, the management of the general condition of the patient at the time of the operation.

The patient's general conditions and surroundings will influence the time and place of operation. Where rupture and progressive hemorrhage are not coincident, operation is to be undertaken deliberately under the best hygienic conditions. Progressive hemorrhage into the free peritoneum is emergency surgery, and operation must be done without delay. An operation can be well under way an hour after the diagnosis is made. In many cities there is an ambulance service. You call it from the nearest telephone and at the same time order the sterilizers lighted, and other preliminary preparations made. The patient is wrapped in blankets and is taken from the ambulance directly to the table. During early anesthesia the abdomen is prepared for incision. The direct or intermediate transfusion of normal salt solution is a valuable measure in collapse, far more than the hypodermatic administration of stimulants, and can be employed at any period by very simple apparatus. The experience of many operators has repeatedly shown the life-saving properties of saline transfusion.

The control of hemorrhage is the first indication in most operations undertaken in the early months of ectopic pregnancy. The first efforts of the surgeon are directed to that end, and with all the speed compatible with good surgery. First determine the side of the ruptured tube, and place a clamp on the broad ligament close to the uterus. When the pregnancy is interstitial, clamp both broad ligaments. These measures will control the bleeding at any period of gestation. The subsequent steps of the operation can be undertaken with greater deliberation. Usually they are simple enough, enucleation or suture of the gestation sac into the lower angle of the wound, the removal of the damaged appendage. In interstitial pregnancy, complete or supra-vaginal hysterectomy, or the resection of the horn of the uterus will be required. The choice of method will depend upon the experience of the surgeon and the condition of the patient. Hemorrhage during the later months of ectopic pregnancy from the site of living placenta, the fetus often dead and macerated, is most difficult in management.

Out of a large number of cases delivered at or about term the most serious difficulty experienced was in relation to the placenta. Two plans have been suggested: its removal with multiple ligature, and tying the cord close to the placenta, closing the abdomen in the hope that subsequent abortion will take place. Both methods have succeeded and failed. A third plan has suggested itself to me: first preliminary ligature of the ovarian and uterine artery on the side from which the placenta receives its blood supply, second the placing of Mickulicz tampon of sterile gauze over the placenta establishing pressure atrophy; third, preliminary suture of the abdominal walls, the sutures to be tied after the removal of the tampon and placenta. Such a tampon may be safely left for three days, and then

removed with the placenta, and the sutures tied. I want to add that in two cases where the fetus had died, become macerated and disintegrated, that operations undertaken through the rectum were followed by fatal hemorrhage from a yet living placenta. Both of these cases should have been attacked by abdominal section.

The child living and viable, what shall be done? A considerable number of mothers have been already sacrificed while waiting for term to arrive. A surgeon recently described as a triumph in surgery, the saving of a child suffering from pressure hemiplegia and spina bifida. Another civilization of another and less human age conducted such to the unknown early in their careers. To-day the number of children a year old and undeformed, who had their origin in an ectopic gestation sac, can be counted on the fingers of one hand. The living child is subsidiary to the living mother.

Vaginal operations undertaken for the relief of ectopic pregnancy will always be limited, yet early cases may often be remedied by this method. Where suppuration in broad ligament pregnancies has occurred, there can be no doubt of the value of this method in many cases, an abscess, incision and drainage through the vagina.

There remains yet another topic in relation to the treatment of this condition, that of the opposite ovary. No question can arise where gross pathologic changes have already occurred. It is worthy of our attention that subsequent ectopic pregnancies have occurred in appendages left at operations. The other ovary and tube should be carefully examined and removed if any evidences of disease are found to warrant the procedure. The question is placed largely on the same basis as unilateral removal of the appendages for inflammatory conditions.

In conclusion, the histories of seven cases of ectopic pregnancy are given with the results of treatment, five recovered and two died. One death to be attributed to an improper operation advised by me, the other (case 1) to carelessness or want of knowledge upon the part of the gentlemen who were in attendance during the earlier period of gestation. I believe that the clinical histories given, together with the results of the physical examination, lead to an irresistible diagnosis of the condition.

Case 1.—Mary R., aged 38, married, native, was seen August 16, 1894. This patient was seen only a few hours before death. Between the second and third month of a supposed normal pregnancy, she had a severe attack of abdominal pain with fainting and uterine hemorrhage. The pain was confined principally to the left side of the abdomen. An abortion was supposed to have occurred at this time. She recovered from this illness after two weeks, and was able to attend to household duties. A month subsequently a second illness, supposed threatened abortion, occurred. There was at this time a sharp attack of peritonitis. Another physician in attendance discovered an abdominal tumor thought to be ovarian in character. She again improved and was able to be about. At the sixth month she "felt life" and was satisfied that she was pregnant. All uterine hemorrhage had ceased.

The onset of labor was delayed until about the three hundredth day of gestation. She was under the care of a midwife for two days, during which time labor pains were severe, but no progress was made toward delivery. Dr. Brierly was called, and he was soon able to determine that some serious abnormal condition was present. He called Dr. Andrew MacFarlane to his assistance, and they dilated the cervix, and determined that the uterus was empty. A diagnosis of extra-uterine pregnancy was now established. Dr. J. P. Boyd saw the case, and an hour later we met in consultation. An active general peritonitis was now present. Pulse could hardly be felt in the radial artery and was very rapid. Her general condition forbade operation. She died in a few hours.

She was the mother of five children, had had one abortion in 1892, was suffering from no uterine disease at the time of this pregnancy. Autopsy: The abdomen when opened discharged several pints of foul, blood stained, flocculent serum. The normal anatomical relations of the viscera were greatly disarranged. The intestines were distended and their coats discolored. All the evidences of acute septic peritonitis were present. The gestation sac was opened and the child delivered. An effort was made to determine the source of the sac and its relations, as well as the attachments of the placenta. The intimate union of intestine, omentum and mesentery made this most difficult. The left broad ligament and uterus formed a part of the anterior wall. The posterior and superior walls were formed by adhesive, inflammatory material, intestine and omentum.

The placenta had its attachment in the pelvis, to the rectum and folds of small intestines. It could not have been removed during life without causing a fatal hemorrhage. The left ovary was not to be found, and undoubtedly formed a part of the wall of the gestation sac. The left Fallopian tube was traced with a probe some distance along the wall of the sac.

Case 2.—A. G., aged 27, married, native. April and May, 1892, she missed two menstrual periods and presented the usual early symptoms of pregnancy. At about the tenth week there was an attack of uterine hemorrhage, associated with abdominal pain. She did not improve. Breasts continued to enlarge and contained milk. Soon a diagnosis of tumor was made. The uterine hemorrhage continued and repeated attacks of abdominal pains occurred. Early in September a localized peritonitis was associated with partial intestinal obstruction, rigors and high fever. A few days later a discharge of purulent matter from the rectum was observed. Some small fetal bones were discovered in the discharge. Dr. Beach found a distinct opening into the rectum through which a portion of the fetus was removed. This was followed by considerable bleeding, although the utmost gentleness was employed. During the afternoon of the day I was called; without any interference, a second and fatal hemorrhage from the rectum occurred.

Autopsy, eighteen hours after death: The local conditions revealed a gestation sac made up of omentum, mesentery and uterus, cemented together by plastic lymph, containing a macerated fetus of about the fifth month, and a living placenta attached to the intestines and pelvic wall.

The attempts made to remove the fetus through the rectum had made a partial separation of the placenta, and it was from this source that the fatal hemorrhage came.

Case 3.—Mrs. Mary R., aged 28, married, native, was seen January 16, 1896. She was taken suddenly with "colic" early in the afternoon. At the time of my visit, the pain was so severe that repeated hypodermic injections of morphia were required. The pain was intermittent in character, or like labor pains, located chiefly in the left ovarian region. Her last menstruation occurred November 20-24, 1895, and was normal in character. About January 1 she suffered from nausea, and her breasts began to swell. She believed herself pregnant from her experiences in previous pregnancies. She suffered from a degree of uterine prolapse since her first child.

Physical examination showed an enlarged uterus, soft, with a patulous os. To the left of the uterus was a tense tumor the size of a small orange. Temperature normal, pulse one hundred and of good quality. I believed that I had an ectopic pregnancy with impending rupture. The next day uterine hemorrhage commenced and continued for two weeks. Shreds of decidual membranes were expelled. There was evidence of pelvic peritonitis for a few days. No indications for operation occurring, the patient was kept in bed. After four weeks there were no physical signs of disease in the pelvis, other than uterine prolapse.

I am of the opinion that tubal abortion occurred within the four hours between the onset of the symptoms and my second visit, and that the ovum was discharged into the peritoneum, died and was absorbed.

Case 4.—Caroline S., aged 42, married, native of Germany, entered the Albany Hospital, February 19, 1895. She suffered from metrorrhagia, which at times had amounted to severe flooding. This symptom was of six weeks duration. The beginning of the flooding was associated with severe pains in abdomen, and syncope. The pain has continued at intervals since. There was a mucous discharge from the rectum and partial obstruction of the bowels. Was unable to leave her bed without fainting. Last normal menstruation in December, 1894.

Her previous health had been good. First menstruation at 16, always regular; married at 26, mother of six children, the youngest 3 years old. All her labors were normal. Physical

examination showed a distended abdomen, resonant on percussion, and quite tender, particularly in the lower portion. Investigation showed a tumor in the right lower abdomen, coming from the pelvis, rather larger than a child's head. It was tender, slightly movable, and gave no sign of fluctuation. Vaginal touch revealed an enlarged and softened cervix with uterine hypertrophy and lateral displacement; to the right, a tumor continuous with the horn of the uterus, and bi-manually it was found to be the lower segment of the one already mentioned. The uterus moved with the tumor. The finger introduced into the rectum discovered a band-like stricture, and almost complete obstruction by the tumor. There was no distinctive changes in the breast. She had suffered from morning nausea somewhat early in January, and had had at least three severe attacks of pain. There was no evidence that decidual membranes had been expelled from the uterus.

The history presented lead to the probable diagnosis, extra-uterine pregnancy, and the operation for its relief undertaken. The abdomen was opened and the relations of tumor explored. It occupied the folds of the right broad ligament. The ligament was incised and a large blood clot and the placenta removed. Both weighed four pounds. No fetus was found. Conditions showed that the hemorrhage had been intermittent. The borders of the incision were sewed in the lower end of the abdominal wound, and its cavity drained and tamponed after bleeding vessels were controlled by ligature. The subsequent history of the case was uneventful. She left the hospital well April 13, 1895, and is now in good health.

This woman had consulted many physicians before entering the hospital, and many diagnoses had been made—cancer, uterine-fibroid, uterine polypus, and miscarriage. Since, she has given birth to a fully developed child, after normal gestation. The labor was uncomplicated.

Case 5.—Frances G., aged 24, married, native of Italy, entered the Albany Hospital, May 2, 1895. Pain and discomfort in lower abdomen, irritable bladder, uterine hemorrhage, great prostration, and subsequently fever. The duration of this illness had been more than two months. She had not menstruated in January or February, 1895, had nausea and considered herself pregnant. About the middle of March she suffered from a severe attack of colicky pain in lower abdomen, associated with flooding. It was regarded by the physician called as a miscarriage. The patient growing no better, Dr. L. F. Neumann came in charge of the case in the early part of April, and at once became suspicious of the true condition.

Her first menstruation was at fourteen, and normal. Married at sixteen, mother of three children, the youngest two and one-half years old. Had suffered in the meantime from no menstrual or uterine disorders. Her general health had been good. There is no apparent heredity. Physical examination revealed a tumor in left lower abdomen, the size of a coconut. It was solid, tender and quite movable. The cervix was found enlarged and softened, the os patulous, the uterus displaced to the right as an appendage of the tumor. This history indicates that the patient had two attacks of hemorrhage before the operation.

May 3, 1895, the removal of the gestation sac from the left broad ligament was undertaken. The enucleation was tedious and associated with free bleeding. The right ovary and tube were removed on account of gross pathologic changes. Drainage was employed for three days after the operation. The subsequent history was uneventful and the patient returned home in three weeks, her wound soundly healed. An examination of the gestation sac revealed the point of rupture in the tube, a small portion of permeative placenta, but no parts of the fetus.

The health of the woman is now good.

Case 6.—Florence S., aged 26, native, married, entered the Albany Hospital, May 20, 1895. Pain and distension of abdomen, fever and chills, general weakness. The beginning of the illness was on April 26, 1895, when she had a severe attack of abdominal pain and immediately began to flood, although it was not the time for normal menstruation. She was confined to her bed much of the time until May 10, 1895, when she sat up. This slight exertion brought on a second attack of pain more severe than before, associated with symptoms of collapse. Abdominal distension and tenderness came on, associated with diarrhea and fever. May 18, 1895, Mrs. S. had a well-marked rigor followed by high temperature and partial intestinal obstruction. This was repeated on May 19, and her condition became serious. I saw her on this date and aspirated a swelling in left lower abdomen, with drawing five pints of very foul, blood-like fluid, mixed with gas. The abdomen was generally distended and very tender. By vaginal touch nothing could be made out; everything was matted together. There was a very foul discharge from the vagina.

Her previous health had been fair. First menstruation at

sixteen, normal until eighteen, when it became scanty, irregular and painful, married at twenty-two, one child living, two and a half years old. Mother died of puerperal fever. Father living. There is no history of tuberculosis or tumor in the family.

She was brought to the hospital May 20, 1895; an abdominal incision was made. Adhesions were universal. A large cavity, including the pelvis and left side of the abdomen, was filled with decomposing blood clot and pus. This cavity was washed as clean as possible, and filled with iodoform gauze. There were no distinct walls to the cavity. Agglutinated intestines, omentum and mesentery enclosed it for the most part. She was taken from the table in severe shock. However, she rallied and after forty-eight hours the gauze tampon was removed from the pelvis, a large glass drain introduced, and the abdominal sutures tied for the first time. An enema was ordered shortly after and it came immediately out of the glass drainage tube. For two weeks all the bowel motions were through the drainage tube. Careful attention to the fecal fistula, repeated irrigations daily, enabled us to avoid any general infection. June 2, only a small fistula remained and the patient returned home. The bowels now acted naturally.

Late in September she returned to the hospital for relief of the fistula, but after exploration and curettement it closed with little trouble. She is well and strong.

Case 7.—Mrs. Anna DeR., aged 34, married, native, was seen July 10, 1895. She had been in bed for some time suffering from abdominal distension and pain, fever, rigors and sweating. Menstruated March 24, 1895, for the last time. In the latter part of May she was suddenly attacked with severe abdominal pain, and noticed a small tumor in the left groin. This disappeared in a few hours, but the distress continued. A week later a similar attack was experienced, after which nausea was experienced and continued. Her family physician at this time discovered a hernia which was treated by a truss. The abdominal pain continued. On June 29, an attack of vomiting, great pain and fainting occurred. She went to bed and remained there until removed to the Albany Hospital June 30, 1895. Three weeks before entering hospital flowing began and a membrane was expelled from the uterus, supposed to be a "false conception." Just prior to entering the hospital she had a chill lasting for twenty minutes. Physical examination showed the usual signs of ectopic gestation with rupture. On July 20, she was removed to the hospital for operation the following day. During the night an attack of hemorrhage occurred and her condition became serious. The operation was made early the next morning. Blood clots and fresh blood flowed from the incision, which was at once arrested by a clamp placed on the left broad ligament. The blood, fetus and placenta were at once turned out of the abdomen. The broad ligament was immediately tied and the remnant of the left appendage removed. After the peritoneum was cleared the abdomen was filled with normal salt solution, and closed with drainage—a glass tube. The subsequent history is uneventful. The woman is now in good health.

SYMPTOMS, DIAGNOSIS AND TIME FOR OPERATION IN RUPTURED TUBAL PREGNANCY.

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Careful study of the physiologic, anatomic and pathologic conditions of cases coming within our experience, while such study has not altogether removed from controversy very many subjects connected with gynecology, it has led some of us to positive convictions and to the adoption of well defined lines of practice. We are concerning ourselves less about theories, though we are not able to dispense with them altogether, but we are growing to base our rules of practice more upon the results of our observations and experiences. Pathologic systems are continually changing, one system succeeding another in quick and confusing succession. There should be no element of mere conjecture in our every day working experience. After the surgeon has discovered and relieved conditions which his experience, his observa-

tion, has taught him to detect with almost mathematical certainty, the pathologist can step in and display his science in explaining cause and effect.

The occurrence of tubal pregnancy is regarded in widely different light by the theorist and the surgeon who has learned to deal with it practically, and who has accordingly come to understand the manifold directions in which speedy disaster may troop down upon unfortunate women subjected to this calamity. The argument that many cases get well of themselves, in the presence of the multitude of disasters possible, and in the light of the horror of some of these very recoveries, is so puerile that the surgeon of practical and positive bent can not regard them with complacency, nor consider that those who advance them have any authority from which to speak more positive than the vaporings of fancy. As to the causes of aberrant gestation, we are to consider them both as anatomic and moral. They may have their origin in anatomic loss of structure or in perversion of function, such as absent ciliary motion in the epithelium, or in absolute disease of the tube, or, as I have had more than once called to my attention, in the fright of illegitimate conception. Causation can rarely be determined with certainty; there are many agencies which operate to produce the trouble. The character of the attack, the whereabouts of the patient, at what employed, are always interesting considerations. The attacks are exceedingly sudden. A vigorous woman may in a few minutes look pale and exhausted and have a very feeble pulse. Any effort to change position increases the pain and she will start with a scream; the pain may be quite general and not confined wholly to the abdomen. The rational symptoms of pregnancy are not very marked. Morning sickness is never very prominent. For weeks they may complain "on and off" of sharp pain in one groin or the other. These pains are followed by bloody discharge; the odor of the discharge is also characteristic. Later the sharp and severe pain is followed by faintness and increased flow mixed with shreds and débris. Ruptures with large effusions are easily recognized upon examination. The finger detects an ill-defined boggy tumor, the uterus enlarged and posterior or pushed well to one or the other side. If the rupture is quite recent it may be difficult to determine a tumor of any character; there is simply a feeling of general resistance. In examinations made one or two days after rupture it is easy to define the irregular boggy tumor, also to locate the uterus, determine its size, position and mobility.

There is very frequently associated with these cases a history of sterility, inaptitude to conception and mild forms of pelvic disease, abortion or doubtful abortion antedating the pregnancy some four or five years, absence of one or more periods. Very frequently there is peculiar nervous disturbance, morbid apprehensions, irritability followed by acute pain, severe and recurring, pain of a variety rarely associated with other troubles. Usually the pain is followed by anemia or symptoms of concealed hemorrhage; the common symptoms of loss of blood are prominent. It is then other symptoms develop, intra-pelvic or perineal tumor due to clot or pressure, there is characteristic vesical and rectal disturbance, peculiar central fullness of the abdominal walls. Slight distension, tympany and marked tenderness rapidly follow the first rupture, recurring hemorrhage and all symptoms become more marked. The restlessness of the patient is alarming; probably 25 per cent. die in twenty