

till two months ago, July 15, when it was normal in character. In August there was no sign of menstruation, but on September 4 (16 days previous to interview) a painless natural flow began and continued for 8 or 9 days. Following this, there was indulgence in sexual intercourse on two successive nights and an unusual exaltation of sexual desire for a week or ten days. In this connection the patient said that, while ordinarily a sufficiently passionate woman, she had experienced while carrying both her children an unusual intensity of sexual desire during the first two months of pregnancy. The recurrence of this made her suspicious, although she was still nursing her child, and she called for an opinion regarding the possibility of pregnancy. A most thorough examination failed to reveal any physical signs or suggestion of pregnancy, either normal or otherwise, although I examined for both conditions. I advised a cessation of social duties, daily hours of rest in bed and prompt notification of any unusual occurrences. Occasional stains, spotting, appeared, and six days later sharp pains in the abdomen gave the impression that the regular menstruation was about to recur. Five days later, October 1, she entertained company at dinner. At the close of the function she had a sickening pain, grew pale and nearly fainted; she went to bed. October 9, she dined with her husband down town; on going home she had a bearing down pain and found that she was flowing rather freely. She remained in bed the next day, but the following day, Sunday, she got up to dinner at 1:30 and ate a hearty meal, although she had felt weak and miserable during the morning and suffered from pain in right abdomen shooting up to the shoulder. I saw her at 3 p.m.; she was in bed and was pale and pulse was weak; she had been flowing steadily since Friday.

Examination.—These symptoms and history pointing so positively toward ectopic pregnancy led to a careful examination. I could discover no enlargement of the uterus, comparing it with my recollection of its former size, but I did discover a perceptible enlargement of the right tube, although not very marked. I diagnosed unruptured tubal pregnancy, or tubal abortion of the right side.

Operation.—Directly after examination the patient suffered a sharp attack of pain and went into collapse. As soon as she had sufficiently revived she was placed in a carriage and taken to the sanitarium. Stimulants were cautiously used and she passed a comfortable night. Operation was performed at 1:30 p.m. the following day by vaginal section. After dilatation and curettage of the uterus a laceration of the cervix was closed with three chromic sutures. The usual T incision was then made in the anterior vaginal wall; the bladder stripped off and the peritoneal cavity opened. It was noticed that both the anterior and posterior vaginal fornices bulged quite markedly, and on opening into the peritoneal cavity there came a gush of liquid blood and clots. Some of the latter were dark and firm and some soft and bright, showing old and recent hemorrhage. The uterus was promptly delivered into the vagina and the right appendages brought down. The tube seemed to be intact and the fimbriated end normal in every way. The tube was enlarged and its walls thickened; there were also marked signs of congestion. On turning the tube to get a view of its posterior aspect, a small pinhole opening, through which a minute clot protruded, came into view at its middle third. The tube was rapidly quilted off and cut away—the ovary not being interfered with. After examining the appendages of the opposite side and finding them normal, the fundus uteri was restored to the pelvis and the vaginal incision closed. An opening was then made into Douglass' pouch for drainage, through which blood and clots were removed and a light gauze drain applied. Some difficulty was experienced in getting the bowels moved on the third day, but after that convalescence was normal.

Examination of Removed Tissue.—The interior of the tube gave no indication of the development of a placenta nor chorionic villi. The ovum at a very early stage must have eroded its way quite through the tube, and hemorrhages must have been quite frequent, if not almost continuous.

I cite this case as being a most interesting example of one phase of tubal pregnancy.

Paul Zweifel³ cites a case in which hemorrhage occurred eight days after the first omission of the menses. The ovum at that stage could not rupture the tube and examination disclosed that the ovum had eroded clear through the tube and serosa into the peritoneal cavity. Whether the hemorrhage is moderate or sufficiently extensive to endanger life is a mere chance. These slight openings may or may not be attended with temperature, depending on the promptness with which aid is sought and obtained.

It would seem to be a fair inference that when a woman has skipped one menstrual period and is attacked with sharp pain in the hypogastrium, collapse, and vomiting with markedly feeble pulse, if there be no rise of temperature, an erosion through the walls of a gravid tube should be suspected at once and the necessity of prompt operation seriously contemplated.

A secondary feature of interest in my case is the fact that in less than a year after the operation in which the right tube was removed, the patient became pregnant normally and has been successfully delivered of a fine boy.

EXTRAUTERINE PREGNANCY: CASES OF UNUSUAL TYPE.*

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Many years ago physicians recognized extrauterine pregnancy and some patients actually recovered after ordinary treatment. Sometimes even then the diagnosis was made before rupture, and physicians treated these patients by killing the fetus with electricity, or morphin was injected into the sac and thus the life of the embryo was destroyed. Physicians then found patients with vague histories in whom inflammation would take place, and in the course of time an abscess would break into the rectum, bladder, or vagina, and fetal bones would pass. The physician then knew that he had a case of extrauterine pregnancy that had become infected and produced the symptoms that he was called on to treat.

With the advancement of abdominal surgery cases of extrauterine pregnancy were found during abdominal section. With the gradual development of pelvic surgery physicians were able to diagnosticate ruptured extrauterine pregnancy and by prompt operation could save a life. In fact, the general symptoms of ruptured extrauterine pregnancy are now so well known that almost every general practitioner recognizes the trouble and sends for a surgeon. There are exceptional cases, however, in which the classic symptoms of the course of the condition are absent or different and mistakes are made by very well posted diagnosticians. Having had two cases within a few days of each other of this kind, I thought a short report of these might be interesting.

CASE 1.—Mrs. O. B. R., aged 30, mother of three children, youngest 3 years of age, had menstruated regularly until Nov. 20, 1904.

History.—During Christmas week, as she explained it, she had some pain and only slight menstruation. In January, 1905, another and slight show with considerable pain kept her in bed for several days. February 14 she was taken with severe pain and inflammation. Her family physician.

3. Brit. Gynec. Jour., Nov., 1903.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

recognized a swelling on the left side and treated it on general principles. The inflammation gradually subsided, and she was able to sit up and move around a little and then it started again. This continued for nearly ten weeks. She became very much emaciated and anemic, having temperature running up to 100 or 104.5. She was finally put on a stretcher and sent to me, a distance of 150 miles. She arrived at Harper Hospital April 26, 1905, in fairly good condition, but a typical case of long-standing sepsis. Carefully going over the history, I told my assistant it looked to me like a case of extrauterine pregnancy which had ruptured in the broad ligaments and had become septic.

Operation.—She was prepared for operation and was operated on April 27, 1905. I found a sac extensively adherent, containing a four months' fetus, with decomposed placenta and situated in the left broad ligament. The placenta could be easily removed, the sac was stitched to the lower angle of the abdominal wound and a rubber drainage tube inserted. The abdominal wound was closed with silk gut sutures.

Result.—She made a splendid uninterrupted recovery and returned home the twenty-fifth day. The power of resistance of some individuals is beyond comprehension.

CASE 2.—Mrs. C. R., aged 24, mother of two children, youngest two years, was brought to Harper Hospital April, 1905, with a temperature of 104.5, and with the statement that she had had a miscarriage and that there probably was retained membrane. I examined and found a large swelling on the left side, which I diagnosed as an abscess in the left broad ligament, and the only thing to do was to operate and to clean it out as soon as possible. The pulse being 140 and 160, no time was to be lost and no extensive operation could be done. She was given an enema.

Operation.—With a few whiffs of chloroform, an opening was quickly made with scissors into the abscess cavity, which was then increased by tearing with the fingers. Nearly a quart of pus flowed out, and decomposed tissue, which was recognized as placenta, was removed. The cavity was cleaned with sponges, not irrigated, and a rubber drainage tube inserted. She made a quick recovery, and in two weeks returned home. After she was able to talk I got the following history:

History.—She had menstruated regularly since her last child's birth until Feb. 5, 1905. She did not flow again until March 21, when she had severe pain with the menstruation. She considered herself pregnant and thought she was having a miscarriage. The pain, however, eased up somewhat. April 1 she was taken with severe pain, and continued to feel quite poorly and passed membrane from the uterus, which was supposed to be the placenta. She did not improve, however, but daily continued to get worse, fever and chills developed, physicians were changed, but her condition became steadily worse until she was brought to the hospital as above stated.

These cases could be amplified by similar ones, but they are sufficient to teach some lessons. One of these is that extrauterine pregnancy is more often met with than ordinarily expected. Another lesson is that a careful history of the onset of the disease will throw light on the subject. The patient often unintentionally throws the physician off his guard and only by persistent questioning will he get at the real facts. I would conclude, therefore:

First, that extrauterine pregnancy must always be in the physician's mind in cases of sudden onset of pelvic trouble.

Second, that the least irregularity of menstruation is suspicious of extrauterine gestation.

Third, that inflammation and sepsis following a supposed miscarriage often are due to ruptured ectopic pregnancy.

Fourth, that prompt operation is always indicated; the choice of the vaginal or abdominal route depending on circumstances.

DISCUSSION.

ON PAPERS OF DRs. GOFFE AND CARSTENS.

DR. R. T. GILLMORE, Chicago suggested that if, after curetting the uterus, the scrapings are examined microscopically

for decidual cells, an early diagnosis may be made and the case need not be allowed to become septic. Of course, decidual cells may be found in other conditions than tubal pregnancy in which the endometrium is inflamed, so that the finding of the decidual cells is merely suggestive. A careful microscopic examination of the tube should be made after the operation for chorionic villi. A blood count is of value in showing whether or not hemorrhage is due to shock or anemia, in ruptured tubal pregnancy.

DR. L. H. DUNNING, Indianapolis, declared that cases of extrauterine pregnancy at full term are very rare. Some years ago he thought he had such a case, but on careful examination he found that he was mistaken, and the final conclusions were verified afterward by microscopic examination. A full term ectopic pregnancy in a tube which has not ruptured would show no covering of peritoneum continuous above. In other words, it should be free in the abdominal cavity like an ovarian or fibroid tumor. If the sac is covered posteriorly with peritoneum, then it is not an ectopic pregnancy at full term in an unruptured tube.

DR. C. O. THIENHAUS, Milwaukee, said that the fact pointed out by Dr. Goffe of the Langerhans cells eating up and gradually destroying the walls of the tube shows that extrauterine pregnancy should be classified as a true neoplasm which demands immediate operation in every case in which the diagnosis is made, no matter whether rupture has occurred or not. The only exception would be in extrauterine pregnancy of seven or eight months. In these cases it is of great scientific importance to know whether or not the fetal sac is without or within the tube. In ruptured extrauterine pregnancy it is necessary to differentiate between cases in which Nature has formed adhesions and has encapsulated the blood and the tube; in other words, those in which a hematocele is present, and cases of free abdominal hemorrhage. In this latter class are usually cases in which the rupture of the tube takes place in the neighborhood of the uterus. These cases, though rare, are the most dangerous ones, because the hemorrhage is so profuse that Nature has no time to form adhesions; and if immediate operation be not performed the patient invariably bleeds to death. In such cases it is inadvisable to transport the patients to a hospital. They should be operated on at once wherever they happen to be at that time. The operation should be done as rapidly as possible, not in deep narcosis, but during the stage of excitement of ether anesthesia. About three years ago Dr. Thienhaus saw such a case, and had the good fortune, by prompt and quick operation, performed in a farmhouse, to save the life of the patient. Dr. Thienhaus was surprised to hear in the surgical section that so much chloroform is still used, as it is a well-established fact that ether is much less dangerous than chloroform. He has discarded chloroform entirely for the past four years and has used ether in all cases. When a tumor is found lying in the neighborhood of the uterus and it is uncertain whether it is a cyst, pus sac or a hematocele, an exploratory puncture or colectomy will often aid in diagnosis, and when blood is found one can say in 95 per cent. of the cases that it is ectopic pregnancy. In cases of infected hematocele, cleaning out and draining by the vaginal route is safer than the abdominal operation.

DR. I. B. PERKINS, Denver, said that he has noticed that several of these patients appeared to have healthy tubes, and in these instances the woman had imagined herself pregnant and took medicines intended to contract the uterus and to expel its contents. Ten days or two weeks later she would suffer from a ruptured tube. It occurred to Dr. Perkins that in all probability the pregnancy had taken place in the tube, and while the ovule was making its descent toward the uterus it was arrested at the cornu, where the tube was closed temporarily by the contractions of the uterus produced by the drugs taken, and that before relaxation occurred sufficiently to allow the impregnated ovule to pass into the uterus it had developed sufficiently and had become sufficiently adherent to the tube that it could not pass. He thinks it probable that tubal pregnancy frequently occurs in this way in a normal tube, and when the rupture occurs in these cases it is usually near the cornu, and the hemorrhage and shock are great.

DR. D. C. BROCKMAN, Ottumwa, Iowa, reported a case of synchronous extrauterine intrauterine pregnancy. A multiparous woman consulted him with a history of persistent vomiting and temperament. She was greatly emaciated, and on examination he detected a tumor in the central part of the abdomen. Blood count was negative. The woman knew herself to be pregnant, and the central tumor was taken to be a pregnant uterus at four and a half months. On the left side was a cystic tumor, in which he could get ballottement, but no evidence of abscess showing a pregnancy in the abdomen to the left of the uterus. Hoping that he could tie off the ovarian arteries and do a panhysterectomy without fatal hemorrhage, he opened the abdomen, but found the intestines so adherent to the sac that it was impossible to reach the ovarian arteries or to do anything with the sac without causing a fatal hemorrhage. He closed the abdomen and waited a few days before he delivered the fetus through the vagina. He did not attempt to remove the placenta, which was adherent to the right side of the sac, but packed the sac full of gauze and waited for the vessels to close. On the fourth day premature labor set in, and he removed the packing, hoping to stop the labor. Anodynes failed, hemorrhage occurred, with death six days after the operation from exhaustion due to hemorrhage. Dr. Brockman finds that there are about 133 cases of this kind on record in the majority of the patients. If another case like this one came to him, he thinks he would destroy the extrauterine fetus by electricity or morphin and allow it to remain, hoping the intrauterine pregnancy would continue to term.

DR. WILLIAM E. GROUND, Superior, Wis., said that ectopic pregnancy is undoubtedly a condition that exists oftener than is usually suspected. The determination of the location of the fecundated ovum is a matter of mere incident. If the ovum is arrested in the Fallopian tube, tubal pregnancy will follow; if it locates in the body or fundus of the uterus, normal pregnancy will result, and if it forms an implantation in the lower uterine zone at or near the internal os, placenta prævia will be the consequence. Rupture in cases in which the implantation is near the uterus, always occurs early. Dr. Ground had a case in which the rupture occurred at the patient's next regular menstrual period; she had never missed a period. The symptoms of internal hemorrhage were extreme. The patient was sent to the hospital and the abdomen was opened. The tube was found torn clear across near the uterine cornua and the abdominal cavity was filled with liquid and clotted blood. As Dr. Ground understands it, the decidua is a hypertrophied endometrium, and the chorionic villi is the outer fetal membrane and purely a fetal structure; therefore, in cases of extrauterine pregnancy and in the absence of intrauterine pregnancy, one would not expect to find chorionic villi in the uterine scrapings.

DR. W. O. HENRY, Omaha, said that Dr. Goffe's case reminded him of one he had, and he thinks Dr. Goffe's explanation of the cause of the hemorrhage correct. The pregnancy occurred near the fimbriated extremity of the tube, and when the abortion occurred it was not a rupture, but simply an expulsion of the contents of the tube. When the fetus is located nearer to the uterus and rupture occurs, the fetus may be extruded entirely, but the placenta remain; when it is in the outer end of the tube, however, the entire ovum with its coverings is extruded. In other cases one will find the rupture near the cornu of the uterus, and hemorrhage ensues, the fetus being retained. If there is violent hemorrhage, it is not safe to move the patient any great distance, but ordinarily it is better to operate in a hospital. Dr. Henry considers that the point made by Dr. Gillmore with reference to making a diagnosis by examining the uterine scrapings is not correct, because in extrauterine pregnancy chorionic villi are not found in the uterus; they are only found in the tube.

DR. C. L. BONFIELD, Cincinnati, briefly reported a case which seemed to be one of unruptured tubal pregnancy. After the ovarian arteries were ligated, the whole mass was lifted up from behind the uterus, to which it was adherent. On most careful examination it appeared to be an unruptured tubal pregnancy, but he is convinced that rupture occurred, that a blood clot filled in the opening, and that after regeneration of the tissues the tube took on a normal appearance. He has seen two or three cases in consultation, in which most severe

hemorrhage had occurred and the patient was practically pulseless, and had been so for eight or ten hours, but subsequently improved a little. In such cases he advises leaving the patient alone for eight or ten days until the blood clot has been absorbed and the woman is in condition to stand an operation.

DR. J. H. CARSTENS said that microscopic examination, once in a while, may throw some light on the subject. He agreed with Dr. Henry about taking patients to the hospital. It is a question of the individual case. If he is 100 miles from home he will not take a patient to the hospital, but will do the best he can, and he thinks that some patients recover under the most adverse circumstances. Dr. Carstens does not think that one can tell where the rupture is located. The blood does not always come down into the cul-de-sac. Sometimes there are adhesions and the blood is up in the abdomen. One can not always feel the hematocoele. If the hemorrhage continues with increase in pulse rate operation would better be done quickly. If there has been a hemorrhage, followed by shock, and the pulse remains about 120, then one can wait for an opportunity to operate; but so long as the pulse continues to increase in frequency, one must operate quickly, in two minutes, if necessary. He advises cutting and putting on forceps, allowing them to remain for hours if necessary; it will not hurt the patient. When the woman has had time to recover from the shock, a thorough operation may be done. Dr. Carstens operated through the abdomen in one case because the tumor did not extend down into the vagina. It bulged out in the side and looked like a big ovarian tumor, and that was the nearest point to get at it. When pelvic inflammation comes on suddenly without any apparent cause, and after investigating the case carefully one finds that there was some irregularity in menstruation and some pain, trouble is to be looked for.

RECENT ADVANCES IN THE PHYSIOLOGY OF HUMAN NUTRITION.*

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The question of the physiology of nutrition is a most important one. It is especially important to the physician, for without a clear idea of the subject he can not prescribe a proper dietary for the well or sick nor can he clearly understand the pathologic conditions which occur as a result of an improper amount or kind of food or the morbid conditions which result from malnutrition.

It is the belief of the layman and of many physicians, too, that the chief nutrition of food consists of the proteids, and meat is especially looked on as the food which affords strength and sustained effort. Among Europeans and Americans especially meat eating is very prevalent, chiefly for the reasons given above. Besides this, the palate is pleasantly excited by rich animal foods, and in consequence a larger amount is taken. It is too common a belief that the well-nourished body is the most healthy and best able to resist disease and that a large fat deposit in the tissue is an evidence of good general nutrition.

Our food is made up of proteids, fats and carbohydrates. The proteid or albumin, both animal and vegetable, is the tissue builder. Relatively, a larger amount of proteid is required for the growing individual, pound for pound, than for the adult. The fats and carbohydrates (sugars and starches) comprise the fuel of the body and supply the necessary heat and keep the machinery going.

STANDARDS OF DIET.

As a result of the years of experiment by physiologists and of observation by many workers, certain general

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