OVARIAN PREGNANCY AT TERM, WITH RECOVERY OF MOTHER AND CHILD, PRELIMINARY REPORT OF A CASE.[1]

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(With Three Illustrations.)

ECTOPIC gestation progressing to maturity with recovery of mother and child is a condition sufficiently rare to warrant a special case report. The case, moreover, becomes one of especial interest when its relation to ovarian pregnancy can be established. Of the recognized modes of extrauterine pregnancy, the most unusual form is that of ovarian pregnancy.

The subject of ovarian pregnancy has been carefully reviewed by Williams (*Gynecol. and Abd. Surg.*, Kelly-Noble), and recently also by C. C. Norris (Primary Ovarian Pregnancy and Report of a Case Combined with Intrauterine Pregnancy, *Surg., Gyn., Obs.*, ix, 2, p. 123, 1909). Williams classified thirteen cases as positive, and Norris collected and tabulated nineteen undoubted cases. Of the cases collected by Williams, those of Gottschalk and Ludwig went to term. Of thirty-four cases designated as positive, highly probable or probable, in eleven the pregnancy went to term, showing that the ovary can accommodate itself more easily than the tube to the growing pregnancy.

Regarding the theories of impregnation and development, ovarian pregnancy is thought to result from the fertilization of the ovum before its escape from the Graafian follicle. The diagnosis of ovarian pregnancy is said to be conclusive when the requirements demanded by Spiegelberg are complied with, namely:

[1] Read at the Twenty-second Annual Meeting of the American Association of Obstetricians and Gynecologists at Fort Wayne, September 21–23, 1909.

1. That the tube on the affected side be intact.

2. That the fetal sac occupy the site of the ovary.

3. That the sac be connected with the uterus by the ovarian ligament, and,

4. That definite ovarian structure be found in its wall.

In addition, Williams believes that ovarian tissue should be demonstrated in several portions of the sac wall. It must be evident also, that as pregnancy advances and the ovarian structures become attenuated, the difficulty of finding ovarian tissue increases, and it is on this account that many of the advanced pregnancies have been placed among the doubtful cases.

The history of the case that comes to our attention is as follows: the patient, No. 6224, a colored female, thirty years of age, was admitted to the St. Louis City Hospital November 27, 1908. She was a laundress by occupation and there was nothing in her habits of special interest.

Family History.—Her father and mother had died from causes unknown. One brother is living, but two brothers and two sisters died in infancy. There was no history of tuberculosis, malignancy or insanity.

Past History.—Patient had had the usual diseases of childhood. She had never been sick or confined to bed except at childbirth. Menstruation began in the sixteenth year and has always been regular except when pregnant. She married at the age of twenty-one and has had eight children. Seven years ago she gave birth to twin boys, five years ago had a miscarriage, and has had two children since. Three children are living, the rest having died in infancy. The menstrual flow usually reappeared one to two months after childbirth. Her last child was born November 23, 1907.

Present Illness.—The patient entered the hospital believing that she was pregnant and according to her belief had gone beyond term. After birth of last child patient had regular menstruation for three months. Last regular menstruation occurred February 15, 1908. She missed in March, but on April 14 lost an unusual amount of blood and thought she was having a miscarriage. In addition to clots of blood she states that a soft, pinkish substance was expelled, in size somewhat smaller than an egg. On the morning of this day she fainted, became dizzy and fell back in bed. She complained of pain in her womb, but this soon subsided. The flow of blood lasted for two weeks and weakened her a great deal. A doctor was

called in, who prescribed for her and thought she had a tumor. He made no special examination. During the succeeding six weeks, she was occasionally confined to her bed, and from the last of April to the birth of the child there were no uterine hemorrhages. On May 14, she had a sinking spell and experienced hot flashes in the face. The flashes were noticed during a period of three or four days. She also had nausea and vomiting, and about this time began to feel pain in the lower part of the abdomen on the right side. She noticed two "lumps" in the lower abdomen, one in the center and the other on the right side. She called at the office of another physician, who said the womb was enlarged and ordered douches.

In June the mass gradually moved over toward the left side and the pain became less. The pains that she had complained of were of an aching character and she felt that something on the inside was pulling and seemed to cause a soreness. This pain prevented her from being active on her feet and she found it necessary to support the abdomen. On June 6, a physician who had examined her stated that she had a tumor. She felt nauseated and experienced hot flashes on the 14th, but these sensations afterward left her permanently. For the most part she was constipated and had to take salts frequently. She experienced but little trouble with her bladder. Notwithstanding the various diagnoses, the patient believed herself pregnant, her abdomen was getting larger, and early in July she felt fetal movements. During the months of July, August and September she felt quite well, but was obliged to stay mostly in her room.

In October the patient felt well enough to leave the house and went to a market-place four blocks distant. On her return she felt something give way in the vagina and she was obliged to support the womb by pressure from below until she reached her home. A physician who was called in replaced the womb in the pelvis. There was some uterine hemorrhage, but no abdominal pain. The womb remained in position for three weeks, when it again prolapsed and was pushed back by the patient. According to the patient's calculation, she was to give birth to the child on November 15, and on this day she began to have pain in the back and bearing-down pain in the womb. The pains were about ten minutes apart and continued for two days. A physician who examined her thought she had false labor pains and expected to be sent for when labor started. Twelve days later, after a

pronounced edema of the cervix associated with prolapse of the uterus had taken place, the patient entered the hospital.

Physical Examination.—Patient was well nourished and about five and a half feet in height. Head, trunk and extremities well developed. Respiratory and circulatory systems practically normal. Temperature 99.6°, pulse 118, respirations 28. The urine was normal, bowels were constipated. Nervous system was normal. Abdomen was enlarged as in pregnancy, but somewhat asymmetrical, the left side being fuller than the right. The breasts were flabby and but moderately distended with milk. Inspection of genitalia showed prolapse of uterus with edema of cervix and an old laceration of the perineum. The cervix was perhaps more than two inches in diameter and completely filled the vagina. The fetal heart sounds were easily heard and were loudest to the left and a little below level of the umbilicus. Under general anesthesia the assistant physician made a more complete vaginal examination and found that the uterus was empty and that delivery through the natural channel was impossible. Diagnosis, extrauterine pregnancy, edema of cervix. Treatment, abdominal section.

Operation.—Under general ether anesthesia, a long median incision was made extending from the umbilicus to the symphysis pubis. On examination of the abdominal cavity a large, cystic and tumor-like mass was found occupying the lower two-thirds of the abdominal cavity. There were numerous omental and intestinal adhesions. It seemed at first as if we were dealing with pregnancy complicated by ovarian cyst. The intestinal adhesions were liberated, and the omental adhesions were ligated and severed. The mass, which now resembled an ovarian cyst containing a fetus, was freed on all sides and was partially delivered through the abdominal incision. Median incision of this mass was made, which incision happened to be over the site of the placenta. The bleeding here was profuse. The sac was opened and the contents, a matured fetus, removed. The fetus occupied a somewhat longitudinal position, the back being toward the left. The head was above and was flexed forward on the chest. The arms and legs were folded in front of the body. The cord appeared normal.

The child soon after delivery opened its mouth and made efforts at respiration. It was placed in the hands of an assistant, who quite easily resuscitated the child. The sac was shelled free from the abdominal cavity. The appendix had become

adherent to one portion of the sac and after careful ligation was severed. The sac originated from the right side in the region of the ovary and it was here that the main blood supply was

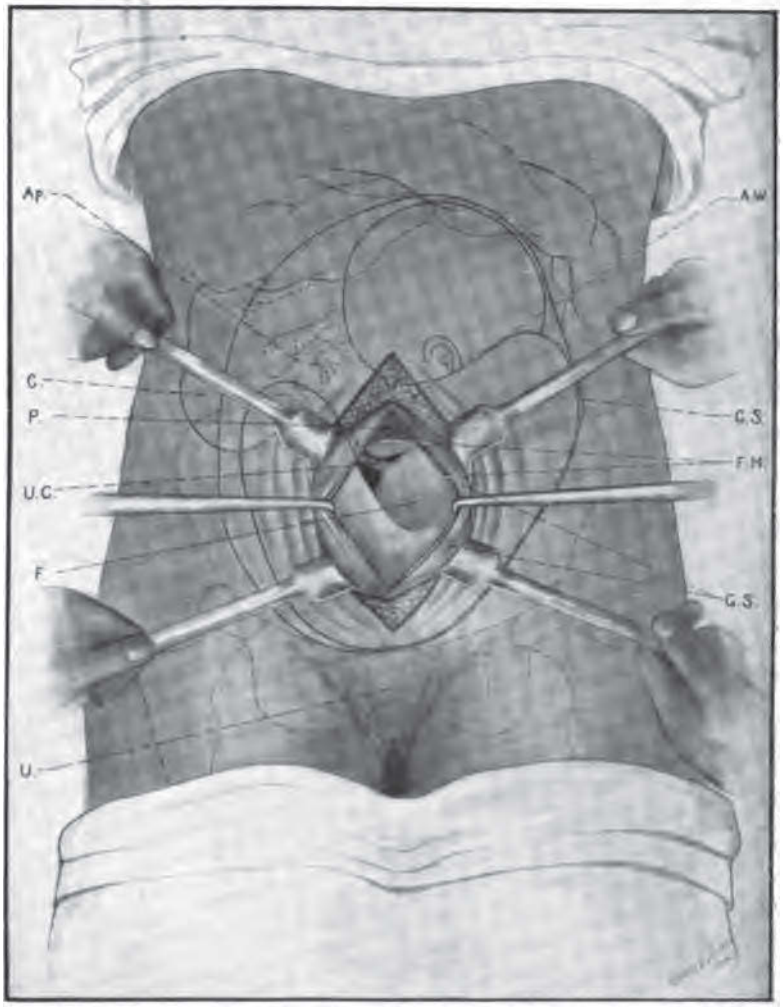

FIG. 1.—Diagram showing ovarian pregnancy at term. A. W. Abdominal wall. G. S. Gestation sac. F. M. Fetal membrane. A. P. Appendix. C. Cecum. P. Placenta. U. C. Umbiblical cord. F. Fetus. U. Uterus.

obtained. A sort of pedicle in the region of the right ovary was ligated with interlocking stitch and was severed. In ligating the adhesions on the left side, the tube was also removed.

The uterus was somewhat larger and softer than normal and occupied the central and dependent portion of the pelvis. The fetal membranes separated easily from the sac and the denuded portions were greenish-yellow in color. The amniotic fluid was greenish-yellow in color and was turbid. Some of it escaped into the peritoneal cavity. The sac and contents having been removed, the abdominal cavity was flushed with saline solution and flank drainage on either side instituted. The abdominal wound was closed in layers. The operation was performed in less than thirty minutes. The patient suffered considerably

FIG. 2.—Posterior view of gestation sac. External surface. O. Omental adhesions. A. Appendix. L. T. Left tube. O. V. Ovarian vessels. U. L. Utero-ovarian ligament.

from shock and was put to bed in a critical condition. She was given hypodermoclysis of saline solution and stimulants, and gradually rallied from the operation. The child seemed normal in every respect. At this operation, I was most efficiently assisted by Drs. Cleveland H. Shutt and Rodney J. Bunch.

Post-operative Course.—The patient developed a localized peritonitis, and endometritis. She ran a febrile course, and owing to her weakened condition and a bad cystitis, her convalescence was somewhat protracted. She ultimately made a good recovery and has assumed her usual vocation.

The Child.—The child is a full term male baby, well developed, with no deformities, but is somewhat poorly nourished. The skin is wrinkled, somewhat macerated and there is desquamation over entire body. There was a deficiency in the amount of vernix caseosa. Hair covering scalp normal, finger-nails well developed and projecting, toe-nails well developed. Child is a

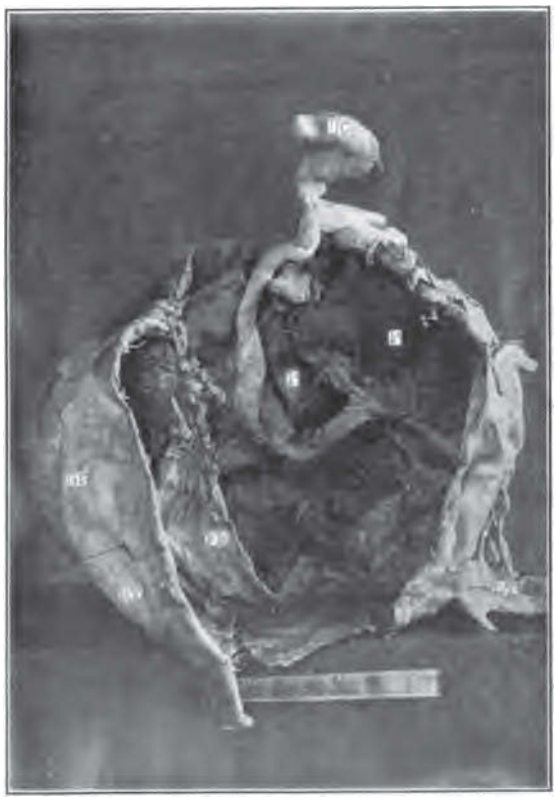

FIG. 3.—Interior view of gestation sac. U.C. Umbilical cord. P. Placenta. G.S. Gestation sac. F.M. Fetal membranes. L.T. Left tube. R.T. Right tube.

mulatto. Eyes, nose, mouth and genitalia are normal. No evidence of congenital disease.

Measurements.—Head, biparietal, 8.5 cm.; bitemporal, 7.5 cm.; fronto-occipital, 11 cm.; mento-occipital, 11 cm.; sub-occipito-bregmatic, 9 cm.; occipito-bregmatic, 10 cm.; bimastoid, 7 cm.; suboccipito-mental, 8 cm.; fronto-mental, 9 cm. Cir-

cumference of head around cinciput and occiput, 34 cm. Across shoulders, 12 cm. Chest: lateral diameter, 7 cm.; antero-posterior, 8 cm. Length, 48 cm. Weight, 6 3/4 pounds. The child was nourished by artificial feeding and thrived well. Both mother and child ten months later are in good health.

SPECIMEN.

Macroscopic Appearance.—It was not possible to at once prepare the specimen for microscopical examination and instead it was placed in Kaiserling solution. The specimen represented a closed bag opened by incision. The dimensions were 20 x 18 x 16 cm. The outer surface is partly roughened by torn bands of adhesions. The anterior surface is free. On the posterior surface, the severed appendix, 10 cm. in length, is densely adherent. On the upper surface are attached remnants of omental tissue. On the left side the severed left Fallopian tube, 6 cm. in length, is loosely attached. The tube is normal. The right tube is adherent to the right side of the sac in much the same manner as the appendix. The fimbriated end is covered over by adhesions, but has no connection with the interior of the sac. The tube is 11 cm. long and of nearly uniform diameter. At the lower part of the sac, there is a ligamentous structure resembling the utero-ovarian ligament. On the right side below and beyond the attachment of the right tube, there is a rather large and tortuous artery and large veins. There are also vessels leading into the sac from the omentum and left broad ligament. The interior of the sac is lined by placenta and fetal membranes.

The placenta is mostly situated on upper and anterior portions of sac and away from region of right tube. It measures 12 x 9 x 5 cm. and in one portion is 14 cm. across. The umbilical cord is 42 cm. long and 1.2 cm. in diameter. It divides into four branches; the two larger branches going to the placenta, the two smaller ones supplying the membranes. The placenta and especially the fetal membranes can be easily separated from the gestation sac. The gestation sac is less pliable than the fetal membranes and is mostly 1 to 2 mm. in thickness. The left portion of the sac is thinner than the right and numerous bloodvessels can be seen to ramify through this structure. Several portions of the specimen were removed for microscopical examination.

MICROSCOPIC EXAMINATION.

From the surgical standpoint the case is of interest in that both mother and child were saved. With the exception of a slight contracture of the left side of the neck and a slight asymmetry of the head, the child seems normal. This is also unusual in cases of ectopic gestation, where deformity or malformation is the rule.

A study of the specimen combined with the history of the case leaves little doubt as to the nature of the pregnancy, and it may be considered of the ovarian type for the following reasons:

1. The history of the case points to an ovarian pregnancy on the right side.

2. At operation a large gestation sac resembling an ovarian cyst was encountered, the pedicle or area of attachment being in the region of the right ovary. The main blood supply to the placenta was received from this site.

3. The uterus was comparatively free, slightly enlarged and centrally located, permitting prolapse.

4. The left ovary and tube were normal.

5. A right normal ovary was not found.

6. The right tube was adherent externally to the gestation sac in much the same manner as was the appendix, but otherwise the tube was found to be normal.

7. The placenta was located entirely within the gestation sac and was entirely free from attachment to any part of the peritoneal cavity. It occupied the anterior and upper part of the sac and had no relation with either tube.

8. There was no mass of ovarian tissue found, nor anything to indicate tubo-ovarian or abdominal pregnancy.

9. The physical characteristics of the sac are those of an ovarian cyst and microscopical examination gives evidence of ovarian structure and origin.

10. The gestation sac was attached to the uterus by a ligamentous structure and its position on the specimen seems to indicate that the right tube did not become adherent to the sac until it had attained considerable size.

These conditions practically conform to Spiegelberg's requirements for the demonstration of ovarian pregnancy.

CITY HOSPITAL.

DISCUSSION.

DR. E. GUSTAV ZINKE, of Cincinnati, said that ovarian pregnancy, pure and simple, was a very rare thing, and he was glad that, at last, a case was brought before the association which left absolutely no doubt in our minds as to its real character. It was remarkable what nature would not do under these circumstances when the ovum was implanted ectopically. The most frequent cases of ectopic gestation which went to term were those where the tube held out to the last. It was comparatively rare, it was true, but those were the cases in which there were no adhesions between the abdominal viscera and the ectopic gestation sac. The next in frequency was the ovarian, but here very often rupture took place because of the brittle character of the ovarian tissue. There was another variety of ectopic gestation which went to term, but which was the rarest of all, and that was in cases of tubal rupture, or tubo-ovarian pregnancy, rupture took place sufficiently to permit the amniotic sac with the decidua reflexa, which was formed under these circumstances, to escape into the abdominal cavity. Here the placenta continued to grow within the tube or ovary, as the case might be. Sometimes it made its way outside of the structures and implanted itself upon the pelvic wall. Occasionally it happened that the membranes were broken because of the movements of the fetus, and then the fetus was found free in the abdominal cavity. While this was an exceedingly rare occurrence, still it had been observed.

DR. ERNST JONAS, of St. Louis, reported a case that was operated upon by Dr. Tuholske, he assisting him at the time, where in the second month of pregnancy the whole ovum was swept away from its seat of implantation in the right tube into the free abdominal cavity; implanted itself in the region of the liver, changed the liver tissue, the peritoneum covering the kidney, and parietal peritoneum to such a degree that it was able to change these tissues to true decidual tissue. The pregnancy went on to full term, and the child was removed at the end of pregnancy alive. The mother, however, died twelve hours after the operation. Why she died, they did not know.

The specimen which they had in their possession showed that it would have been absolutely impossible to have removed the placenta by force from these organs. There was no contractile tissue around it which would have led to stoppage of the bleeding.

DR. A. B. MILLER, of Syracuse, N. Y., stated that in the pathological museum at Syracuse a specimen of an ovary had been recently placed, which contained an ovum of perhaps two months' development. The patient was operated on by a neighboring surgeon, who supposed that he was dealing with an ovarian cyst. The patient came complaining of more or less pain, and on examination a small globular mass was found in the pelvis. Without taking a history of the case as to the possibility of its being a pregnancy, the patient was operated on,

the ovary removed, and found to contain this small embryo. Its appearance on inspection was that of a bur within an oyster or cameo setting.

DR. ROBERT T. MORRIS, of New York, asked whether obstetricians did not make a mistake in removing the placenta in these cases. He said the peritoneum would digest beef-steak, and there was no necessity for removing the placenta. He recalled one case in which the placenta was left for three months without doing any harm whatsoever.

A STUDY OF FOUR HUNDRED AND FORTY OPERATIONS ON THE APPENDIX WITH REMARKS.[1]

BY
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(With two illustrations.)

THE work herewith reported is the writer's personal experience.[2] It is the writer's habit to look over the histories of his cases now and then, to study up some particular subject and to learn the results both immediate and remote. If written histories are not studied, one gets impressions as to results which are often widely at variance with the true condition of affairs.

To-day I wish to present to you the result of my work on the appendix. It is my first offense for I have neither written nor said a word on the appendix before. So much has been said and written on the appendix that I rather hesitated to bring this matter before you. No small amount of good work on the subject has been developed by Fellows of this Association and published in our transactions. I would dare say that what cannot be found in our transactions is not of great value.

I have, nevertheless, asked your indulgence especially as we have much to learn and our death rate is still high. It is high for the chief reason of late operations on neglected cases. If only the diagnosis were made earlier and the hypodermic syringe were less in evidence, how much better our results would be. All this is a discouraging feature of my work.

Conditions necessitating work on the appendix presented themselves 440 times up to March 30, 1909. Of these 40 per cent. were males and 60 per cent. females. Females probably predominated because my work is mostly among women; for

[1] Read at the Twenty-second Annual Meeting of the American Association of Obstetricians and Gynecologists at Fort Wayne, September 21–23, 1909.

[2] His own work with that of Dr. Charles L. Ill and their combined assistants comprise several times the number of cases herewith reported.

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