ECTOPIC PREGNANCY, WITH REPORT OF TWO CASES.

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On June 23, 1890, a lady called at my office complaining of bloatedness, backache, and constipation. She gave her age as 27, was of American birth, had enjoyed perfect health up to her marriage four years ago; pregnant once three years ago, labor at full term, normal. Right after she got up from confinement she had ulceration of the womb, for which she was treated over a year in Milwaukee. It is an exacerbation of this womb trouble (she thinks) that now compels her to consult a physician. Upon examination I found the cervix neither lacerated nor ulcerated. In the region of the right ovary there was a painful swelling; a thorough examination, however, was impossible, on account of the tenseness of the abdominal walls. I told the patient that part of her complaint was no doubt due to constipation, and that I would first try to relieve this and pay more attention to the womb later; I prescribed accordingly. About a week later, on the 30th of June, she again called at the office on account of constipation and intense bearing-down pains. I again examined and found the uterus decidedly larger than normal, the cervix peculiarly soft and doughy; the swelling on the right side of the womb seemed also somewhat easier to be felt. I told the patient I thought she was pregnant, and the bearing-down pains might indicate a miscarriage. She repudiated the idea, as she noticed no subjective symptoms of pregnancy, and as she had always been regular with her periods. She had menstruated last on the 7th of June, and expected surely to menstruate again on the 7th of July.

On July 3d I was called to the patient's house. She suffered excruciating pains, beginning in the lower part of the abdomen and radiating down the thighs; the pains were steady and there were on intermittent, labor-like pains. Enemata opened the bowels, but did not remove the pains, which were only controlled by morphia. There was no nausea, no fever; appetite wonderfully good. In this way she passed a miserable time up to the 7th of July, the date of the next expected menstrual period. For the first time in three years the menstrual flow failed to appear. On the 12th, however, there was a show, and on the 13th she flowed quite freely. Meanwhile I had made up my mind that she was undoubtedly pregnant; and in order to satisfy myself as to what had become of the swelling on the right side, I examined on the 14th. There was no doubt that it had decidedly increased and had pushed the uterus over to the left and somewhat forward. It was exceedingly painful. To all appearances I

had to deal with a case of extra-uterine pregnancy. I thus informed the husband, and we decided to call Dr. Jaggard in consultation.

On the 18th we examined the patient under chloroform, and found the uterus enlarged, especially so in its antero-posterior diameter, pushed forward, and somewhat to the left. The cervix had the soft, doughy touch characteristic of pregnancy. To the right of the uterus, in a somewhat downward and backward direction, an elastic tumor of the size of a child's fist was felt. Between the uterus and tumor there was room enough to put in a finger. Dr. Jaggard confirmed my diagnosis and also concurred with me in recommending immediate operation. This I did at the Michael Reese Hospital, Dr. Jaggard being present, on the 25th of July.

After opening the abdomen the bowels appeared slightly stained with bloody serum. Pushing these back, the whole situation could be taken in at a glance. Having introduced a colpeurynter into the rectum (as I am in the habit of doing, in order to lift up small tumors situated deep down in the pelvis), I at once reached the tumor. There was, to the left, the uterus, twice its normal size and very turgid. The left tube, very much hypertrophied, as thick as the index, exhibited large veins. The right tube was still larger; its middle part especially showed an immense hypertrophy of its muscular elements, which spread like a fan over a tumor. The latter was of the size of a child's fist; it was glued by soft attachments to the uterus, the rectum, small intestines, cæcum, and right side of pelvis. These adhesions were so loose that they easily broke down under the finger. Very little hæmorrhage followed. After thus freeing the bulk of the tumor a pedicle was easily formed. I first ligated the uterine end of the tube, then I secured, by three linked ligatures, the fimbriated end of the tube and part of the broad ligament, including also the ovary. After removing the tumor there was an annoying oozing from a separated adhesion to the rectum, so much so that I decided to use a tobacco-bag tampon with iodoform gauze, after Mikulicz. The patient rallied very readily from the operation. There was considerable bloody discharge through the tampon during the first two days. The tampon was removed on the sixth day. For a number of days the temperature rose to 101° in the evening, which elevation was due to the iodoform as was clearly demonstrated by the prompt return of normal temperature as soon as we began using oxide of zinc and later on balsam of Peru. There is still (on October 26) a small fistula left, at the bottom of which I think a ligature keeps up a little discharge; otherwise the patient is well. She began menstruating, the first time after the operation, on September 18th.

Examination of the specimen showed that it

¹ November 11th, ligature extracted through fistula.

was a case of tubal pregnancy. The ovisac proper was situated in the middle of the tube, while the upper wall of the tube—*i.e.*, the part next to the anterior abdominal wall—showed immense hypertrophy of its muscular fibres (they were as large bundles of a strong biceps). The opposite side of the tube was thinned out so much that it seemed as though the ovum was ready to break through, out of the tube, into the cul-de-sac of Douglas. The amnion was intact; it contained about an ounce of fluid, and the fetus well differentiated and apparently about five weeks old. The ovary, which was removed together with the tubes, contained a cyst of the size of a small apple, being filled with a chocolate-colored, thin fluid.

Shortly after the preceding case had left the hospital another was brought in, of which the house physician, Dr. M. Goodkind, has furnished me with the following history: Patient *æt.* 40, menstruated at 14; menstruation every four weeks up to five years ago, when the flow became irregular, sometimes occurring twice a month; generally lasts seven days, without pain and of fair quantity. Patient menstruated last three months ago (May 20th). Married seventeen years; three confinements, all full term, normal labors; eldest child 13 years old, youngest 5. Six weeks ago (July 16th), while washing she experienced sudden and excruciating pains in neighborhood of genitals, causing unconsciousness which persisted for an hour. When she emerged from this condition she described sensations of vertigo, tinnitus aurium, pain, dyspnea, and utter prostration, causing such intense distress that she became incapable of any exertion and took to bed. Accompanying these symptoms she had alternating chills and fever, anorexia, nausea, and vomiting. A week after she began to menstruate slightly, and has done so to date. These various symptoms caused a rapid deterioration in health, and on August 27th she entered M. R. Hospital.

Status presens: Patient of strong build but extremely anæmic; has a haggard and careworn expression. She suffers with intense bearing-down pains. Abdomen presents a symmetrical enlargement extending from the symphysis to one inch below the umbilicus, of fairly hard, elastic consistence. No fetal sounds.

By bimanual exploration we found the cervix pushed up behind the symphysis by a round-shaped tumor resembling a small head descending down upon the floor of the pelvis. It was impossible to properly locate the fundus uteri, its outlines being lost in the tumor, which extended from the posterior cul-de-sac along the region of the left broad ligament to within an inch below the umbilicus. It seemed to fluctuate, and, in fact, to present all the symptoms of a hæmatocele. I inserted an aspirator needle, but did not get any fluid. The following days the patient had a little fever, the temperature ranging in the evening be-

tween 100° and 102°; the pains were controlled by morphia, but the tumor seemed to rather increase, causing retention of the urine, necessitating frequent use of the catheter. I deemed it necessary to do something radical to relieve the patient, and so I decided upon laparotomy. Our junior gynecologist, Dr. Frankenthal, agreed with me in the diagnosis—hæmatocele, probably caused by the bursting of an ectopic ovisac. September 4th was set for the operation.

After opening the abdomen the omentum and bowels appeared tinged with a peculiar yellow-brown color, which revealed at once the bloody nature of the tumor. The tumor lay hidden under the small intestines, which were easily loosened by the finger and pushed back with a sponge, so that the apex of the tumor was brought to view. After sponge-packing all around it, in order to protect the abdominal cavity against an overflow of possibly poisonous liquid, I first tried to aspirate; but, failing to get any fluid, I cut into it with a knife, making an incision wide enough to admit a half hand. It contained black, semi-coagulated blood, which I scooped out with the hand. Thus far I thought I had to deal with a simple hæmatocele, and that the uterus lay pushed over to the left side. While manipulating to get the last coagula out I loosened what I considered to be the womb; it proved to be a hard, solid coagulum, which was hanging attached to a few loose shreds from the left horn of the uterus. The uterus proper I found in the median line and of normal size. After thoroughly cleansing the abdomen and the sac, I stitched the latter to the peritoneum and packed it with iodoform gauze. The patient rallied nicely from the operation. On the second day, however, the temperature went up to 103°, the abdomen became tympanitic, pulse weak, 130. Gases had failed to pass so far, in spite of laxatives, rectal tube, and turpentine enemata. We really thought the patient in great danger of beginning peritonitis, and in order to give her a chance we took her at 9 o'clock in the evening to the operating room, in order to relieve a possible retention of the wound secretions. While she was on the table, and before I had done any mischief to the wound, the first flatus passed *coram publico*. From that time on she began to feel better. She is still in our ward and has no fever; the wound discharges very little, and is becoming smaller from day to day.

In this case tubal pregnancy had occurred, the ovisac burst, first causing hæmato-salpinx, then hæmatoma of the broad ligament, finally tearing and disintegrating the whole tube, the remnants of which were hanging down in shreds from the left cornu uteri. Later on there was renewed hæmorrhage into the pouch of Douglas, causing hæmatocele. The sac, which I stitched to the abdominal incision, was organized blood, not

peritoneum. The original ovisac, represented by the hard coagulum covered with villi, lay inside of the hæmatocele.

I now wish to add a few general remarks :

1. *Diagnosis of Ectopic Pregnancy.*—It must be easy to make a correct diagnosis after the fourth month and before rupture of the sac, because we feel the living fœtus or hear the heart sounds. Before the fourth month there might sometimes be a doubt left, especially if the physician sees the patient perhaps only once, or if he be unable to get an intelligent history. Besides the well-known and generally accepted signs of pregnancy (subjective and objective ones), I would derive the most valuable help, in making a diagnosis, from a close history. There will always be some *irregularity* in the menstrual flow—either cessation or too early recurrence of the periods—while formerly the menstruation has been regular. This irregularity resembles very closely the flow in a case of abortion. Another valuable symptom will be intense, excruciating bearing-down pains, mostly one-sided. These are not labor-like pains, but are more steady. They are no doubt caused by distention of the tube, due to the rapid growth of the tumor. If we add to this the objective symptoms—the enlargement of the uterus, that characteristic doughy touch of the cervix, the presence of a gradually increasing tumor somewhere in the region of the broad ligament—then I think there should be sufficient reason to warrant the diagnosis of ectopic pregnancy. My first patient illustrates this symptomatology most conclusively. She is a woman who has always menstruated regularly to the day. Fourteen days after her last menstruation she begins to experience intense bearing-down pains, starting in the right hypogastric region; then, for the first time in three years, she goes over her time six days; then a free flow sets in for ten days, shreds of decidua pass. With all that there is no fever and no other cause to explain the pain. By digital exploration we find an enlarged uterus giving that characteristic doughy feel of pregnancy, together with a steadily increasing tumor situated near the womb in the region of the broad ligament. There was, however, one classical symptom of pregnancy wanting, namely, the patient herself had not the slightest idea of being a gravida.

Now, how about the diagnosis of rupture of the ovisac? Those cases constitute two different classes, namely: (a) Rupture causes acute internal hæmorrhage. Now, since there is hardly any other trouble but ectopic pregnancy causing internal hæmorrhage, we may diagnose it at once if a patient shows the well-known symptoms of acute internal hæmorrhage. (b) Rupture causes peritonitis, sepsis. If a patient had not been under observation before the accident, it might often be impossible to differentiate a ruptured ovisac

from a ruptured pyo-salpinx, ovarian cyst, or the like. About hæmatocele see further on.

2. *Anatomy.*—You know that Lawson Tait claims that the different varieties of ectopic pregnancy described in the text books are mere theoretical classifications, and that all cases are originally tubal, becoming ovarian, interstitial, or abdominal only after rupture of the tube and migration of the ovum to a new resting place. The simplicity of this theory recommends it. All the recently published cases were tubal pregnancies, as were the two cases related this evening. The first case also clearly demonstrates by the thinning out of the tube the possibility of an ovum slipping out of such an opening.

3. *Frequency.*—Late publications go to show that ectopic pregnancy occurs much more frequently than we have generally thought, a great number of cases of so called *hæmatocele retro-uterina* and hæmatoma of the broad ligament being nothing but cases of ruptured ectopic pregnancy. Martin, Olshausen (of Berlin) have described many such cases. Sure enough, they never found the fœtus, but were able in every instance to demonstrate the true nature of the disorder by the presence of decidua cells. Orthmann (who published Martin's cases) says that if in a hæmatocele we find an organized, well defined coagulum, we may feel sure that this coagulum was originally an ovisac. Upon its microscopic examination we will find villi or decidua cells. Our second case wonderfully corroborates this statement. *In situ* yet of the torn and bursted left tube, and surrounded by the semi-coagulated blood accumulated in the hæmatocele sac, we found a coagulum of the size of an apple, being covered with villi and enclosing the shrunken remnants of an otherwise well-differentiated fœtus.

4. *Predisposition to Ectopic Pregnancy.*—It is worth while to repeat here that the first patient had been ailing for years (after her first confinement) with pains in the right ovarian region, and that an ovarian cyst of the size of a small apple, containing thin, chocolate-colored fluid, was removed together with the ovisac, right ovary and tube.

5. *Treatment.*—There is hardly any possible difference of opinion about what to do if a physician is called to treat a patient showing the symptoms of a bursted ectopic ovisac. We have, of course, to perform laparotomy at once—in the one case to stop an otherwise fatal hæmorrhage; in the other case to remove decomposed matter which, if left in the abdominal cavity, will undoubtedly set up fatal peritonitis. (See also the remarks about hæmatocele.) What shall we do with a case where the sac is still intact? Let us first ask what will become of the patient if left to her fate. The sac might burst at any time, thus giving the patient a chance to die either from hæmorrhage or from sepsis; or if she should

escape both, and the foetus undergo mummification (lithopedion), she might, after years of suffering, see the foetus make its way out of the abdomen by perforating bladder, vagina, and rectum. Such being the case, I think the best way to deal with any case of extra-uterine pregnancy is to extirpate the ovisac as soon as the diagnosis is made. For, even if we succeed in killing the foetus by electricity, aspiration, or injection of morphine, we are by no means sure that no sepsis or hæmorrhage will follow, or that, years after, a lithopedion will not cause trouble necessitating an operation.

In an early month the operation will amount to nothing more but a laparotomy for a small ovarian tumor or salpingitis.

Thomas has warmly advocated the use of electricity, not only with a view to killing the foetus and waiting for its resorption, but also with a view to arresting placental circulation, thereby minimizing the danger from hæmorrhage in a subsequent laparotomy. This would seem a very good plan if the action of electricity were sure; but since it is not, it seems more rational to operate at once and not allow the placental circulation to increase by a delay due to futile efforts to arrest it. In my first case Dr. Jaggard and I discussed the propriety of a trial with electricity, but we decided to gain time over an increase of the placental circulation by immediate operation, and we really had no difficulty in controlling hæmorrhage.

However, as gestation progresses the danger from hæmorrhage increases. There being no contractile tissue to stop the gush of blood issuing from the placental insertion, it is of the greatest importance not to disturb the placenta. In such a more advanced stage of ectopic gestation where rupture occurs less frequently, I would try Thomas' plan with electricity as the first preparatory step to a later laparotomy. In case pregnancy, for some reason or another, has been allowed to go on to near full term, the child has also some claim for consideration. Here, in order to save a viable child, we might put off laparotomy until labor begins, being ready, however, to operate at any time if symptoms of rupture of the sac should demand it. The safest way to treat with the placenta in such a case seems to be not to attempt to detach it, but stitch the sac to the abdominal wound, pack with iodoform gauze, and wait for spontaneous loosening of the after-birth.

In case of hæmatocele the proper treatment would be to first wait for natural resorption of the bloody effusion; second, aspiration; third, opening through the pouch of Douglas, if the tumor does not reach high enough to allow it to be sewed to the abdominal walls; fourth, laparotomy, if the tumor touches the anterior wall of the abdomen. Laparotomy seems the most rational procedure, because it shows us to properly locate

the extent and surrounding parts of the hæmatocele. Whenever incision is resorted to, the opening should be made wide enough to get all the coagula out. In the last case I doubt whether it would have been possible to get the large coagulum out through the vaginal opening.

MEDICAL PROGRESS.

Therapeutics and Pharmacology.

A NEW DISINFECTANT.—The list of disinfectants that has grown so rapidly of late, has received a further addition under the name disinfectol (*désinfectol*). According to LOWENSTEIN (*Revue Hebdomadaire de Thérapeutique*) it consists of a combination of iodine phenol and different hydrocarbons. It is a liquid of considerable consistence which in odor and properties approaches closely to creoline, of alkaline reaction and miscible with water in all proportions, forming a clear or grey emulsion according to the proportions employed. M. Beslin in testing the antiseptic value upon fæces found that in the proportion of .5 it disinfected an equal volume of fecal matter in eighteen hours. In the strength of 10 per cent. an equal volume of fæces were completely sterile at the end of fifteen minutes. The bacillus typhoidal was destroyed by a two per cent. solution. The five per cent. solution was equal in disinfecting power to one of 12.5 of creoline, hydro-chloric acid 33, carbolic acid 5, sublimate 2.

RAPID EFFECTS OF KOCH'S REMEDY IN LARYNGEAL PHTHISIS.—PROF. OPPENHEIMER, of Heidelberg, reports the following case (*Deutsche Med. Wochenschr.*, December 4th, 1890):—The patient was a woman, aged 28, who had been ill for two years. She had infiltration of the right upper lobe, dulness at the left apex, bronchial breathing, moist râles, and bacilli in the sputum. Since September of the present year she had continual fever, with evening exacerbations and night sweats. She complained of irritation in the throat, which brought on paroxysms of coughing from six to eight times a day, and made her vomit most of her food. This, and the hoarseness of her voice, made Professor Oppenheimer suspect that the larynx was implicated in the disease, but laryngoscopic examination was impossible, owing to the irritability of the throat, which even the free use of cocaine could not subdue. She was very weak when Koch's fluid (1 milligram) was injected for the first time on November 22nd. Reaction was slight; the coughing and vomiting continued during the day as before. On November 23d she was again injected (1 milligram). Nine hours afterwards the temperature rose from 37.6° to 39° C. During the following night there