of cæcum. Vermiform appendix swelled to about three times normal size, with a small perforation midway between the base and apex, through which pus was oozing. On slitting up the appendix a round hard mass about the size of a small marble was found. It consisted apparently of inspissated fæcal matter, and was firmly impacted at the base of the appendix. The opening between appendix and cæcum very much narrowed. Ileo-cæcal aperture also contracted to about one-half its normal size, and its margins much thickened, and indicated apparently the result of inflammation. The boy had never made the slightest complaint before this attack.

VI. *Dr Brewis* showed—(1.) A small GANGRENOUS OVARIAN CYST with twisted pedicle; (2.) A BROAD LIGAMENT, showing Gartner's duct prolonged from the outer border as a thin pedicle, about 3 inches in length, and terminating in a small cyst.

VII. ON EXTRA-UTERINE GESTATION SIMULATING RETROVERSION OF THE GRAVID UTERUS.

By A. H. FREELAND BARBOUR, M.D.

SOME years ago I brought before the Obstetrical Society a case of extra-uterine gestation which simulated a retroversion of the pregnant uterus. The frozen section which I laid before the Society showed how certainty in diagnosis from physical signs was during life impossible.

A case of a similar nature came under my observation last summer in Ward 28. I have to thank Dr Halliday Croom and Dr Ferguson for particulars of the history of the case before it came under my notice; and my assistant, Dr Walker, for valuable work upon the frozen sections.

In this paper I confine myself to the clinical aspects of the case —looking at the frozen sections only in relation to diagnosis. Dr Walker is still working at the pathological anatomy of the case, and will communicate his results in another paper.

Dr Ferguson of Perth told me he first saw the patient on the 14th March of last year, when she was complaining of some pelvic pain and difficulty in passing water,—not amounting to retention nor requiring the catheter. She said that she had menstruated in the last week of December; and on the 21st of January had pelvic pain on walking, "as if she had racked herself." She had to stop and lay her hand on her side, but did not give up her daily work. On March 17th he examined her, and found a swelling in the posterior fornix, continuous with the cervix, which he supposed to be a retroflexed gravid fundus. He pushed it up, and put in a pessary. He was sent for shortly after this, and found her with symptoms of collapse, and removed the pessary. He attended her up to March 31st, when she was practically well again. On May

2nd and 7th he was sent for to draw off the urine, and learned that on May 1st there had been a slight hæmorrhage from the uterus, the first since the end of December. On May 10th she was sent to Edinburgh, and was in Ward 28 for some weeks.

I did not see her at this time; and Dr Halliday Croom says the condition found exactly corresponded to retroversion of the gravid uterus. The cervix was high up above the pubes; and behind, the pelvis was filled with a cystic mass, in which the fœtal head was felt. As the swelling could not be pushed up, and there were no symptoms calling for interference with pregnancy, the patient went home.

Dr Ferguson was sent for on August 16th, some time after her return from Edinburgh, and found her complaining of severe pain in the abdomen, with great tenderness and a temperature of 104°. Next morning the temperature had fallen to 100°, the pain was relieved, no fœtal heart was heard, and an attack of diarrhœa had set in. Her condition had improved by the 21st of August, so that she was able to stand the journey to Edinburgh Infirmary.

When I saw her on admission I found a tumour extending to the umbilicus, with an irregular outline,—the central part being more prominent and of varying consistence. The form and consistence of the walls of the sac recalled the case which I had laid before the Society previously, although the tumour extended higher up in the abdomen. The condition per vaginam (vagina flattened against pubes, cervix above reach) was exactly like that found in retroversion of the gravid uterus, and in the former case of extra-uterine gestation; but the palpation of the tumour through the abdomen showed that the tumour was not the gravid uterus. And in this case one could recognise (what was not present in the former case) an irregularity in the surface of the tumour, anterior and in the middle line, which at intervals became more prominent and firmer in consistence. From these characters it was diagnosed as the empty uterus incorporated with the front wall of the gestation sac.

She was in a very bad state for operation,—almost moribund, but it seemed her only chance. After consultation with Prof. Simpson (who kindly assisted me in the operation), abdominal section was done.

Operation.—The *peritoneal cavity* was opened into in the middle line, and contained a considerable quantity of very fœtid fluid,—suggestive rather of the post-mortem than the operating-room. The uterus was seen pushed to the right of the middle line by a swelling behind it. A layer of tissue, apparently continuous with the fundus, extended from it upwards, where it was lost, becoming adherent to the bowels. It ended at the left of the uterus in a free border, past which was seen a bluish swelling, recalling a thin-walled ovarian tumour whose pedicle has been twisted. This

was incised, and the fingers passed into a mass of blood-clot, in the heart of which was a fœtus of between the sixth and seventh month. It had apparently been dead some time, as the cord had separated. It was in a state of advanced decomposition.

The sac was cleared out (the placenta, which was on the posterior wall of the uterus, coming away in pieces), then washed out, and stitched to the abdominal wall. A very fœtid discharge now came away from the uterus per vaginam, so that it was thought desirable to wash out the uterine cavity thoroughly.

From the condition of the operation, it was evident that there was little hope of her recovery; and she died.

Remarks.—To ascertain exactly the topographical relations of the gestation sac, it was removed with the pelvis, and the whole frozen.

Dr Walker's drawings enable us to follow the relations of the sac to the uterus and the pelvic contents generally. The sections made were—Vertical mesial, left lateral sagittal, and two right lateral sagittal. The right lateral sagittal, running about ¾ inch from the middle line, shows best the relations of the sac to the uterus; and our drawing is a reduced reproduction of it. (See Plate.)

I. *Right Lateral Sagittal Section.*

The *uterus* (*U*) being displaced to the right of the middle line, is here divided in its whole extent. Its cavity is 4 inches long, the walls being from ¾ to 1 inch in thickness. It contains remains of decidua (*D*).

The *bladder* (*B*)—lying chiefly to the left of the middle line—is cut through at its right corner, the ureter being divided in its wall.

The *rectum* (*R, R*) is seen throughout almost its whole extent; it lies, therefore, entirely to the right of the mesial plane.

The collapsed *gestation sac* (*G. S.*) appears in section as tri-radiate —one limb extending downwards in the position of the pouch of Douglas, coming into relation with the posterior vaginal wall for ½ inch, the second limb passing upwards among the intestines, the third forwards towards the fundus. The *sac wall* is intimately incorporated with the posterior wall of the uterus.

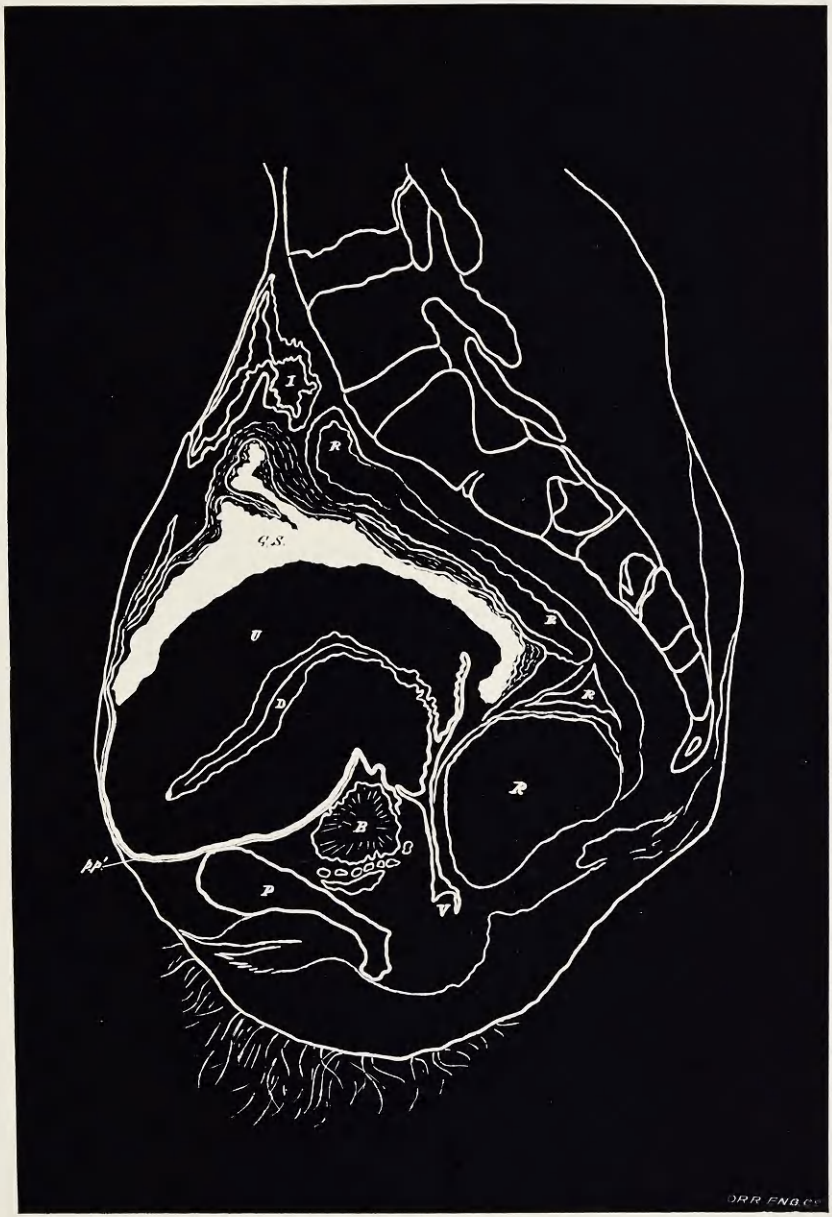
The *peritoneum* (*p p'*), on the anterior surface of the uterus, passes on to the wall of the gestation sac, which is not nearly so thick at this point.

The *intestines* (*I*) are closely incorporated with the sac wall as you follow it upwards.

The *vagina* (*V*) is cut obliquely in its upper two-thirds.

II. *The Vertical Mesial Section.*

The mesial section of the pelvis passes to the right of the uterine cavity (owing to the lateral displacement of the uterus), which is



FROZEN SECTION OF PELVIS WITH EXTRA-UTERINE GESTATION.

U, Uterus ; *D*, Decidua ; *G. S*, Gestation Sac ; *R*, Rectum ; *I*, Intestines ; *B*, Bladder ; *P*, Pubes.

therefore not divided; but the vagina is divided throughout its extent. More of the bladder is seen in this section, and more of the lower end of the rectum; but the upper portion of the rectum (lying, as already said, to the right of the middle line) is only grazed here.

The relations of the sac to the posterior fornix and the fundus uteri are the same here as in the former section.

The lateral sections are the most interesting, as enabling us to trace the connexion of the sac with the Fallopian tubes. In the drawing of the *left lateral section*, made by Dr Walker after the preparation had thawed, you can trace the left Fallopian tube from the left angle of the uterus throughout its course to the fimbriated end. It simply runs in the sac wall. Below it is the left ovary, somewhat expanded, and also incorporated with the sac wall. The sac has not therefore been developed from the left tube.

The left ureter can also be seen pushed aside by the sac, and dilated.

In the *right lateral section* we find the right Fallopian tube much convoluted, and cut across at various points. The opposite face of this section shows that the tube communicates directly with the gestation sac by a patulous opening, suggesting that at least the portion of the wall in this vicinity is formed of expanded tube. The sac wall is much thicker here, and shows in its anterior part a cyst cavity separated from the proper cavity of the sac by a considerable thickness of wall.

The intestines are entirely displaced upwards as far as the summit of the sac; and here the vermiform appendix is seen,—greatly altered in appearance and position, its walls much thickened, and its cavity occupied by caseous-like material. Behind the sac is seen the greatly dilated right ureter passing round its lower angle to reappear below it on its way to the bladder.

The gestation sac is evidently developed in connexion with the right Fallopian tube. The noteworthy features are—its relations to the uterus and to the peritoneal cavity.

As far as the clinical facts go, it seems to have been from an early period posterior to the uterus; and it is noteworthy also that during the first two and a half months there were no symptoms pointing to rupture. To account for these facts, you might suppose that the sac had fallen down and was lying in the pouch of Douglas when Dr Ferguson saw the case in March. That a sac can come to occupy this situation and grow there, is, I think, proved by the case that I laid formerly before the Society. It would be extremely difficult to diagnose a sac in that position from the retroverted gravid uterus. The attempt to replace it must then have been followed by rupture; and it is not quite clear whether

rupture took place into the peritoneal cavity or the broad ligament. We must remember what a very delicate membrane the peritoneum is—a mere layer of epithelial cells with a film of connective tissue; and how the pressure of a tumour causing adhesions completely obliterates it. I do not attach, therefore, much importance to the fact that the peritoneum cannot be traced round the tumour; and considering the delicacy of the peritoneum, I think we may attach too much importance clinically to the difference between intra- and extra-peritoneal ruptures.

The appearance of the sac wall at the fundus is, however, distinctly in favour of the view that the peritoneum has been dissected off the posterior wall of the uterus by the advancing sac,—that is to say, that its growth after rupture was extra-peritoneal. Against this is the fact that the sac was mesial and posterior. One would expect a sac, burst into the broad ligament, to displace the uterus laterally, dissecting its way specially to one side of the pouch of Douglas; in this case it has extended both to right and left of the middle line, simulating throughout in its growth exactly the relations of the retroflexed gravid fundus. The simulation was further maintained by the almost complete amenorrhœa. There was a slight hæmorrhage in the first week of May, and also on two occasions while she was in hospital.

Retention of Urine was present about the same period that we find it in retroversion of the gravid uterus; as also the upward and forward displacement of the vagina and cervix. The reason for these will be evident when you look at the relation of the tumour to the uterus and bladder as seen in the frozen sections.

What, then, are we to rely on for *Differential Diagnosis* in such a case?

Hæmorrhage from the uterus during pregnancy should always put us on our guard. We associate it with a threatening of labour; and in ninety-nine cases out of a hundred it means that. But if a hæmorrhage has occurred at an early period of gestation, without being followed by abortion, and if it has occurred on different occasions, we should always keep before us the possibility that the ovum is not growing in the uterus, but is extra-uterine. In this case the slight hæmorrhage on three occasions should have suggested the possibility of an extra-uterine gestation.

The only physical sign we can rely on in such cases as these is the difference between the feeling, on palpation, of a gestation sac and a pregnant uterus. The fingers per vaginam may not be able to recognise any difference between a gestation sac and the uterus; but the abdominal hand will detect some peculiarity in the shape, or the outline or consistence, which will raise the suspicion that the tumour is not a normal pregnant uterus. In both these cases the contour of the abdominal swelling was unlike that of the rounded fundus; it was harder, and tending to bulge

to one side instead of rising towards the middle. And in the second case, though the uterus was not separate from the sac so that you could recognise it distinctly, there was a swelling in the anterior surface of the sac which varied in its consistence from time to time—a characteristic which showed that this part of the tumour was uterine, although the whole tumour was not the uterus.

Retroflexion of the gravid uterus is generally regarded as a well-marked condition, as having such obvious symptoms and physical signs that it should be recognised without difficulty.

Such cases as the foregoing, exceptionally rare though they are, and in which you have a comparatively rare condition simulating a more frequent and obvious one, are, I think, of peculiar value.

Dr Ferguson (of Perth) said he was glad to have been present and heard Dr Barbour's interesting paper. As regards the early clinical history of the case while under his observation, he could only endorse in every detail what had been related, and thanked the Society for giving him this opportunity of doing so.

Prof. Simpson thought the Society was much indebted to the President for the record of this interesting case, more especially in connexion with the case which he had previously communicated to the Society. He (Prof. Simpson) had repeatedly examined that case, and had ever since been cautious in speaking of the facility of diagnosis of the impacted retroflexed uterus. The points of distinction brought out in the President's paper were of great importance, for when we could recognise the extra-uterine pregnancy early, we could interfere in the way of operative treatment with the most hopeful results. By the time Dr Barbour had had the opportunity of eventually operating on the patient her condition was already hopeless.

Dr Brewis thought the narrated case illustrated the value of anæsthesia in cases of doubtful diagnosis. He considered that in this instance a correct diagnosis might have been arrived at in an early stage of the disease. The absence of decidual membrane in Dr Barbour's case added greatly to the difficulty, as its presence was a valuable sign of extra-uterine gestation.

Dr Oliphant said he had seen an extra-uterine gestation behind the uterus so closely adherent as to simulate a fibroid; and, also, it was possible to mistake a fibroid on a pregnant uterus for a uterus and extra-uterine gestation, as in the case of a woman he expected to deliver who had recently had her abdomen opened.

Dr Barbour, in reply, said that he had advisedly described it as a case of extra-uterine gestation simulating retroversion of the gravid uterus, because the case had been seen at an early period, before symptoms of rupture occurred, by Dr Ferguson, who found the swelling at that date distinctly posterior to the cervix. He had limited his observations to the points in physical diagnosis raised by the case.