Effusions of blood into the Fallopian tube : acontribution to the study of their etiology, based on seventeen cases verified by operation / by Charles J. Cullingworth.

Contributors

Cullingworth, Charles J. 1841-1908.
Royal College of Surgeons of England

Publication/Creation

London : Printed by Adlard and Son, 1893.

Persistent URL

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EFFUSIONS OF BLOOD INTO THE FALLOPIAN TUBE:

A CONTRIBUTION TO THE STUDY OF THEIR ETIOLOGY, BASED ON SEVENTEEN CASES VERIFIED BY OPERATION.

BY

CHARLES J. CULLINGWORTH, M.D., F.R.C.P.

[*Reprinted from Vol. XXI of the 'St. Thomas's Hospital Reports.*]

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PRINTED BY ADLARD AND SON,
BARTHOLOMEW CLOSE, E.C., AND 20, HANOVER SQUARE.

1893.

EFFUSIONS OF BLOOD INTO THE FALLOPIAN TUBE:

A CONTRIBUTION TO THE STUDY OF THEIR ETIOLOGY, BASED ON SEVENTEEN CASES VERIFIED BY OPERATION.

By CHARLES J. CULLINGWORTH, M.D., F.R.C.P.

In view of the present very imperfect state of our knowledge respecting the etiology of accumulations of blood in the Fallopian tube, it has occurred to me that it might be useful to bring together the cases that have come under my own observation, and to ascertain (1) how far they bear out the opinion now largely gaining ground, that the great majority of such accumulations are due to tubal gestation, and (2) in what proportion of the cases, in which the clinical history afforded presumptive evidence of tubal gestation, confirmation of the diagnosis was obtainable from an examination of the effused blood. It will be convenient to arrange the cases in groups under the following headings:—I. Cases in which the evidence of tubal gestation is complete; II. Cases in which the evidence of tubal gestation rests mainly or entirely on the clinical history, no embryonic remains or other distinctive products of conception having been discovered in the parts removed; III. Cases in which the evidence is inconclusive; and, IV. Cases in which the

evidence points to other causes than tubal gestation. Some of the cases have already been published *in extenso*. These will be given here in abstract only, references to the full reports being appended. Others are now recorded in full for the first time. Where abstracts of these have appeared elsewhere, as, for example, in the 'Transactions of the Obstetrical Society of London,' in connection with the exhibition of specimens, the fact will be noted in order to prevent confusion.

Group I. *Cases in which the Evidence of Tubal Gestation is complete.*

This group is limited to cases of unruptured tubal gestation (with apoplectic ovum). Three cases, operated upon *after* rupture, in each of which an embryo and other parts of the ovum were discovered in the peritoneal cavity, are not included.[1]

Case 1 (abstract).[2]—H. O—, æt. 27, admitted March 16th, 1891, with a history of recurrent attacks of pelvic pain during the past two months, with absence of menstruation during the same period. There had been no previous pregnancy for seven years. On the day of admission she had a sudden attack of very severe abdominal pain with discharge of clots *per vaginam*. Thinking she was about to have a miscarriage she presented herself at the hospital and was admitted. There was a rounded, firm, not very tense, swelling in Douglas's pouch, connected with left cornu of uterus. The uterus was pushed forwards against the abdominal wall, and was enlarged, flaccid, and empty. Its canal measured 4½ inches.

The abdomen was opened a week after admission. The left Fallopian tube was found elongated and adherent. Its

[1] These three cases have already been published, two of them in a paper entitled "Three Cases of Early Tubal Gestation," which appeared in vol. xx of these 'Reports,' and the third in the 'Trans. Obstet. Soc.,' vol. xxxiv, for 1892, p. 134.

[2] A full account of this case was given in the last vol. (xx) of these 'Reports' (see paper above cited).

distal end was dilated into a thin-walled cyst, which formed the swelling that had been felt in Douglas's pouch. The cyst was filled with soft, dark blood-clot, in the midst of which was an ovum, about the size of a walnut, with distinct amniotic cavity, and covered externally with chorionic villi. An umbilical cord was found, but no embryo.

The undilated portion of the tube was at least twice its normal size; it measured 4½ inches in length; its mucous lining was greatly congested; its muscular walls were not thickened.

On the day following the operation, a thick decidual membrane, forming an entire cast of the uterine cavity, was expelled *per vaginam*.

The patient made a rapid and uninterrupted recovery.

Case 2.—S. E—, æt. 32, married, was admitted into Adelaide Ward, St. Thomas's Hospital, April 4th, 1892, for what she believed to be a threatened miscarriage. She had only once previously been pregnant, now eight years ago. On that occasion she aborted at the fourth month. About the same time she showed symptoms of syphilitic infection, rash, sore throat, &c. She was not at that time married.

From that period up to her marriage, twelve months ago, she was quite well. Menstruation continued regular after her marriage until November 12th, 1891, when her last period ceased. She had no discharge from that time until seven weeks ago. She believed herself to be pregnant. About the beginning of February, 1892, whilst she was cleaning windows, she slipped from the table upon which she was standing, alighting upon the floor on her feet. Two days later she noticed a slight discharge of blood from the vagina, which continued up to the time of her admission (*i. e.* for two months), gradually increasing in quantity, but never very great in amount. Sometimes the blood was bright red, at other times dark and even clotted. She had not had any pain or interference with the general health throughout.

She was a bright, active, healthy woman of ruddy complexion. The breasts were fairly well developed; the areolæ slightly pigmented. The abdomen was generally

somewhat full, and was resonant all over on percussion. On deep pressure in the right iliac fossa, a swelling could be felt extending for 2 inches above the inner two thirds of Poupart's ligament. On vaginal examination a soft, smooth, elastic, well-defined swelling could be felt occupying the right posterior quarter of the pelvis, pushing the uterus an inch to the left of the middle line, and not depressing the vaginal roof. Running transversely across the vaginal roof on the right side could be felt a pulsating blood-vessel of considerable size. The uterus could be moved to a limited extent upwards and downwards independently of the tumour. After some hesitation the uterine sound was cautiously passed, and the canal was found to be $2\frac{3}{4}$ inches in length.

The diagnosis was unruptured tubal gestation, with apoplectic ovum, or, less probably, an ovarian cyst with recent or still incomplete abortion.

Abdominal section was performed on April 8th, 1892.

A large tense swelling was exposed, situated to the right of the middle line, and consisting of the distended Fallopian tube, with its long axis directed from before downwards and backwards. The tumour was adherent to the posterior surface of the right broad ligament and of the uterus, both of which were displaced downwards, the tumour being above them. Its posterior extremity was firmly adherent to the rectum and the floor of Douglas's pouch. From the uterus, which was small and lying below and to the left of the tumour, a thick band of dense tissue passed in a curve upwards and forwards, connecting the uterus with the tumour. The wall of the distended tube was felt to be extremely thin and tense, and the greatest care and gentleness were necessary to avoid rupturing it whilst separating and elevating it. When brought into view, it was seen to be filled with firm blood-clot. At its distal extremity, and lying with its long diameter closely applied to it, was an oblong projection about $2\frac{3}{4}$ inches long, of a yellowish colour and covered with a tense thin membrane, though which the parts of an embryo of apparently about the tenth week could be easily seen. The denuded bones of one leg and of part of one arm had escaped through small fissures, and were hanging outside the swelling. The broad ligament was transfixed and tied, and the

tube removed, along with the normal right ovary. No blood was found in the peritoneal cavity. The left appendages were adherent, but otherwise normal, and were not removed.

The peritoneal cavity was douched, a glass drainage inserted, and the abdominal incision closed.

The drainage-tube was removed in twenty-four hours.

There being a good deal of abdominal distension on the day after the operation, an enema was administered after the removal of the glass drainage-tube. This had the effect of bringing away a large quantity of flatus, and of giving immediate and permanent relief to the distension. From this time the patient made an uninterrupted recovery, the highest temperature recorded being 100·2°. The sutures were removed on April 14th. The patient was discharged well on May 7th.

The specimen was exhibited at the Obstetrical Society, and a committee, consisting of Mr. Alban Doran, Dr. William Duncan, Mr. Bland Sutton, and myself, was appointed to examine it. The following is a copy of its report, dated May 13th, 1892 :—"The specimen consists of an oval body, 9 cm. long by 6½ cm. in vertical measurement. From one extremity hangs a piece of tissue 3 cm. long, evidently the uterine end of the Fallopian tube. The greater part of the swelling as seen on section consists of a mass of pale red clot, which shows distinct lamination. This clot is invested by the wall of the Fallopian tube. From the other or outer extremity projects a cyst, 4½ cm. in vertical measurements, and broader below than above. To the upper and outer part of the cyst-wall adheres a fœtus, of which the parts are very distinct. The ribs and vertebral column are plainly visible, and the extremities of one side project through the cyst-wall; the lower part of the cyst was occupied by blood-clot. Between the cyst and the clot in the Fallopian tube is a more or less circular, smooth-edged aperture, 1½ cm. in diameter, which, from the appearance of the surrounding parts, appears to be a constriction of the tube. Immediately below, and internal to the fœtal cyst, is the ovary. The fœtal cyst is, therefore, part of the tube.

"Our opinion is that the specimen consists of a gravid tube,

of which the larger and inner compartment contains the placenta infiltrated with blood-clot, and the smaller or outer cavity is occupied by the fœtus, which is compressed against its periphery by blood-clot.

"There is no proof that the tube has undergone rupture."

This singularly interesting specimen has been mounted with great care by Mr. Shattock, and is now in the museum of St. Thomas's Hospital. (See Plate I.)

GROUP II. *Cases in which the evidence of tubal gestation rests mainly or entirely on the clinical history, no embryonic remains or other distinctive products of conception having been discovered in the parts removed.*

CASE 1 (abstract).[1]—A. D—, æt. 26, a shirtmaker, admitted August 29th, 1889. Married at fifteen. Has had five childen and two miscarriages. Last child fourteen months ago; weaned child at three months. Afterwards menstruated regularly until ten weeks before present illness. She then missed two periods, and considered herself pregnant.

Three years ago, viz. on August 13th, 1886, she had been admitted to Adelaide Ward, on account of a hæmatocele, immediately following what was supposed to have been a miscarriage. The following is an abstract of the notes taken on that occasion:—"Two weeks before admission, patient being then ten weeks pregnant, she received a severe shock from the sudden death of her youngest child. A week after this occurrence she was suddenly seized with severe pain in the lower part of the abdomen and back, which was soon followed by hæmorrhage from the vagina. Next day, while at work, she passed a substance which she believed to be an abortion. There was no further hæmorrhage. She continued at her work for a week, when she was again suddenly seized with violent pain in the abdomen, back, and thighs. She became very faint, cold, and pale, shivered and vomited. On admission a few hours later, she was pale and collapsed.

[1] For full details see vol. xix of these 'Reports,' for 1889, p. 186. The specimen was exhibited at the Obstetrical Society of London, and is described in the 'Transactions,' vol. xxxi, p. 257.

Temperature on evening of admission 100°, afterwards normal, except on one occasion, when it was 99°. There was a soft fluctuating swelling in lower abdomen, just above pubes, which was also felt *per vaginam*, occupying Douglas's pouch and both posterior quarters of pelvis. Ten days later no pain, no swelling perceptible above pubes or in the sides of the pelves. Swelling in Douglas's pouch hard and solid. Sound passed in normal direction, but showed slight enlargement of uterine cavity. Discharged August 24th."

After her last confinement, fourteen months ago, she kept her bed three weeks, owing to abdominal pain, from which she still suffered when she returned to work.

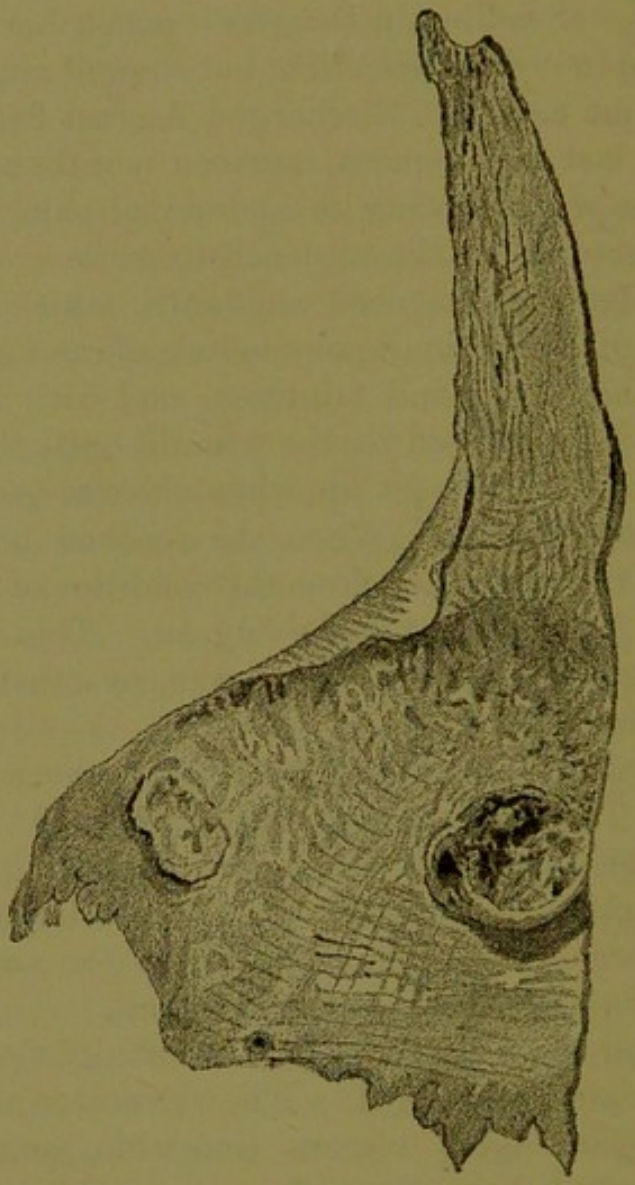
Present illness commenced suddenly, when patient was walking out of doors, five weeks before admission, with feeling of extreme illness and faintness, and with loss of consciousness. She was laid on the ground until she recovered sufficiently to be able to sit up, when she was assisted home. There was no vomiting. When she reached home she for the first time became aware, from the condition of her clothes, that a slight hæmorrhage was going on. This went on up to her admission. No clot, membrane, or other solid substance has been observed.

On admission, patient was pale, but otherwise in good condition. The uterus was anteflexed and empty. In right posterior quarter of pelvis, and extending behind the uterus, a continuous, smooth, oblong swelling, excessively tender. Uterus moved independently of the swelling.

The diagnosis was right hæmatosalpinx.

There being no alteration after a fortnight's rest, abdominal section was performed. The retro-uterine space was roofed in by adherent viscera (intestine, omentum, and uterus). Encysted in the pelvis, beneath the roof thus formed, were seven fluid ounces of soft dark blood-clot. A small conical clot of much firmer consistence fell into Douglas's pouch during these manipulations. The uterus was thick and large, and situated in front. The right Fallopian tube was dilated and distorted, its fimbriated extremity open, and continuous with what appeared like a ruptured cyst, the size of a Tangerine orange. In the wall of this cyst was a slight thickening at one spot, which the

presence of a large and very well marked corpus luteum showed to be a portion of the ovary. A portion of the tube measuring 3½ inches in length was removed. Its outer part was dilated and funnel-shaped, the conical clot already mentioned fitting it exactly. The breadth of the tube when



Dilatation of outer portion of Fallopian tube by a conical clot. The drawing shows the tube laid open, the clot having been removed. On the inner surface of the dilated portion are seen, on the right side, the aperture communicating with the ruptured vein, and, on the left, a scar probably indicating the site of a former rupture.

laid open was, at the narrower or inner end of the dilated portion, ⅞ inch; at the outer or wider end 2⅜ inches. The length of the dilated portion was an inch and a half. The conical clot was firm on section, with an outer layer of

firmer and browner clot. Its narrow end was uncovered with this brown layer, and was black, like the inner portion, with a central canal, large enough to admit a pin, as though a fine stream had penetrated it. The undilated portion of the tube contained a thread of coagulated blood. On the inner surface of the dilated tube was a circular opening, $\frac{1}{3}$ inch in diameter, with a raised edge of mucous membrane, and lined with adherent blood-clot. On careful dissection, this was found to be a small cavity beneath a raised portion of mucous membrane, into which a varicose vein had ruptured, the mucous membrane having in its turn ruptured into the lumen of the tube. The tear in the mucous membrane had been at first linear, but now appeared circular, with everted edges. There was a similar, but somewhat smaller and older lesion, on another part of the inner wall of the tube, leading to a small cavity with blood-stained walls. No vessel could be traced in connection with this cavity. No trace of ovum was discovered.

The patient recovered, and was discharged on November 9th, 1889.

Remarks.—When exhibiting this specimen at the Obstetrical Society, and on several occasions when alluding to it since, I spoke of it as an example of a hæmatosalpinx due not to tubal pregnancy, but to the rupture of a varicose vein on the inner surface of the tube. Further experience, however, and more mature reflection have caused me to alter my opinion. The clinical history points so strongly to tubal gestation, that the discovery of a ruptured varicose vein in the tube-wall seems insufficient to discredit the evidence it affords. For though this pathological lesion might have sufficed to explain the hæmorrhage, had there been no clinical evidence of tubal gestation, it is evident that the two conditions are not incompatible, and that the discovery of the ruptured vein does not exclude the possibility of a co-existing tubal pregnancy. In fact, what condition is more likely to have given rise to venous enlargement? I have, therefore, while fully alive to the fact that the evidence is somewhat conflicting, decided that, in the meantime, the case comes more appropriately in the second group than in the third.

Case 2 (abstract).[1]—E. B—, æt. 29, admitted August 19th, 1890.

Married at eighteen. Four children; no miscarriages. Last child five years ago. Menstruation re-established in due course; continued regular until eighteen months ago, when, after having passed two weeks beyond her usual period, patient was seized with a sudden attack of uterine pain, followed in a few hours by a discharge, like that of menstruation. Was in bed three weeks. After that, menstruated regularly again until three months ago. She then missed two periods, and about the time of the third, July 20th, a month before admission, was suddenly attacked with severe pain in lower part of abdomen, compelling her to go to bed. Her face was markedly pale. Next day the pain came on again while she was in a tramcar. It was very severe, and was this time accompanied with vomiting. Her husband met the car and carried her home, a distance of half a mile. She went to bed, and on the following day, a very slight hæmorrhage commenced from the vagina, which continued up to admission. She remained in bed three weeks, the pain gradually diminishing. The pain was chiefly on the left side, shooting down the leg. Whilst in bed, she noticed a lump in the left iliac region.

The physical signs on admission were those of hæmatocele. The uterus was displaced forwards, empty, 3 inches in length. There was a hard lump above the fundus, and there was indistinct thickening in the region of the right broad ligament.

The abdomen was opened on September 4th, 1890. A quantity of old and recent blood-clot was found behind the uterus, encysted amongst adherent viscera. The hard nodule that had been felt above the fundus uteri proved to be the smaller end of a pear-shaped enlargement of the left tube, measuring 2½ inches by 1¼ inch, firmly adherent to bowel and other parts around, closed at its distal end, and containing firm laminated blood-clot. The swelling on the right side consisted of a cyst of the right broad liga-

[1] For full details see Obstetrical Society's 'Transactions,' vol. xxxiv, for 1892.

ment, about the size of a Tangerine orange. The cyst was filled with blood-clot. There was a rent in the cyst, posteriorly, from which a mass of dark clot was projecting. This was apparently the source of the hæmatocele. The right tube was stretched out on the surface of the cyst and was normal. The right ovary was also normal. The left ovary was not seen. The dilatation of the left tube commenced ¾ inch from the divided uterine end.

The diseased parts were removed, along with the right tube and ovary. No trace of ovum could be found. The patient made a good recovery. She reported herself two years after the operation. She was then stout and well, and was menstruating regularly.

Remarks.—The clinical history here was exceedingly suggestive of tubal gestation, and I have no doubt that is what it was. Two periods having been missed, the patient had a sudden and severe attack of abdominal pain, recurring on more than one occasion, and followed two days later by slight hæmorrhage which persisted. There had been a comparatively long interval since the last normal pregnancy, and there was no disease of the tube to otherwise account for the hæmorrhage. Two points in the case call for a word of comment. Eighteen months previously there had been a similar, but less severe, attack of abdominal pain, followed, as in the present illness, by a hæmorrhagic discharge. On that occasion, menstruation was a fortnight overdue. It appears to me highly probable that the symptoms at *that* time were also due to tubal gestation, but at a much earlier stage. That no appearances which could be connected with such an occurrence were seen during the operation, would be accounted for by supposing that the whole contents of the tube, both ovum and clot, were discharged into the peritoneal cavity and eventually absorbed. The other point of interest is how to account for the ruptured blood-cyst of the broad ligament on the right side of the pelvis. Had it any connection with the supposed tubal gestation on the left side? The only explanation I can offer is the one I suggested at the Obstetrical Society, viz. "that one of the veins of the right broad ligament, sharing the general enlargement of the pelvic veins due to preg-

nancy, had ruptured into an already existing broad ligament cyst."

Case 3 (abstract).[1]—E. J. S—, æt. 25, admitted December 15th, 1890. Family history of phthisis. Married at eighteen. Two children at seven months; two miscarriages at fifth month, the last one two years ago. After last miscarriage was in bed a fortnight, then got up, but had to return to bed on account of abdominal pain and sickness. Ever since has had a thick yellow vaginal discharge, and has frequently had to keep her bed on account of abdominal pain. Has lost flesh and appetite. Her husband, a sailor, was in Clayton Ward in August, 1890, on account of a severe urethral stricture.

Patient was admitted to Adelaide Ward August 11th, 1890, on account of abdominal pain and weakness. She was examined under ether on August 19th. The uterus was anteflexed and fairly moveable. The left tube felt tender, distinctly enlarged, and firm. Condition on right side less clearly defined, but high up can be felt an irregular body. A few days later patient had greatly improved in health, and the ovaries and tubes were felt of nearly normal dimensions, the appendages on left a little larger than those on right. She was discharged August 30th.

On readmission, in December, patient stated that she had been laid up ever since her discharge until a week ago, and had been losing flesh and strength. She menstruated a week after leaving the hospital, and *not since*. In other words, she had missed three menstrual periods. The uterus was low down, anteflexed, and pushed forwards. Behind and to the right was an even, soft, tender swelling. The vaginal roof was depressed by a soft swelling in Douglas's pouch.

Abdominal section was performed on December 18th, both tubes and both ovaries being removed.

The right tube formed a sausage-shaped swelling, 5¾ inches in circumference, and was filled with old, firm,

[1] Full report published in a paper on "The Value of Abdominal Section in certain Cases of Pelvic Peritonitis," 'Trans. Obst. Soc. London' for 1892, Case 44.

partly decolourised clot, closely adherent to walls. From the fimbriated end, which was open, a quantity of dark, firm clot projected. Beneath the mucous lining of the tube were some enlarged veins, filled with clot. The left tube was closed at its abdominal ostium, but otherwise appeared normal. Both tubes were adherent to surrounding parts. The ovaries were also adherent, but otherwise normal. A careful examination of the clot was made for the remains of an ovum, but with an entirely negative result. The patient recovered.

Remarks.—It seems probable that the old attacks of salpingitis and peritonitis left the patient with damaged tubes; that she became pregnant shortly after leaving the hospital at the end of August; that the gestation was tubal, that the ovum soon became apoplectic, and that there was a tubal abortion. The enlarged and thrombosed veins seen beneath the mucous membrane tend to confirm this view. The occlusion of the left tube was evidently due to peritonitic adhesion around the fimbriated extremity. The fact of the husband having been under treatment for stricture of the urethra points strongly to gonorrhœa as the probable cause of the original salpingitis.

Case 4.—E. P—, æt. 27, single, a cook, admitted April 24th, 1891. Had scarlet fever in 1886. Eight months afterwards had an attack of severe pain in the left side of the lower part of the abdomen. She has had several similar attacks since. She has been in her present situation at Weybridge for five months. During that time she has felt very unwell and suffered much from headache, but there is no history of a period having been missed. Six weeks ago she had an attack of severe pain in the left iliac region lasting an hour and a half. Four days later the pain returned, and continued to do so every day until three weeks ago, when it became so severe she had to see a doctor, and she has been in bed ever since. On April 7th, and again on April 15th, she vomited continuously for several hours. Her period was due on April 12th, but the discharge did not come in the usual quantity, and she has been losing blood ever since in an irregular way. She admits having been

exposed to the risk of pregnancy on several occasions during the twelve months before she took her present situation, but not during the last six months.

She was admitted to Charity Ward on April 17th. There was then discovered great tenderness, with sense of resistance, in the left iliac region. Temperature normal, pulse 90. Urine showed a trace of albumen. On April 21st I examined her vaginally, and made the following note :—Tense oblong swelling to left of uterus, high above vaginal roof, in posterior quarter of pelvis. Uterus displaced to right; fundus 2 inches to right of middle line; canal of normal length. My diagnosis was distension of left tube; contents probably purulent. The patient was transferred to my care.

On April 30th the abdomen was opened. There was a small quantity of dark fluid blood with some fragments of old clot, and shreds of lymph, in the peritoneal cavity. The uterus was pushed forwards and to the right by a firm tense swelling in the left posterior quarter of the pelvis. This was separated from its adhesions and was found to consist of the left tube uniformly distended with firm blood-clot, the dark colour of which could be seen shining through the thin wall of the tube. The portion of tube removed measured $3\frac{1}{2}$ inches in length, $1\frac{7}{8}$ inch in breadth, and $5\frac{1}{2}$ inches in circumference. From the fimbriated end, the opening of which was large enough to admit a goose-quill, some ragged portions of firm, dark clot were seen protruding. On longitudinal section there was observed in the midst of the firm clot a small angular cavity or fissure with some membranous shreds (see coloured plate). Mr. Bland Sutton saw the specimen, and considered there was no doubt as to these shreds being the products of conception. They have, however, been several times submitted to a microscopic examination by Mr. Shattock, with negative results.

The right ovary and tube were normal. The left ovary was not seen.

The patient made an uninterrupted recovery, and was discharged well on June 3rd.

The specimen is now in the Hospital Museum. See Plate II.

Remarks.—The clinical history in this case is not conclu-

sive, but it affords strong presumptive evidence of tubal gestation having occurred some months previous to her admission. If that was the case, the ovum must have become apoplectic at an early stage, before the fimbriated end of the tube had time to close. The acute symptoms immediately preceding admission were evidently due to localised peritonitis around the distended tube, and probably also to the occurrence of some fresh hæmorrhage. The clot was not of recent date and this circumstance tends to support the above explanation of the phenomena. At the same time it must be admitted that the failure to detect any microscopic proof of the presence of chorionic villi or other products of conception leaves the origin of the hæmorrhage to a certain extent doubtful.

Case 5.—A. B—, æt. 29, married, a tailoress, admitted June 24th, 1891. Has had two children, the last one seven and a half years ago. She suckled the younger child for eighteen months, and, on the day she weaned him, had a severe hæmorrhage, and continued to lose blood for a month. There had been no menstruation whilst she was nursing. After the loss just described she menstruated regularly until April, 1891. During the period that occurred in that month she began to suffer from pain of a dull aching character in the lower part of the abdomen, which gradually became more severe. She missed her period in May, and since that time the pain has become so severe as to compel her to take long intervals of rest during the day, interfering seriously with her work. On June 10th she menstruated at the usual time, and in the usual manner, except that there were clots in the discharge. Since that time there has been a blood-stained discharge, increased by exertion. The pain in the lower part of the abdomen has become more general and continuous. It has been most marked in the iliac and hypogastric regions, which have been tender. For two days in the week before admission she was obliged to remain in bed owing to the pain and general feeling of illness.

On admission, patient was well nourished but anæmic. The uterus was displaced forwards by a large mass occupy-

ing Douglas's pouch and extending to the right side of the pelvis. The mass was elastic and fluctuating, and equal in size to a large orange. A finger could be passed between it and the pelvic wall on the left side. The uterus was moveable and of normal length. A rounded body was felt lying above the body of the uterus. This was thought to be a displaced and distended tube.

The diagnosis was early tubal gestation with apoplectic ovum and hæmatocele.

On July 2nd the abdomen was opened. The omentum was deeply stained with dark blood. A distended Fallopian tube could be felt and seen above, behind, and to the left of the fundus uteri. The wall of the tube was thin and tense, and the dark clot distending it gave it a deep bluish-black colour. The long axis of the distended portion of the tube was directed antero-posteriorly, the fimbriated end being deeply situated at the back of the pelvis. Some dark blood welled up during the preliminary investigation. The tube was found to be connected with the *right* cornu of the uterus, and to have become displaced above, behind, and to the left of the uterine body. On separating it a cavity was opened containing a small handful of soft dark clot with fragments of decolorised clot. The tube was removed along with the adjacent (normal) ovary. The left appendages were normal.

The patient made a good recovery, and was quite well four months afterwards, when she attended to report herself.

The portion of tube removed included half an inch of normal tube at the uterine end, and an outer distended portion 3 inches × 2 inches, and $5\frac{1}{4}$ inches in circumference. Its distal end was open, and the fimbriæ were distinct. Its wall was thin and tense ; a considerable part of its outer surface was roughened from the attachment to it of firm clot, deposited from the hæmatocele (see Plate III, fig. 1).

The firm clot within the distended tube, and the contents of the hæmatocele, were carefully examined, but no products of conception were discovered. The specimen is now in the Hospital Museum.

Remarks.—Supposing this to have been a case of tubal gestation, of which the clinical history leaves little doubt,

the ovum must have become apoplectic, and the vitality of the embryo destroyed during some part of the second month, when only one menstrual period had been missed, and before the abdominal ostium had had time to become closed. It was most disappointing not to find pathological proof of the correctness of the diagnosis, but it seems evident from the series of cases here recorded that such proof is frequently unobtainable. The re-establishment of menstruation after death of the ovum is very interesting.

Case 6.—M. H—, æt. 27, an ironer, admitted October 13th, 1891. Married six years ago. One child ten months after marriage; labour tedious, attended with severe hæmorrhage. Menstruation re-established three months subsequently. A year later suffered from a yellow discharge and pain on micturition. Three years ago was in the Croydon Hospital for three months on account of pain in the loin and hæmorrhage. Since then has been in excellent health until her present illness.

Four weeks ago, a menstrual period being then a fortnight overdue, patient began to have a blood-stained discharge with some clots, and about half an hour later was seized with violent pain in the right iliac region accompanied with vomiting. In a short time she felt sufficiently well to resume her work. At six o'clock the following morning she was again seized with pain whilst dressing, and had to be assisted into bed. The pain lasted severely for four or five hours, and was again accompanied with vomiting. Two days later she states that she passed a piece of skin. From that time there have been continuous pain and tenderness in the lower part of the abdomen, with occasional exacerbations and vomiting. There has been slight hæmorrhage all the time.

On admission, patient had the appearance of a well-nourished, healthy woman. There was no anæmia. The abdomen was somewhat distended by a doubtfully fluctuating tumour, reaching from pubes to level of umbilicus ($6\frac{3}{4}$ inches), with a rounded upper margin and considerable irregularity of outline on the left side. There was resonance over the whole swelling. On vaginal examination, the

tumour was found to fill the pelvis, depressing the vaginal vault, especially on the right side. The cervix was directed forwards and to the right; the sound passed $2\frac{3}{4}$ inches in a direction slightly backwards and to the left. The uterus seemed to be merged into the tumour. The bladder-sound showed the bladder to be lying in the middle line, the point of the sound being felt 2 inches above the pubes.

The patient was kept in bed for six weeks, and the size of the swelling carefully noted from time to time. She had no pain all this time; the temp. 100·4° on the day of admission, afterwards ranged between 98·6° and 99·6°. The diagnosis was hæmatoma of the right broad ligament. The tumour, in spite of occasional variations in size, not having appreciably diminished in the six weeks to more than a very slight extent, it was decided to make an exploratory incision, in case the swelling might possibly after all prove to be a cyst.

The abdomen was opened on November 23rd. A large, tense swelling was found to occupy the greater part of the pelvis. It was entirely covered in front by coils of adherent intestine. These were carefully separated and drawn upwards, exposing the surface of the swelling, which was dark red in colour. During the separation a hole was torn in the anterior surface of the wall of the swelling, a little to the left of the middle line, through which the finger could be passed. The contents of the cyst were felt to be soft and irregular, like old blood-clot, and on withdrawing the finger it was found stained with altered blood. The tumour extended deeply down on the right side to the floor of the pelvis, where its size was so great as completely to fill the right half of the pelvis and depress its floor. The uterus lay deeply behind to the extreme left, bound down by adhesions. The swelling extended quite up to its left anterior border. It was found possible to separate the swelling from its upper, lower, and lateral surfaces, but posteriorly it appeared continuous with the peritoneum, covering the pelvic floor and walls.

The position of the bladder having been ascertained by introducing the bladder-sound, the incision was extended downwards, and, it being now evident that the tumour

could not be entirely removed, an opening was made transversely in its anterior wall, and a large quantity of blood-clot, of varying age and appearance, removed by the hand. The upper portion of the tumour having been thus emptied, it was found that the upper and lower portions communicated with each other by an aperture large enough to admit two fingers. Through this aperture the lower part of the tumour was emptied of a quantity of clot which was adherent to the wall of the cavity. The walls of the two portions were of different colour and consistence, that of the lower (the broad ligament) being thicker and less dark. The clot was quite free from odour. The quantity measured was 10 fl. oz., but some was lost, and a little unavoidably escaped into the peritoneal cavity. An attempt was made to secure the edge of the opening in the sac by pressure-forceps with a view to tying it to the edges of the abdominal incision, but the tissue was too friable. A portion of the upper cyst (right tube) was therefore drawn out of the wound; and, when no more would come, the portion already outside was cut off, and the edge of what remained secured to the edges of the lower part of the abdominal incision by means of silk sutures, two on each side, one above and one below; the last-named passing through the anterior margin of the aperture of communication with the lower swelling. No toilet of the peritoneum was attempted, the operation having already been prolonged, and the patient's condition rendering it advisable to finish it as quickly as possible. An india-rubber drainage-tube was passed within the lower sac, and a glass drainage-tube was passed into the peritoneal cavity, entering above the sutured sac-mouth, and passing down to the floor of the left side of the pelvis past the right border of the displaced uterus. The upper part of the abdominal wound was then closed by sutures of silk-worm gut, the usual dry dressings applied, and the patient removed.

The clot removed was carefully examined by Mr. Shattock for remains of an ovum, but with a negative result. The sac wall removed was thought at first to be chiefly muscular, and the idea of hæmorrhage into one horn of a bicorned uterus suggested itself. But on microscopical examination it was found to owe its thickness chiefly to inflammatory

exudation, the appearances being those of connective tissue. It seemed evident, therefore, that the sac-wall was not a part of the uterus, but most probably was part of a distended tube.

For the first hour and a half the patient's pulse was rapid and of good volume; it then became slow and weak, and the patient herself became very pale.

The glass tube was removed in forty-four hours, and the stitch tied. The india-rubber tube inside the sac was left undisturbed. On November 26th (fourth day) the stitches binding the mouth of the sac to the abdominal incision were removed; the discharge was slightly offensive. On December 1st some small sloughs came away. On the 9th the discharge consisted of thick pus, and had ceased to be offensive. The temperature remained high up to the 18th January, after which it did not reach 100° F. From that date the patient rapidly improved, gaining flesh and colour, and on February 13th she left the hospital. There was no hardness or exudation remaining in the pelvis, but there was still a small sinus at the lower angle of the wound, which eventually closed.

Remarks.—There can be little doubt from the clinical history that this was a case of tubal gestation, in which apoplexy of the ovum occurred, with rupture of the tube, and escape of blood between the layers of the broad ligament. Had the true condition of things been known, probably the wiser course would have been to leave the case to nature.

Case 7.—K. A—, æt. 34, admitted May 14th, 1892. Menstruation regular from age of 16 until after her first marriage in 1877. Her first child was born in February, 1878. In the fourth month of her pregnancy she had severe pain in the left side of the abdomen, with much sickness and vomiting, and was in bed for six weeks. The labour was protracted and terminated instrumentally. Hæmorrhage followed, and she was pale and weak for some time. She nursed her child for twelve months, menstruation being re-established four months later. After one normal period she became pregnant for the second time, and about the third or fourth month was again confined to bed for some

weeks with an attack similar to the one she had during her first pregnancy. She was delivered prematurely in January, 1880, at about the seventh month, labour being apparently induced by a fall. She again became pregnant in October, 1882, and between the third and fourth month was attacked with severe pain, as on the two former occasions, and was confined to bed for five or six weeks. Delivery took place in June, 1883, after a protracted labour, terminated by the use of instruments. Hæmorrhage occurred both before and after labour, and patient was very weak and ill for four months. Her husband was drowned at the end of 1884. During her widowhood her health was good. She married again in September, 1890, and continued to menstruate regularly until January, 1891, when she fell and injured her elbow. From that time menstruation has been irregular, the intervals being sometimes five or even eight weeks, the flow scanty and often only lasting a single day.

Her last menstrual period ceased November 15th, 1891. On February 3rd, 1892, after feeling unwell for three or four days, she had a sharp and sudden attack of hæmorrhage, and there has been irregular hæmorrhage from that time up to her admission, that is, for three months. The blood has sometimes been red, sometimes dark brown. For about eight weeks she remained entirely in bed. She then, for a week or two, sat up in a chair part of a day, but was unable to sit for more than three or four hours at a time. After that she remained in bed altogether. At no time during the three months has she been able to take any part in the work of the house. Pains like those of labour came on at irregular intervals, followed by an increased discharge of blood and subsequent relief. Between these attacks she was free from pain. No membrane or other solid substance has been observed in the discharges. On May 11th, after being free from pain for a fortnight, she had a more severe attack than usual. She attended a public dispensary, where some attempts were made to reduce what was thought to be a retroverted gravid uterus. Dr. Wheaton subsequently saw her, doubted the correctness of the diagnosis, and sent her into the hospital.

She is a fairly well-nourished woman, with dark complexion.

Her temperature on admission was 99°. Nothing abnormal could be detected on examining the abdomen. A vaginal examination was made under anæsthesia. The uterus was of normal length and somewhat retroverted. In Douglas's pouch, adherent to and moving with the cervix, was a swelling of the breadth of two fingers, lying obliquely, with its upper and outer extremity directed to the right. The swelling was soft, even, and elastic, and bulged the upper part of the posterior vaginal wall forwards. An impulse was conveyed from the fundus uteri to the cervix, but not to the swelling behind it. The right uterine appendages could not be felt in their normal situation. The left could be distinctly mapped out and were normal.

The swelling was diagnosed as the right tube distended with blood, and adherent in Douglas's pouch, and the case was thought to be one of tubal gestation with apoplectic ovum.

Three days after admission the pain ceased and the hæmorrhage diminished.

The abdomen was opened on May 26th. A smooth, oblong, soft swelling, surrounded by recent adhesions, and about equal in size to a pigeon's egg, was found in Douglas's pouch. On being separated and brought to the surface, it proved to be a distended portion of the right Fallopian tube, close to, but not actually involving, the fimbriated extremity, which was sufficiently patulous to admit a probe. The swelling was of a dirty yellowish-brown colour, and evidently contained altered blood-clot. The isthmus of the tube was of normal calibre, and on section was seen to contain a small quantity of brown material (altered blood) in its lumen. The tube was divided and removed. The ovary being normal, was separated from its adhesions, but not removed. There was no free blood in the pelvic cavity.

The patient made an uninterrupted recovery, and was discharged well on June 25th.

The specimen was exhibited, unopened, at the meeting of the Obstetrical Society, held June 1st, 1892,[1] and a committee, consisting of Dr. W. Duncan, Mr. Doran, Mr. Bland Sutton, and myself, was appointed to examine and report upon it. The following is a copy of the report submitted

[1] See 'Trans. Obst. Soc. Lond.,' vol. xxxiv, for 1892, p. 182.

to the Society :—"The specimen consists of the greater part of the right Fallopian tube, 7 cm. in length. Immediately above the abdominal end is an oval swelling of the size of a pigeon's egg, which projects freely outwards. The ostium is patulous and surrounded by fimbriæ, which are somewhat œdematous. The canal of the tube is not only pervious but dilated, so as to measure 0·5 cm. at its narrowest part. On section, the oval swelling is found to be a cyst filled with apparently homogeneous clot. On clearing out the clot, which is partly adherent, the wall of the cyst appears simple, without any evidence of former loculi. No communication with the canal of the tube can be detected. There is a ragged hole immediately above the fimbriæ, apparently artificial.

"On microscopical examination of the clot no chorionic villi could be detected. The clot was intimately adherent to the wall of the cyst, and the epithelial investment of the mucous membrane did not exist."

Remarks.—This was in many respects a remarkable and obscure case. The clinical history led me to feel pretty certain that I should find distinct evidence of tubal gestation with apoplectic ovum. But although there can be practically little doubt that the case *was* one of tubal gestation, no pathological evidence to that effect was forthcoming. The effusion of blood was apparently homogeneous, and was contained in an expanded portion of the tube, which, like the sacculus in Case 2 of the first group (see Plate I), had been formed at the expense, not of the whole circumference of the tube, but of a limited portion of the tube-wall on its upper side only. This pouch-like dilatation had, in a manner that at present seems quite inexplicable, apparently become shut off from the rest of the tube, no aperture of communication being discoverable. An excellent water-colour drawing of the appearances presented by the specimen on section has been made for me by Mr. Holding.

Case 8.—E. P—, æt. 26, admitted August 8th, 1892. Was married at seventeen, and has had three children, eight, six, and four years ago respectively. The labours and puerperia were normal. In June, 1891, she missed

two periods, suffered from morning sickness, and believed herself to be pregnant. Menstruation returned, however, apparently in consequence of a fright, without any excessive loss or passage of clots. After that she continued to menstruate regularly until the first week of June, 1892, when her last normal period occurred, lasting three days. She should again have been unwell on the 1st of July, but no discharge took place. On the evening of the 12th of July, whilst sitting in her kitchen, she was suddenly seized with severe pain in the right iliac region, which lasted from an hour and a half to two hours. She then went to bed, and though there was a feeling of uneasiness in the lower part of the abdomen, she was free from severe pain, and able to go about her work until the morning of the 15th, when she was seized whilst in bed with a severe pain that lasted about two hours. She remained in bed the greater part of that day. On the following day, July 16th, she noticed a discharge of blood from the vagina, which has continued more or less ever since. She has never from that time been absolutely free from abdominal pain. On the night of July 30th, and again on the night of August 1st, the pain was for a short time severe. She has passed no clots. The character of the discharge is said to have varied, being sometimes dark red and sometimes watery.

On admission, patient is a pale, dark-haired, stout, healthy-looking woman, with a temperature of 100°. The lower part of the abdomen is tender and somewhat full. On examination *per vaginam*, the whole uterus is found pushed forwards so as to lie close up against the pubes and anterior abdominal wall. The fundus can be felt two inches above the symphysis. The canal is straight and a little above the normal length. Behind the uterus, and occupying the right side of the pelvis, is a soft, fluctuating, ill-defined swelling, causing a depression of the vaginal roof, and rising into the abdomen to a line one inch above the fundus uteri, and on a plane posterior to it. In the midst of the lateral part of the swelling can be felt a rounded tense body, firmer than the rest of the mass.

The diagnosis was distension of right Fallopian tube and hæmatocele, due to tubal gestation with apoplexy of the ovum.

The abdomen was opened on August 10th. There was some dark fluid blood free in the peritoneal cavity. The pelvis was filled with a large soft swelling, covered in by adherent omentum. In front, and to the right of this swelling, was a tense, soft, oblong tumour, with the uterus below and to the front of it. On separating some of the omental adhesions, a quantity, estimated at about 12 fl. oz., of dark fluid blood welled up, and about 2 fl. oz. of soft clot were exposed and scooped out by the fingers. The tumour, recognised as the distended right tube, was now separated from its adhesions to the uterus and broad ligament, brought into view, and removed along with the ovary, which, except that it was involved in the adhesions, and covered with a deposit of firm clot, was normal. The left appendages were separated from their adhesions and found to be normal. Two pieces of omentum, infiltrated with blood-clot, were tied and removed.

The patient made an uninterrupted recovery, and left the hospital well on September 7th. An endeavour has since been made to trace her, but without success. She had removed from her former address.

The portion of tube removed measured 4½ inches in length, 5 inches in circumference, ½ inch in diameter at its uterine end, 1½ inch at its distal end, and 1¾ inch at its widest part. It was tensely distended with blood-clot; its walls were thin and of a bluish-black colour; its distal end was sufficiently patulous to admit the little finger. The under surface of the tube was ragged and covered with recent blood-clot.

No organised tissue could be detected amongst the contents of the hæmatocele. The tube was set aside to be hardened before being opened. On February 21st, 1893, Mr. Shattock, in my presence, made a longitudinal section. The clot was firm and homogeneous, without appearance of lamination. The tube wall was very thin. The clot was shelled out from one half of the divided tube, and was carefully examined with the unaided eye in the transverse sections. No trace of ovum or other organised structure was detected.

Case 9.—S. S—, æt. 28, admitted September 3rd, 1892. Married at fifteen ; five children, the last born two years ago. She suckled her last child eighteen months, menstruation having been re-established at the end of fifteen months. After menstruating twice, she became pregnant. Abortion took place at the third month in December, 1891. She was confined to bed for a week with pain in the right side of the abdomen and in the back. At the end of a fortnight she was quite well. She menstruated twice normally. About the middle of February, 1892, she was seized with a sudden hæmorrhage, accompanied by paroxysmal pain in the right side and back. The hæmorrhage and pain continued, but less severely, until the beginning of April, when the pain became worse and some clots were passed. After that, there occurred a yellowish discharge, and the hæmorrhage became slight.

On April 23rd, 1892, she was admitted into Adelaide Ward. The condition then was as follows :—She had been losing flesh for several weeks. On vaginal examination, there was felt on the right side an irregular, but well-defined mass, apparently consisting of the adherent tube and ovary. The tube was thickened, and passed first outwards, then downwards, backwards, and inwards. The ovary could be distinguished as a softer body, situated between the two arms of the tube, near the uterus which was normal. The patient was advised to have the diseased tube removed. She improved, however, so much in a few days that she preferred to postpone the operation, and on May 2nd she left the hospital, promising to return if the symptoms recurred. Her highest temperature whilst in the hospital was 99·6° F.

After leaving the hospital the patient had two normal periods. She then ceased menstruating until the end of August, when she began to lose considerably. The loss continued up to her admission, and was accompanied by paroxysmal pain, coming on about twice a day, and lasting about a quarter of an hour, in the lower part of the abdomen and thighs. On one or two occasions she had an attack of sickness and shivering.

On readmission she is described as a thin, sallow-com-

plexioned woman. Her temperature was 100°; pulse 80. Urine loaded with lithates, not albuminous. Some vomiting on day of admission.

The abdomen was rigid and tender. On bimanual examination *per vaginam* a mass was felt bulging into the posterior fornix, and extending to a line three inches above the symphysis pubis. To the right a firmer swelling could be defined, separate from the main mass. Between the mass and the pubes lay the uterus, displaced slightly towards the left, and of a little over the normal length.

She had an attack of severe pain on September 13th, and again on the 14th. From that time she had no pain, the hæmorrhage diminished, and the temperature was normal.

The abdomen was opened on September 22nd in the presence of Drs. Parvin, of Philadelphia, Nagel, of Berlin, Mr. Webster, of Merthyr Tydvil, and others.

The contents of the pelvis were roofed in by adherent omentum. This having been separated and drawn aside, the right side of the pelvis was found to be occupied by a smooth-walled, more or less globular swelling, universally adherent except on its anterior surface. It was separated from most of its attachments without rupture, but in separating some coils of intestine the wall was torn, and a quantity of dark clotted blood escaped. In the midst of the clot, with which the right tube was distended, what appeared to be an open sac, lined by a smooth membrane, projected from the wall of the tube into the interior, near the uterine end. On subsequent examination this open-mouthed sac, which at the moment was thought to be the ruptured ovum, proved to be an invagination of the wall of the tube itself. The tube was secured by ligatures and removed. The ovary, which was normal, was left undisturbed.

The coil of intestine to which the tube had been adherent was now inspected, and a ragged portion of tube-wall, about four inches in length, was found intimately adherent to it. This was peeled off with considerable difficulty, leaving a raw bleeding surface, a portion of which was folded in upon itself, and its margins brought together by means of four fine silk sutures.

The left tube and ovary were examined and found healthy, except that the tube was œdematous and distended with serum at its outer extremity owing to the occlusion of the abdominal ostium by adhesion of the fimbriæ. The distended portion was punctured and the fluid evacuated.

The clot removed weighed 9 oz.; no traces of an ovum were discovered. The length of the portion of tube removed was 4½ inches; its width 1½ inch. The inner surface of the tube was discolored and uneven from the presence of adherent clot. The main dilatation of the tube commenced about one inch and a half from the divided uterine end. The projecting open-mouthed sac, formed by an invagination of the wall of the tube, had an estimated diameter of an inch. A portion of the invaginated tube-wall was set aside to harden for microscopical examination.

The patient made a rapid and uneventful recovery, and left the hospital well on October 19th.

Case 10.—R. M—, æt. 22, a machinist, admitted November 2nd, 1892. Married June, 1886; three children, last one December 25th, 1889; no miscarriages. Last menstrual period began August 28th, 1892. Present illness dates from September 25th, when, the menstrual period being a week overdue, she had a sudden and profuse hæmorrhage whilst at her work. The hæmorrhage was accompanied with faintness, nausea, and bearing-down pain of so severe a character that she could not rise from her chair. After the worst pain was over she lay down for half an hour, and then resumed her work, though still in great discomfort from a feeling of internal soreness and burning. These sensations have continued ever since, along with slight hæmorrhage. There have been three exacerbations since the first attack, each marked by pain, vomiting, and increased loss of blood. The first of these was about a fortnight after the onset, the second was about ten days later, and the third and most severe occurred on the day before her admission. Some clots were passed on the 25th September, and again on the 1st November, but nothing like a solid substance or membrane has been noticed in the discharge.

When admitted, patient was a pale, but otherwise healthy

young woman, well nourished, and in excellent spirits. Her appetite was good. Urine normal.

Nothing abnormal was detected on examination of the abdomen.

A vaginal examination was made under anæsthesia. The cervix uteri was normal; canal closed. Posterior and right lateral fornices slightly depressed by a mass situated in the posterior part of the pelvis, and extending across it, being most marked on the right side. The mass was about the size of two adult fists, and was closely connected with the cervix. It was moveable to a slight extent between the hands; but neither it nor the uterus could be moved independently the one of the other. Uterus anteflexed; canal 2½ inches long. *Per rectum*, the mass was found not to project into the bowel to any considerable extent.

The upper limit of the mass was 4 inches above the pubes, and 2½ inches below the umbilicus.

On November 8th, after some increase in the amount of discharge and pain, of half an hour's duration, a clot was passed. There was no rise of temperature or vomiting.

On November 23rd the general health and spirits remained good; the discharge was slight. The upper limit of the mass reached to half an inch below umbilicus; the vaginal roof was not now appreciably depressed. The mass was nearer the abdominal wall on the right side than on the left. The patient has been in bed and on full diet since admission. Her highest temperature has been 99·4°.

On November 28th the abdomen was opened. A smooth-walled swelling lay behind the uterus and right broad ligament, adherent everywhere except on its anterior aspect. During its separation, a quantity of dark fluid blood escaped, and about five fluid ounces of soft dark clot. The right ovary and tube were connected with, and formed part of the swelling. The ovary was large, œdematous, and adherent, but otherwise healthy. The uterine end of the tube for a distance of an inch and a half was normal. The outer portion, 2½ inches in length, was dilated and filled with blood. Just within the open abdominal osteum, was a small, firm, oval blood-clot, measuring 1 inch by ⅝ inch. No membrane or other organised structure was discovered either amongst the

fluid blood or the clot. Attached to the distal end of the dilated tube was a torn, irregular flap of thick tissue, apparently part of the wall of the blood-containing cavity. The left uterine appendages were healthy.

The patient made an uninterrupted recovery, the highest recorded temperature during her convalescence being 100·2°. She was discharged well on December 17th. No abnormal swelling could be felt in the pelvis; the pouch of Douglas was apparently obliterated by adhesions.

She presented herself on February 24th, 1893, three months after the operation, looking and feeling perfectly well. She had menstruated twice normally.

GROUP III.—*Cases in which the Evidence is inconclusive.*

CASE 1.—(abstract).[1]—N. B—, æt. 33, admitted June 8th, 1889. Married at 16. Four children, one miscarriage; last child born nine years ago. In the third week of the last puerperium got her feet wet and had an attack of severe abdominal pain, for which she was poulticed and kept in bed for a fortnight. Has never felt strong since. Menstruation regular up to commencement of present illness. For six weeks previous to admission had continuous uterine hæmorrhage with occasional passing of clots. Five days before admission, and again on the day preceding admission, was suddenly seized with acute abdominal pain, accompanied with rectal and vesical tenesmus, vomiting and alarming faintness. Similar symptoms presented themselves on the eighth day after admission, and again on the sixteenth day. On the day of admission the hæmorrhage, hitherto slight, became profuse, and she passed a "whitish lump" *per vaginam*. The physical signs on admission were those of pelvic hæmatocele. The recurrence of the symptoms of fresh internal hæmorrhage determined me to open the abdomen. Thirty fluid ounces of fluid and clotted blood were found in the peritoneal cavity, surrounding the right Fallopian tube, and shut off from the upper part of the peritoneal cavity by a thick roof composed chiefly of firm clot and omentum. The right Fallopian tube

[1] The details of this case were published in the nineteenth volume of these 'Reports,' p. 182.

was evenly distended by firm blood-clot. Its uterine end was normal. Its fimbriated end was widely open, and dark clots protruded from it. The diameter of the abdominal ostium was an inch; the fimbriæ were folded back upon the outer surface of the tube, which was surrounded by a thick coat of firm, adherent blood-clot. The walls of the tube were healthy. The portion of tube removed measured 3 inches in length and 2 in width.

The contents of the tube were carefully examined by Mr. Shattock. No products of conception were discovered, the contents consisting solely of firm, laminated blood-clot. The inner surface of the tube was normal, except that its rugæ had become obliterated from distension. The blood removed from the pelvic cavity was also carefully examined for traces of an ovum, but with entirely negative result.

The patient made a good recovery, though not without some pelvic suppuration, and the formation of a sinus, which ultimately closed six months afterwards, on the escape of a silk ligature.

The specimen was exhibited at the Obstetrical Society, and is described in the 'Transactions,' vol. xxxi, for 1889, p. 226. It is now in the museum of St. Thomas's Hospital (see Plate III, fig. 2).

Remarks.—There are several facts in favour of supposing this case to be one of tubal abortion, *e. g.* (1) the long interval that had elapsed since the last pregnancy; (2) the history of an attack of pelvic inflammation after the last confinement, and (3) the absence of inflammatory change in the walls of the distended tube or other morbid condition likely to be a source of hæmorrhage. There is, however, no history of missed menstruation. This may, of course, be explained by supposing that the hæmorrhage occurred very early, for example, in the fourth week, a view that is rendered the more probable from the widely open abdominal ostium of the tube, a condition seldom found after the sixth week, and probably never after the eighth.

On the whole, however, the clinical evidence in favour of tubal gestation is scarcely strong enough, in the absence of pathological confirmation, to justify the inclusion of the case in Group II.

Case 2 (abstract).[1]—C. P—, æt. 31, a healthy-looking charwoman, admitted January 8th, 1891. Married at twenty-four; one child a year afterwards. Two months after confinement suddenly seized with pain in the lower part of the abdomen, chiefly on the left side. The pain was very severe. From that time patient has been liable to attacks of pain of a similar character, accompanied with headache, nausea, and faintness. During the last month the attacks have been more severe and frequent, obliging her to be for the most part in bed, and completely incapacitating her for work. No menorrhagia or vaginal discharge.

On admission, a large mass directly continuous with the left cornu of the uterus and filling the left posterior quarter of the pelvis. The mass was hard and nodulated posteriorly, and terminated behind the uterus in Douglas's pouch. Some ill-defined thickening on the right side. No depression of vaginal roof. Uterus normal in length, anteflexed, and displaced to the right. The diagnosis was left pyosalpinx.

Abdominal section performed January 22nd, 1891, showed both tubes to be dilated and universally adherent, their distal ends being firmly matted in the retro-uterine pouch. The inner half of the left tube was normal; the outer half was expanded in the form of a funnel and contained firm, dark blood-clot. From the widely open mouth of the tube, clot was seen protruding into a small hæmatocele in Douglas's pouch, equal in size to a Tangerine orange, and hemmed in on all sides by adhesions. The right tube was dilated and occluded, forming a hydrosalpinx. It measured 2½ inches in length, and 1½ inch in its greatest breadth. Its closed end measured an inch by an inch and a half. Both ovaries were cystic and equal in size to a pigeon's egg. The ovaries and tubes were removed, aud the patient made a good recovery.

No evidence of the remains of an ovum was detected.

Remarks.—It is possible this was a case of early tubal abortion, but the clinical history does not warrant a decided opinion, and no products of conception were discovered

[1] Full notes of the case will be found in my paper "On the Value of Abdominal Section in certain Cases of Pelvic Peritonitis," 'Obstet. Soc. Trans.' for 1892, p. 384.

amongst the clot. Hence, the origin of the hæmorrhage must be regarded as uncertain.

Group IV.—*Cases in which the Evidence points to other Causes than Tubal Gestation.*

Case 1 (abstract).[1]—M. M—, æt. 26, married, a winder in a cotton mill; admitted into St. Mary's Hospital, Manchester, September 25th, 1885, complaining of continuous pain in the lower part of the abdomen, especially on the right side and down the right thigh. The pain had existed for seven years, commencing soon after the birth of her only child, but had been more severe and continuous during the past two months. Recently there had also been persistent hæmorrhage from the uterus.

The woman was thin and anæmic, with a haggard countenance, indicative of suffering.

On bimanual examination of the pelvis the right side was found to be occupied by a firm, oblong swelling, very tender to the touch, pushing the uterus over to the left of the middle line.

Abdominal section was performed on October 7th, 1885. The right ovary was equal in size to a hen's egg and cystic, the contents consisting of dark fluid blood, altered by long retention. Closely connected with the diseased ovary was a thick fusiform swelling, consisting of the Fallopian tube distended with blood, partly fluid and partly clotted, the walls of the tube being much thickened by chronic inflammation, and firmly adherent externally to a coil of small intestine. The left tube was healthy; the left ovary was the subject of early cystic disease and was removed.

The patient made an excellent recovery.

Remarks.—In bringing this case before the Obstetrical Society, I stated it to be "a case of chronic unilateral salpingitis, in the course of which hæmorrhage had occurred,

[1] Fully reported in a paper entitled "Abdominal Section for the Removal of Small Intra-pelvic Tumours," 'Brit. Med. Journ.,' January 30th, 1886. See also "Abdominal Section in certain Cases of Pelvic Peritonitis," 'Trans. Obst. Soc.' for 1892.

distending the tube with blood. Such cases are distinguished from " effusions of blood due to tubal gestation, " not only by the discovery of chorionic villi in the latter, but also by the condition of the walls of the tube, which, in the case of . . tubal gestation, are, as Bland Sutton has pointed out, abnormally thin instead of being abnormally thick. In the one there is simple distension, with, at the most, some turgescence; in the other, there is inflammation as well as distension. The co-existence in cases of inflammatory hæmatosalpinx of blood cysts in the adjacent ovary is by no means infrequent."

The clinical evidence goes to show that the patient had an attack of pelvic inflammation, probably of septic origin, soon after her child was born, seven years previously. As she had no cessation of the menses since their re-establishment, or other symptom of pregnancy, it is reasonable to regard the hæmorrhage, both into the tube and into the ovarian cyst, as mere incidents in the course of a chronic inflammation.

Case 2.—C. M—, æt. 53, a widow, admitted June 19th, 1890. She had borne one child thirty-three years ago, and had not been pregnant since. Her husband died ten years ago. Menstruation ceased at the age of 49. She received a sudden shock owing to the sudden death of her sister in February, 1890, from which time she was observed to be unusually pale, and to be gradually becoming thinner and weaker. The abdomen also began to enlarge.

On admission, there was marked enlargement of the abdomen, which was tense and elastic. The percussion-note was dull over the iliac and hypogastric regions; above the umbilicus it was resonant, and in the middle line and on the left for two or three inches below the umbilicus. An ill-defined mass could be felt in the right iliac region.

An exploratory incision was made on the 26th June, 1890. A quantity of blood-stained ascitic fluid escaped when the peritoneum was opened. A band of adherent peritoneum, containing a large, soft, dark clot, lay immediately beneath the line of incision. On passing the hand within the abdomen a large, soft, solid tumour was felt to be lying across the

pelvis behind the uterus, extending from the right lateral wall to a considerable distance beyond the middle line. It was adherent on all sides. On separating the adhesions the wall of the tumour gave way and a large quantity of soft blood-clot escaped, of which some portions were yellowish-white in colour, some brown, and some purplish-red. The tumour proved to consist of the right Fallopian tube, enormously distended. The ovary of the same side was cystic and equal in size to a hen's egg. The microscope afterwards showed it to be carcinomatous. It was exceedingly difficult to distinguish the various tissues and viscera of the pelvis. The uterus, for example, was only recognised after passing a sound, when the organ was found lying to the front, with extremely thin walls. After separating the adhesions as far as practicable, the thickened right broad ligament was transfixed and the enlarged tube with the adjacent ovary were removed as completely as was practicable; but about half the ovary had to be left.

The patient recovered from the operation, but, three months later, her medical attendant, Dr. Geo. St. John Oldham, informed me that the abdomen was apparently filled by a large mass of recurrent growth.

Remarks.—Whatever may have been the origin of the hæmatosalpinx in this case, it is absolutely certain that it was not tubal gestation. All that one can say positively is that it was associated with carcinoma of the adjacent ovary and with general pelvic inflammation, in a woman of fifty-three, who had ceased to menstruate for four years. It did not seem in this case, as it did in the last, to be connected with a definite lesion of the tube itself.

The next is an example of a hæmatosalpinx of the opposite tube in a case of ruptured tubal gestation. The character of the effused blood excludes the idea of there having been gestation in both tubes. The details of the case having been already published (see vol. xx of these Reports), it will be only necessary to give a very brief abstract here.

Case 3.—A. J—, æt. 37, married, was admitted June 25th, 1890, complaining of acute abdominal pain with distension and intense tenderness. Her only child was born sixteen

years previously and she had not been pregnant since. Her illness commenced on the 9th of June, when, after having missed two menstrual periods, she had a slight blood-stained discharge, followed in two days by severe abdominal pain, which continued, and became gradually worse up to her admission. I came to the conclusion, on learning the history, that her symptoms were due to ruptured tubal gestation. On opening the abdomen, which I did on June 27th, a quantity of thin, dark blood and a number of small clots were found in the peritoneal cavity. There was no evidence of general peritonitis. There was a ruptured tubal gestation on the left side. The placenta was partially protruding through the rent, and the fœtus, $2\frac{5}{16}$ inches long, attached by the umbilical cord to the placenta, was lying in the abdominal cavity. All these parts gave off an offensive smell of commencing decomposition.

Extending behind the uterus and right broad ligament was a large, tense, oblong tumour, which was recognised as the right Fallopian tube, occluded, distended with fluid, and attached to the parts around by recent and easily separated adhesions. The tube was enucleated without difficulty and removed along with the normal right ovary. The contents of the distended tube proved to be a dark brown viscid fluid, consisting of mucus and altered blood.

The patient after a protracted convalescence, due to her septic condition at the time of operation, eventually made an excellent recovery.

General Summary.—The seventeen cases above recorded embrace all the instances of effusion of blood into the Fallopian tube that have come under my own observation. The series is certainly not a very large one, but it is the largest, so far as I am aware, that has yet been recorded as the result of a single experience, and inasmuch as every case was verified by actual inspection of the parts *in situ* during life, as well as by careful examination of them after removal (by operation), it has the special value that attaches to any series of complete records. I use the words "complete" of course, not in the sense of "faultless," but as implying that the clinical histories are in each case followed by an account of the actual appearances presented by the parts when exposed to view, and care-

fully dissected, just as a medical case is said to be complete when the full clinical history is supplemented by a detailed account of the autopsy.

In my opening remarks I mentioned two points, with regard to which it seemed to me specially important that evidence should be elicited, viz. (1) the proportion of cases in which effusions of blood in the Fallopian tube are the result of tubal gestation, and (2) the proportion of cases in which a diagnosis of tubal gestation based on the clinical history is confirmed by the discovery, amongst the effused blood, of distinct remains of an ovum.

In reference to the first of these objects of inquiry, the cases have been divided into the four following groups:— Group I, consisting of cases in which the evidence of tubal gestation is complete, a distinct ovum having been found amongst the effused blood. The cases in this group are two in number.[1] Group II, consisting of cases in which the clinical history points unmistakeably to tubal gestation, but in which no traces of an ovum were detected. In this group there are no fewer than ten cases. Group III, consisting of cases in which the evidence is inconclusive, or, in other words, of cases in which an important link in the chain of clinical evidence of tubal gestation was missing, and in which examination of the tube and its contents gave no clue to the cause of the effusion, either in the form of the remains of an ovum or of any pathological condition of the tube sufficient to account for the hæmorrhage. Two cases only come within this category. And lastly, group IV, consisting of cases in which the evidence points to other causes than tubal gestation. Under this heading are placed three cases.

It thus appears that tubal gestation was absolutely proved to be the cause of the effusion in two cases, was almost certainly the cause in other ten of the cases, and was very possibly the cause in two more, while in only three cases did the evidence distinctly point to other sources of hæmorrhage. Of the cases in the last-named group, the hæmorrhage in the first case was apparently a mere incidental complication in the

[1] If the three cases of early tubal gestation, with rupture into the peritoneal cavity, had come sufficiently within the scope of the paper to be included, the number of cases in Group I would have been increased to five.

course of a chronic salpingitis; in the second case, that of a woman past the menopause, the effusion in the tube co-existed with cancer of the adjacent ovary; while in the third case, the effusion was clearly the result of hæmorrhage into a tube already distended by mucus, in which occlusion of the abdominal ostium had occurred as a secondary result of the pelvic peritonitis set up by a ruptured tubal gestation on the opposite side.

With regard to the second object of enquiry, the result is somewhat unexpected and disappointing. In no fewer than ten out of the seventeen cases, strong presumptive evidence of tubal gestation was afforded by the clinical history, and yet the most careful search by a pathological expert failed to detect any trace of the remains of an ovum. The soft clots were carefully washed and examined one by one; the firmer coagula were hardened and then cut into thin sections for microscopical examination. I know of no surer means than this of detecting the remains of an ovum if they be there.

A consideration of these facts should convince us that a case may be one of tubal gestation, and may even occasionally be legitimately described as such, although no products of conception be discovered. I have always hitherto maintained the contrary, but I can do so no longer. There is practically no doubt that all the cases in Group II were examples of tubal mole or tubal abortion, yet in not one of the ten were the remains of an ovum found.

Mr. Bland Sutton is strongly of opinion that the use of the term hæmatosalpinx should be restricted to cases in which the effusion is due to other causes than tubal gestation. My readers may have noticed that, in this paper, I have studiously avoided the use of the word, either in the restricted sense advocated by Mr. Sutton or in the more general and comprehensive sense as ordinarily employed. I desired to enter upon this enquiry without bias. Now that it is finished, however, I am free to state that, in my opinion, the time has not yet arrived for drawing a hard and fast line between blood effusions into the tube caused by tubal pregnancy, and such effusions due to other causes. Until we have arrived at greater certainty, and are in a position definitely to assign every case to its proper category, it seems to me that it will

be convenient and desirable to retain the term hæmatosalpinx as applicable to all effusions of blood into the tube, from whatever source the blood may have arisen. By attempting to be more definite than the present state of our knowledge permits us to be, instead of accelerating progress we shall be in danger of retarding it.

I do not propose to discuss here the desirability of operating upon these cases. My own opinion on this question is now pretty well known. I may, however, call attention to the fact that in each of the seventeen cases, of which the records are here given, operation resulted in the patient's recovery.

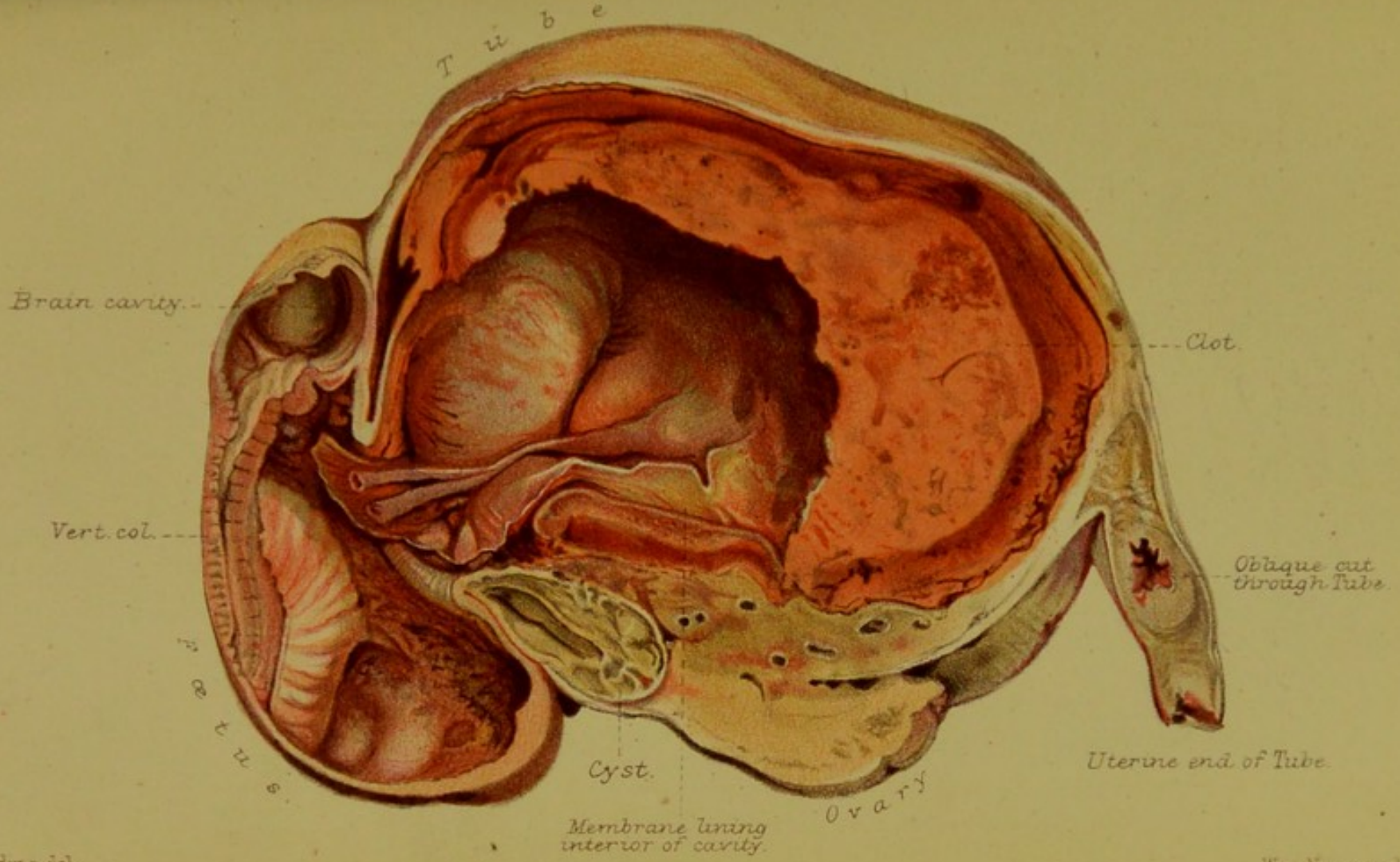
The cases here narrated possess many points of interest, and suggest many lines of reflection to which I have not the time or space to allude, and which must be reserved for another occasion. There is, however, one point to which I should like to refer before concluding this paper (which has already far exceeded its intended limits), namely, the light these cases throw on the difficult subject of the source of the bleeding in pelvic hæmatocele. It will have been observed that in all the cases in Group II, with the exception of Cases 7 and 9, and in both the cases in Group III, that is, in ten out of the seventeen cases, there was an intra-peritoneal hæmatocele, due to the escape of blood from the open fimbriated end of the distended tube. If I am right in regarding these cases as having originated in tubal pregnancy, this out-pouring of blood from the yet unclosed abdominal ostium indicates that either tubal abortion was impending, or had already in whole or in part occurred, and suggests that in many unexplained cases of pelvic hæmatocele the hæmorrhage may have had a similar source.

DESCRIPTION OF PLATE I,

Illustrating Dr. Cullingworth's paper on Effusions of Blood into the Fallopian Tube.

The drawing shows the appearances presented by the distended right Fallopian tube after being hardened in spirit and laid open by a longitudinal section along the middle line. The main part of the tube is occupied by a mass of firm laminated blood-clot. At that end of the distended portion of the tube which lies to the left hangs a tail-like projection, a little over an inch in length. This is the undilated uterine end of the tube. At the opposite end, that, namely, to the right of the drawing, is a pouch formed in the wall of the tube, communicating with the main cavity by a circular, smooth-edged aperture three fifths of an inch in diameter. Against the outer wall of this pouch lies a fœtus, compressed by the mass of blood-clot. The cranial cavity and vertebral column, divided longitudinally, are well seen. The ribs have been displaced downwards *en masse*. The denuded bones of the arm and leg of one side projected through the wall of the pouch, and were hanging outside. The amnion and torn umbilical cord are seen in the body of the tube, having been left behind by the fœtus when it escaped into the smaller compartment beyond. The parts are represented of natural size.

Case 2, Group I.



Unruptured tubal gestation, with apoplexy of ovum.

DESCRIPTION OF PLATE II,

Illustrating Dr. Cullingworth's paper on Effusions of Blood into the Fallopian Tube.

Fig. 1.—Fallopian tube distended by blood-clot. The wall of the tube is extremely thin in places, the colour of the contained clot being easily seen through it. The fimbriated end is open, and from it clot was hanging out, there being a small quantity of dark fluid blood and some old clot in the peritoneal cavity. Along the under surface of the tube is seen the divided edge of the thickened meso-salpinx.

The parts are represented of natural size.

Fig. 2.—The interior of the same tube as seen on longitudinal section. The clot is solid and homogeneous, with a well-defined firmer layer where the clot is in contact with the tube wall. In the interior of the clot is seen a long narrow chink, lined by membrane, probably the compressed and empty amniotic cavity. No chorionic villi or other distinctive products of conception, however, could be detected under the microscope in this situation.

From Case 4, Group II.

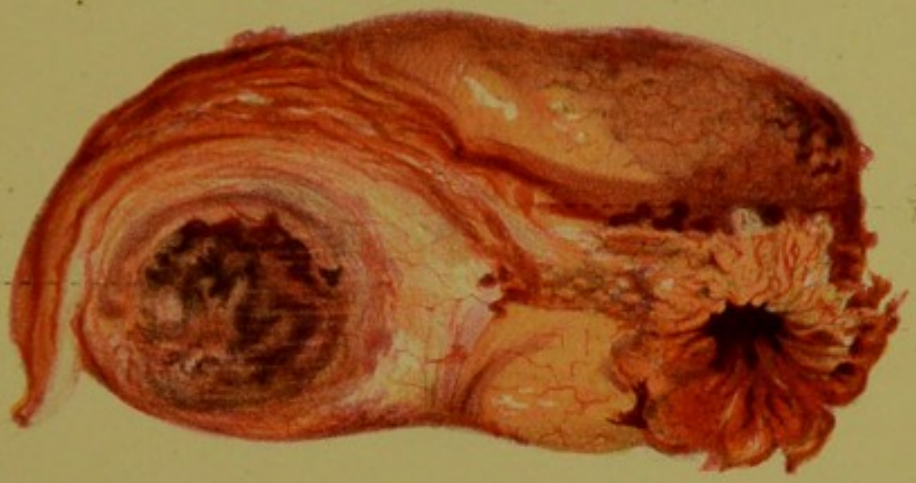


Fig 1. Exterior.

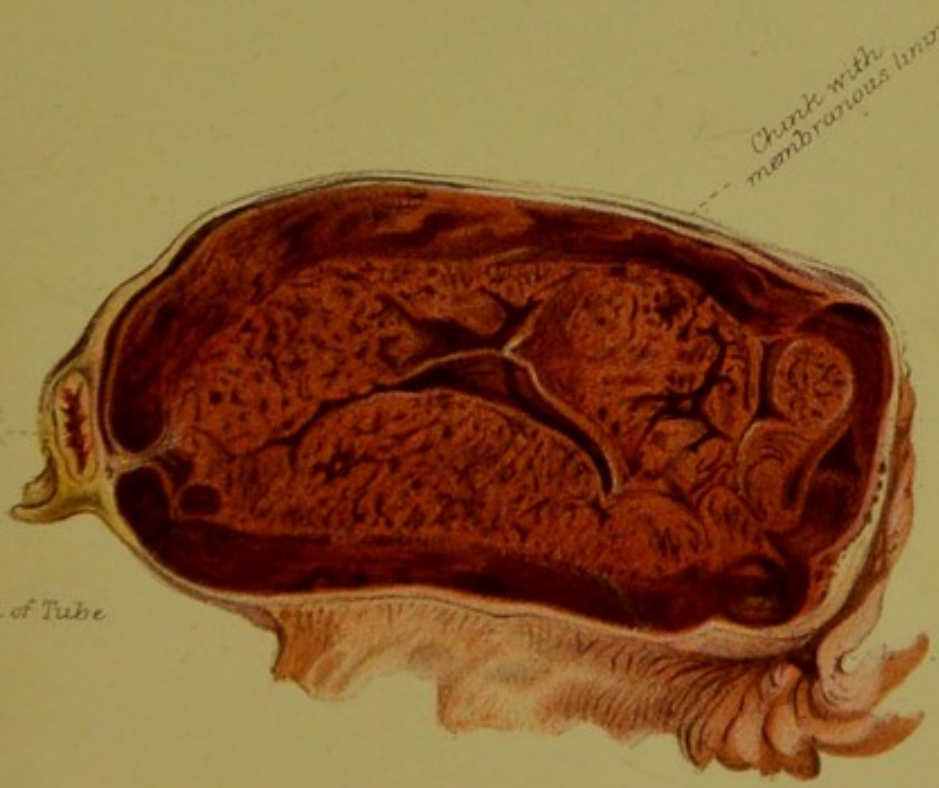


Fig 2. Interior.

Fallopian tube distended with blood clot.

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DESCRIPTION OF PLATE III,

Illustrating Dr. Cullingworth's paper on Effusions of Blood into the Fallopian Tube.

Fig. 1.—Interior of Fallopian tube distended with blood-clot. The clot is firm and homogeneous. The fimbriated end (only partially seen in the drawing) is sufficiently open to admit a goose-quill. Blood had escaped through it into the peritoneal cavity, where there was a small handful of soft dark clot encysted amongst adhesions. The clinical history pointed to tubal pregnancy, but no organised tissues were detected amongst the clot.

From Case 5, Group II. Natural size.

Fig. 2.—Fallopian tube distended with firm clot. The abdominal ostium is widely dilated and clot is hanging from it. The fimbriæ were folded back upon the exterior of the tube; in the drawing they appear unfolded as seen when the specimen was placed in water. The tube was surrounded by a quantity of fluid and clotted blood, measuring thirty fluid ounces, and forming an intra-peritoneal hæmatocele. A firm coat of adherent blood-clot had been deposited on the entire surface of the tube. A portion of this has been removed to show the smooth peritoneal surface beneath. The clinical history was inconclusive as to the existence of tubal pregnancy, and no traces of an ovum were discovered.

From Case 1, Group III. Natural size.

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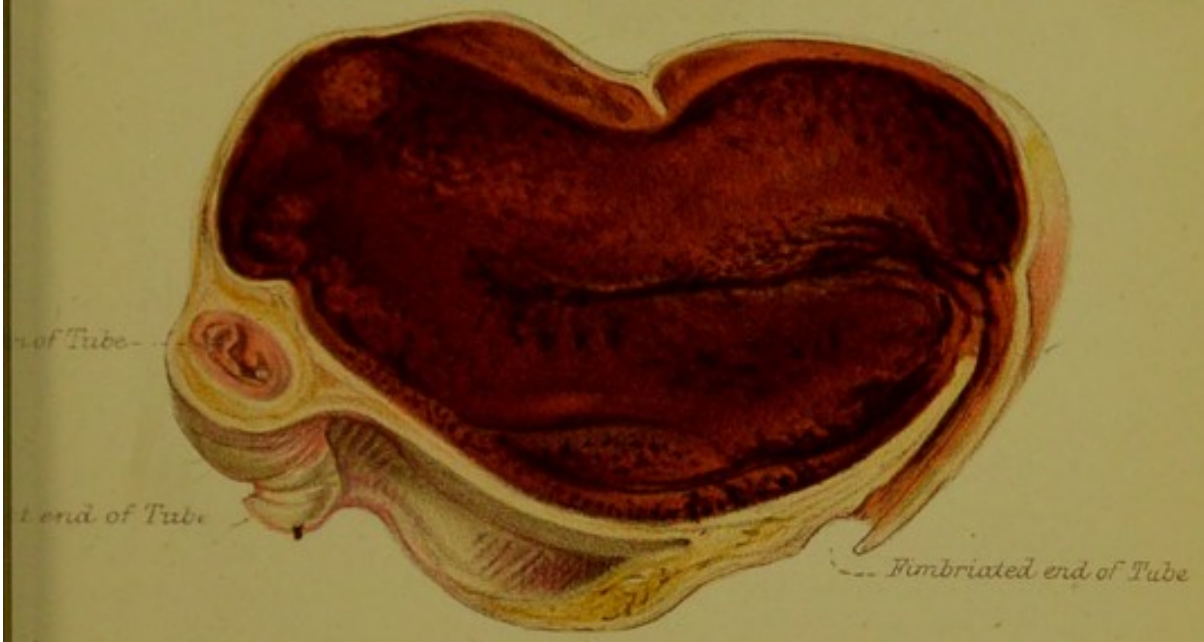

Fig.1. Fallopian tube distended with blood clot.

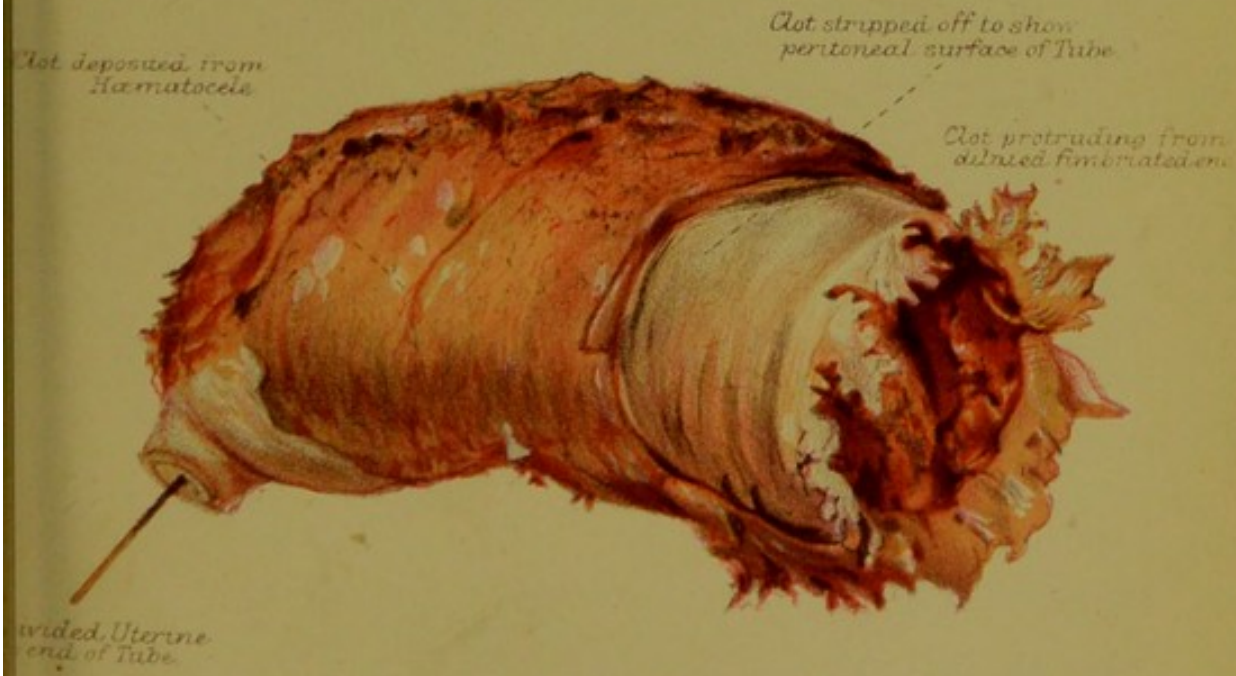

Fig.2. Fallopian tube distended with blood-clot

OTHER PAPERS BY THE SAME AUTHOR.

I.—OBSTETRICAL AND GYNÆCOLOGICAL.

[I here adopt, by way of experiment, a French custom which I have often thought might with advantage be naturalized in this country, that, namely, of occasionally printing, for private distribution (as, for example, at the end of a reprint), a list of the author's other papers, with the place and date of their publication. Such lists are often convenient to other workers, and are not altogether without interest to a writer's personal friends.]

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