Pelvic Haematocele,
mainly concerning its etiology.

by

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Thereby certify that the accompanying thesis
has been composed and written by myself.

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In Pelvic Haematocoele the onset is often sudden. The nearest medical man is called upon; therefore many of these cases come, at all events in the first instance, under the care of the general practitioner.

Having diagnosed the presence of an effusion of blood into the pelvis, by no means an easy matter in many instances, the much more difficult task yet remains of determining the probable cause of this effusion.

To help one in the attempt it is necessary to know the particulars of previous cases, the causes ascribed to them, and the bearing of various pathological condition in the pelvis and elsewhere on these haemorrhages.

This then has been my aim in the following pages, and I have tried to avoid as far as possible too much conventional narrowerness, taking rather the broader (though perhaps shallower) view of the general practitioners.
Definition of the term.
Strictly speaking, Haematocèle means blood effused or collected in such a way as to form a tumour (Kyg, a tumour) but an effusion of blood into the pelvis even when it does not form a distinct tumour is often called a pelvic haematocèle, and it is in this sense that I intend to use the term. I cannot do better than make use of the words employed by Hart & Barbour (Trans. of Gyne. 1870 p.178) and say that pelvic haematocèle denotes "an effusion of blood into the pelvic peritoneum or connective tissue."

At once this suggests two natural subdivisions into "Intra-peritoneal pelvic haematocèle" and "Extra-peritoneal pelvic haematocèle." To the latter variety other names have been applied such as Haematoma Thrombus, but the tendency at the present day is to call these effusion pelvic haematocèles, and to add the adjective extra-peritoneal and
intra-peritoneal in the cases to which they respectively apply, and in which the diagnosis can be made. This diagnosis of extra- or intra-peritoneal is in many cases extremely difficult, even on examination post mortem, and to render the confusion still worse, mixed cases occur, in which there is effusion of blood both into the cellular tissue and into the peritoneal cavity. These as a rule have been originally entirely extra-peritoneal, and have become also intra-peritoneal by the rupture of the peritoneum.

The definition given excludes those cases, where the extravasation of blood takes place into the interior of a


I am satisfied that in the post mortem room there is almost insuperable difficulty in defining the serous layer of the peritoneum and differentiating it from the products of inflammatory action. "Edw. Malins M.D. Letter to Lancet 1866 p. 2506."
cyst or new growth of pelvic organ
If we permit an extravasation of blood into the pelvis, even when it does not form a sensible tumour, to be included under the term pelvic haematocoele, then the limitation of the term, as regards the origin of the blood, seems unnecessary.

After perusing the works of some authors the impression left in the mind is that the word "pelvic" refers rather to the origin than the situation of the effusion. It is only when we regard pelvic haematocoele as a tumour and then only when it is of the intra-peritoneal variety that the source of the blood must necessarily be pelvic. To produce such a tumour haematocoele must take place into a sac formed by inflammatory adhesions from

"See Wells case of aneurism of aorta allowing haematocoele forming considerable tumour in hollow of sacrum. p. 121."
previous peritonitis, and therefore the situation of the bleeding point must be in the pelvis. Simple clotting of blood in the pouch of Douglas will not do this. (Robertson's case. Trans. Path. Soc. Manchester Vol I p. 61.)

I am not inclined to limit the term pelvic haematoccele to effusions having a pelvis origin. We have always to keep our mind open to other possibilities. We know that the rupture of an ovarian has caused effusion of blood in this region. The patient remaining long.

"It is remotely possible that occasionally in the human subject a fold of peritoneum may form an ovarian pouch similar to that found in guinea pigs for example, and that haemorrhage into this pouch may distend it and form a tumour. If so, I know of no case in which it has been demonstrated." (Spec. No. 4040. Univ. Coll. Hosp. Path. Inst. distention ovarian pouch with fluid, from guinea pig.)
enough to allow the blood to congeulate (Leuc's case p. 121 this thesis) and we also know that death has followed the tapping of a bloodswelling in the hollow of the sacrum; the origin of the blood in this case being also an aneurism. (Wells, Drug and Surgical Treatment of Abd. Tumours 1885 p. 35.) An abdominal aneurism is difficult to diagnose. It may exist without its presence being suspected, and even if suspected and looked for, it may not be made out. (Barnet Ed. Med. Jour. Vol viii, 1862 p. 150.)

However the class of pelvic haematocele arising from bleeding in the pelvis is no doubt much the more frequent & by far the more important clinically, and it is to this class I intend to devote the greater portion of this paper. To parody some that the words used by Hart & Barbour (Spelt, p. 178) we might say that just as haemoptysis is not a disease but usually a
symptoms of someiting condition as pelvic haematocele is not a disease but a symptom of some previously existing pathological condition usually of the pelvic organs.

I must just mention that the suggestion has been made that the term pelvic haematocele should be employed to signify blood tumours of a more restricted origin than 'pelvic'. In the American System of Gyne. and Obst. Vol. I p. 135, it is said 'most authors exclude pelvic haemorrhage caused by rupture of extrauterine vessels, of aneurismal tumours, ovarian cysts, or blood effusions due to accident or injury'. This statement certainly does not apply to the majority of British nor so far as my reading extends to French authors.

Though, as we have stated, pelvic haematocoele is merely a symptom, and though we should attempt in all cases to ascertain what this symptom indicates, yet oftentimes it, like many other symptoms, requires special treatment, and even comes to outweigh in gravity the original lesion.

We have just said that we should endeavour in every case to ascertain the cause of this symptom called pelvic haematocoele, and we will now proceed to consider the various morbid states, local and general, which have been assigned as causes, and the various pathological conditions which have been found on post-mortem examination, or on operation. We also get valuable hints from cases and specimens which have not got the length of actual legislation, but show as it were an intermediate stage.

Scientifically, we ought to arrange
the causes into 'predisposing' and 'exciting'; but practically this is found to be impossible.

For the purposes of this paper, the following grouping of causes is the most convenient, and at the same time embraces, I think, all those known at present. It does not however altogether prevent overlapping, some cases coming under more than one head, but this it is almost impossible to avoid in the present state of our knowledge.

As far as I can I will obviate this inconvenience by referring each case to its primary morbid state; for example, Barlow's well known case of purpura with abortion and haematocele I place not under the leading "Pregnancy" but under "Abnormal Blood States"
Classification of Causes.

I. Abnormal blood states.

II. Connected with pregnancy.

III. Connected with menstruation.

IV. Diseases of the special female pelvic organs not included under II or III.

V. Diseases of other pelvic and abdominal organs, or blood-vessels.

VI. Diseases of the peritoneum and cellular tissue.

VII. Traumatic apart from menstruation or pregnancy.
Abnormal Blood States

This group of causes may be subdivided into

1. Anemia
2. Purpura, and the haemorrhagic diathesis
3. Typhoid and other febrile diseases
4. Lead poisoning, phosphorus poisoning, etc.
5. Jaundice

Anemia. That anemia and chlorosis should act at all events as predisposing causes would only be what might be expected. That the blood vessels suffer and haemorrhage occurs in these diseases, especially in

Pernicious anemia: "Many patients have epistaxis again and again. In women, sanguineous vaginal discharges frequently occur." - Fagg. vol. ii p. 776.
pernicious anaemia we know, and
the constipation so common in them
would, we should expect have an
injurious effect on the pelvic organs.
It must be a matter of common
observation that constipation induces
a congestion of the pelvic organs
and menorrhagia in some young
unmarried women. Or rather we
should say perhaps that the congestion
is associated with constipation, and
removed by curing the constipation.
Since both may have a common
origin, hepatic or otherwise. The
constipation no doubt bears the same
relation to the congestion and menor-
ragia that it does to haemorrhoids
in young men, but curiously enough
it rarely seems to produce an attack
of piles in a young unmarried woman.
I have never seen a case, though
I have seen several who had intense
vulvar congestion apparently as the
result of constipation. One case in
particular I recall to mind at
present. She presented herself at Soho Hospital for Women as one of Dr. R. T. Smith's outpatients. Her age was about 18 years. The external genital were red and tender, no discharge, hymen intact. No cause for the condition could be discovered except that she had been habitually constipated, and had no movement of her bowels for a week. Dr. Smith said that the constipation was quite sufficient to account for the condition & that he had seen many similar cases. The application of a Jes Sıcacle to the perineum and attention to the emunctories gave rapid relief.

Another case of constipation acting as the exciting cause of pelvic congestion, I may mention. Mrs. H. is under my care at present with superimposition of the uterus and amenorrhea of 5 or 6 years standing. Her husband is absent at sea. She is multiparous, about 30 years old. The sound passes barely 2 ¼ inches. One day she
presented herself after a week's absence and on examining her the sound was in 2½ inches, it was followed by a little blood on withdrawal. Her pectorum was packed with feces. The same thing happened on another occasion but she now takes Cascara and her uterii retains its internal measurement of 2½ inches.

That the obstinate constipation of anemic young girls is associated with amenorrhea is probably due to the undeveloped state of their uterii, or to the fact that the pelvic congestion sometimes finds relief in a somewhat copious leucorrhoea.

A few weeks ago I saw a girl aged 15 years. Her breasts were well developed, she was very anemic, constipated, and had a profuse watery leucorrhoeal discharge. She had never menstruated.

"Leucorrhoea...is not at all rare in young unmarried ladies." Fordyce Barker, Trans. Amer. Gyn. Soc. Vol VII p. 139.
No history of thread-worms; nor any cause for the leucorrhoea that I could discover except the constitution.

Yet in spite of these facts and of the occurrence of haemorrhage elsewhere in pernicious anaemia, I find in the literature of haematocele very few cases assigned to anaemia as a cause, and these few even are doubtful. In Bernay and Conard's classical work (Alf. Meador's Trans. 1866 p. 221) is an account of a case of pelvic haematocele in an anaemic patient who had profuse leucorrhoea with scanty menstruation followed by menorrhagia which gave great relief for a time. This then may have been a case of anaemia in which congestion of the pelvis occurred. The haematocele in this case discharged by the bowel and the patient recovered. Stein in his book on Diseases of Women (1889. p. 603) tells of a chlorotic patient who slipped and fell on the side walk when getting into her
Carriage. She developed an intra-peritoneal haematocele.

In Bell's 'Diseases of Women' (1853) is a case quoted from the practice of Felton. She was aged 36 years, pale and thin but healthy. Haematocele followed sudden stoppage of menstruation on the 4th day. The information given about this case is scanty, and it is very questionable whether it ought to come under this heading at all.

The direct influence of anaemia on the production of haematocele there is more than doubtful, and may practically be left out of account in seeking for the cause of any particular case. But there is a way in which it may possibly act indirectly. The peritoneum in weak anaemic subjects seems more prone to take an inflammatory action as indeed is indicated by those cases of anaemia in which the injection of defibrinated blood (human) into
The peritoneal cavity of avaricious human subjects caused death. (Moore, Landerer, ete quoted by Dr. Hunter Jour. Anat. & Phys. 1866, p. 469)

Therefore in some subjects an estimation of blood which would be rapidly absorbed by a healthy peritoneum or remain clotted until free (see subsequent cases), may set up peritonitis, and become infected.

**Pletora** is given as a cause by some authors but Pletora is not accepted as a disease by modern physicians, and we may dismiss it in the words of Fawcett (Vol II p. 747, 1888) "of plethora we have no knowledge. What used to be called plethora was only local congestion."
Purpura and the haemorrhagic diathesis are causes whose action is much less uncertain than the preceding, and the results much more serious. The haemorrhage does not seem to arise from the peritoneal surface of the peritoneum. extravasation of considerable size may be observed with it without any blood being found in the peritoneal cavity. In almost all the cases the evidence points to the origin of the blood from the mucous membrane of the uterus and partly also perhaps from that of the tunics.

(1) Netley Hospital, Catalogue of Insects 1833. Blood effusions into peritoneum in the form of elevated coagula of considerable and variable size. There were numerous ecchymosed spots on the surface of the membrane which is much thinned. Nearly the whole of the peritoneum presented similar appearance. Despite of fluid in abdominal cavity but no blood.
The best known case of this kind is that of Dr Barlow, described in the London and Edinb. Monthly Journal 1841 p. 877 and frequently referred to by other authors (Berney & Coole, p. 209, Barnes Diseases of Women 1873 p. 603, etc.)

It was a case of abortion at the 6th month in a purpuraic patient. At the necropsy purpuraic spots were found on the skin, the mucous membrane of the stomach, intestines and some on the peritoneum and pleura, but the blood forming the hæmatoccele, in the opinion of the gentlemen present at the post-mortem, came from the interior of the uterus, and blood was found escaping from both Fallopian tubes into the abdominal cavity.

An interesting case of an un-controllable tendency to haemorrhage is described by W. S. A. Griffiths M.B. in the Trans. Obst. Soc. Lond. (1887, Vol. XXIX p. 397) There were no purpuraic spots nor any history of hæmophilia, but
The patient was single, multiparous, aged 18 years, died in St. Bartholomew's Hosp. from epistaxis and uterine haemorrhage. Post-mortem, it was found that the uterus contained a small triangular clot which extended along both Fallopian tubes and projected a couple of inches from the fimbiated extremity of one of them. Source of the haemorrhage could not be detected by the microscope. The mucous membrane of the Fallopian tube and its epithelium were intact, while the mucous membrane of the uterus showed only such a denudation of epithelium as might have resulted 24 hours after death in hot weather. This is one of the cases which show an early stage in the process of tubal evacuation. There was not actually a haematocoele, but the blood projected from the Fallopian tubes.

(1) For drawing and description of uterus and appendages from this case see next page.
St. Bartholomew's Hospital Pathological Museum, No. 2934a. (F. Griffith's case.)

Uterus with appendages. Uterine cavity contains blood clot which extends along the Fallopian tubes and on the right side projects beyond the fimbrated extremity. Projections of clot due to the action of the spirit. Right ovary also contains large blood clot.

No. 2934B, ditto, present similar character; a triangular clot in cavity of uterus which extends into both tubes. Patient, aged 20, virgin, catamenia at 14 years, regular till 6 months before death when stopped. 11 days before death flooding began and continued till the day before death. It instead a clear serous discharge appeared smelling badly. No history of haemophilia.
Notes were read before the Cambridge Med. Soc. Jan 8th 1886, by Dr. Bradbury of a case of haematocele in a haemorrhagic subject. She passed blood by the bowel and recovered.

Symptomatic and other febrile diseases, example of haematocele occurring during the progress of febrile diseases are not very rare. The oft-quoted case of Scangoni in which the patient's menstruation came on during an attack of measles, haematocele followed and death occurred is a good example. On post-mortem examination the left Fallopian tube was found to be distended to the size of the index finger, not ruptured and containing 34 of blood partly coagulated. Through its abdominal orifice 3 x 1/1 of blood had escaped into the pelvis. (Barnes T. G. 1880, p683) During Vanola, haematocele occurred in a case related by Robert Barnes.
(Clin. History of Diseases of Woman, 1873. p. 604) She was menstruating when seized. Recovery took place.

Most of these cases have been associated with an excessive discharge of blood from the uterus so that some of them at all events may be due to retrogression from it, some of the blood possibly coming from the mucous membrane of the tubes.

The description of the post-mortem appearances in two cases one of Variola (by Hélie), and one of Scarlatina (by Labroullienne), in which were found large clots in the uterus, the Fallopian tubes also being distended with blood but no blood having found its way into the peritoneal cavity, seems to support this view, but against it we know that haematoocele has formed in a case of Variola unaccompanied by any external discharge 15 days after the period (Labroullienne quoted by Bernay & Goupil p. 208 J. cit.).
and in Phillips' case of Rheumatism with Haematocele (to be related presently) he was able to diagnose the blood as being in the left broad ligament. It could not therefore be due to the regurgitation of blood through the unruptured tubes, but in these cases was probably caused by the giving way of an engorged vein.

An account of the case of Rheumatism referred to is given in the Trans. of the Obst. Soc. of London (1869, vol. xxix. p. 384.). The patient was a married woman. She had had 3 children. She was attacked with eclampsia, rheumatism (with an aortic systolic murmur) during menstruation. Menorrhagia ensued and lasted a month. A large Haematocele gradually formed in the left broad ligament, pushing the uterus up to the right and producing a considerable abdominal swelling. Febrile diseases also may affect
the menstrual discharge by offering an obstruction to it, and at a time remote from the actual pelvic attack, may lead to the formation of a Haematocele. This they do by causing sloughing and consequent atresia, and this cause will be further considered with the other forms of atresia.

Lead and Phosphorus poisoning
Arthur W. Edis mentions lead poisoning as a cause of Haematocele. (Diseases of Women, 1872, p. 338.) It is also alluded to as one of the doubtful causes in the "Reference Handbook of the Med. Sciences," 1886.

As regards phosphorus, Schroeder (Tiemann's Cyclopedia of Medicine, Vol. 7, p. 475) says, "In phosphorus poisoning there is a fatty degeneration of the vessel walls. Haemorrhage may occur in the tissue of the ovary, and a rupture take place and the blood escape into the peritoneal cavity.
Jaundice. A case of acute jaundice and abortion at the 5th month is related by Berruy and Courjil. On post-mortem examination the uterus and Fallopian tubes were found full of blood. (op. cit. p. 204).

In the museum of Guy's Hospital no 2228(40) is a specimen letter from a patient. She had jaundice and died suddenly. Her age was 28 years, 6 she was married. The specimen shows a cyst which appears to involve the right ovary and Fallopian tube. Opposite ovary also appears to form a considerable cyst. The peritoneal cavity contained a large quantity of blood recently extravasated. Cyst was also filled with genuine blood and distinctly ruptured.

Referring to the "Abnormal Blood state" Bandl names purpura, i.e. small grains, oedema, and variola, as the diseases in which pelvic peritoneal effusions are the more likely to occur.

It connected with pregnancy.

In this group the great function of the female reproductive organs plays a leading part, and we find that its importance as a cause of hæmorrhage overshadows all other causes. Moreover, more particularly in those cases where the products of conception are abnormal in their situation. The most convenient subdivision of the cases in which pregnancy plays so important a part will probably be as follows:

Pregnancy

\[
\begin{align*}
(1) & \text{ Ectopic Pregnancy} \\
(2) & \text{Interrupted (aborted)} \\
(3) & \text{Rupture of uterus during (spontaneous or traumatic)} \\
(4) & \text{Other injuries during} \\
\end{align*}
\]
Extrauterine pregnancy. Our ideas as to the frequency of this as a cause of haematocele have changed very much within recent years, and we now know that it is by far and away the most common of all the sources of effusion of blood into the peritoneal cavity, and probably also of effusions into the cellular tissue. The great advance in abdominal surgery and the equally great advance in pathology and pathological methods have produced this result. The careful microscopic examination of apparent blood clots in tubes, etc., have disclosed the presence of chorionic villi in many cases which would probably only a few years ago, have been ascribed to some other cause.

To assert dogmatically however, that every case of intra-peritoneal haematocele in which the origin of the bleeding can be traced to the tube has been one of extrauterine
gestation would perhaps be going too far. But the exceptions are not many, and only serve to prove the rule. As we shall see later on, it does not follow that because we are not able to find the foetus nor any trace of membranes that the case has not been one of extrauterine gestation.

The interesting case reported by Dr. Cullingworth (Trans. Obst. Soc. Lond. Vol xxxi. 1889, p. 257) may possibly be one of the exceptions. It is well known, so that I have no need to go into details, but would merely indicate some of the points of greatest importance in relation to the question of etiology. There can be no doubt that the case was one of uterine haematocele, "a dark soft clot behind the uterus erupted by recent adhesions on the inner surface of the dilated uterine canal (dilated only in its outer 1/2 inch) was a circular opening 5 inch in diameter. On careful dissection this
was shown to be due to rupture of a varicose vein. There was a
second and somewhat similar, but
colder and smaller opening on
another part of the mucous lining
of the tube which on dissection was
found to lead to a small cavity
with blood stained walls. No vessel
could be traced communicating
with this cavity. This possibly
related to a retro-peritoneal
haematocoele the patient had had
3 years previously. Uterus normal
and empty, clot carefully examined
for foetal remains, but results
negative.

We note then that this patient
had twice suffered from pelvic
haematocoeles at an interval of 3
years. The second time the haematocoele
was certainly intra-peritoneal; the
first time it was retro-uterine and
in all probability also intra-peritoneal.
Both of these attacks were apparently
due to haemorrhage from the crime
tube, a fact which would go to prove that one of them at least could not have been due to extrauterine gestation, since, I think, all authorities are agreed that a tubal gestation necessarily destroys the tube. The only way in which a pregnant tube might escape destruction would be that the so-called tubal abortion should take place very early; if this had happened in this case the amount of blood poured out would probably not have been sufficient to produce the haematocoele.

The diagnosis of extrauterine pregnancy is not easy with difficulty. Certainly, if the practitioners is fortunate enough to be called in before rupture,

"Repeated gestation in the same tube is an impossibility, for the pregnancy produces such far-off changes as to render it functionless." Bland Sutton, Diseases of the Ovars, p. 367.
of he gets a history of one or two
months amenorrhoea, perhaps with
morning sickness, etc., and finds on
pelvic examination a rounded somewhat
descending, elastic and tender, mobile swelling
varying from a hen's egg to a billiard
ball in size, to one or other side of
or perhaps rather posterior to an en-
larged uterus" (W. Duncan, Lancet, Mar. 1890, p. 452.) He may feel pretty
sure of the nature of the case.

In most cases, however, it is far
from being such plain thinking. Intra-
uterine pregnancy does not exclude it,
neither does the fact of there having been
a previous tubal pregnancy in the other tube.

(2) Tait, Diseases of Women, Vol III p. 461.
mention 10 cases, one of which occurred in his
The hymen even has been found to be intact in one case in which chronic villi were discovered in the clot. Pain may be quite absent till the period of rupture. Where there is a history of much pelvic pain in such cases I believe we may always obtain evidence of previous pelvic inflammation. In a case like the one I will relate presently where the patient is young and has no history of previous pelvic disease, pain is absent. It is instructive to compare the absence of pain in these cases and in cases of hydro or pyosalpinx, where the distention of the tubes later place slowly, with what occurs when the tubes are suddenly distended by an injection being forced into them. Then the tubal distention produces a feeling of the most

own practice, of recurrence of uterine fixation in the same woman.

W. Museum of St. Mary's Hospital, 1914. 21, and Disease of the Ovaries, Bland Sutton, p. 310.
intense anguish.” (Hanging Fergusson, Ed.

Nausea, sickle in the breasts, amenorrhea
may all be absent; the uterus may not
be enlarged. In fact rupture may be
and often is, the first intimation of
the morbid pregnancy.

A convenient division of rupture
of the foetal sac into “primary” and
secondary” has been made. Primary
rupture signifies the rupture of the
Fallopian tube in which the gestation
is contained (and the weight of
evidence at present points to the
conclusion that all extra-uterine gestations
are primarily tubal). A time arrives
at which the rate of growth of the ovum
exceeds the capacity of the tube for
expansion, consequently rupture takes

(1) St Thomas’ Hosp. Path. Mus. No. 2364. Greatly
dilated Fallopian tube; patient act. 71. Little pain.
(2) St Bartholomew’s Hosp. Path. Mus. 3071 a. Pt. tubal
pregnancy. No marked enlargement of uterus
and lining membrane not hypertrophied.
place. Prior to this, rupture may be caused by violence, or by diseased condition of the tube, or possibly also of the ovum.

As regards the period at which primary rupture takes place, Talbot states that he has never seen a case over the 12 1/2 week (Ectopic Preg. 1888, p. 19). Pecora and Lippold made the observation that "Rupture almost always happens between the 2nd and 4th months" (Op. cit. p. 253). Probably primary rupture when it does occur, that is to say when the ovum is not destroyed by haemorrhage into it (either abortion, or possibly by the injection of morphia in the sac, or other means, always takes place before the 14 1/2 week. Rupture of the cyst may take

"Freund found in one case, hitherto unique, that the rupture of the (pregnant) tube depended on its having undergone myomatous degeneration."
place while the patient is at rest, or a fall, blow, or other trauma may seem to act as the determining cause. It may be complete or incomplete. A rupture of only a single vessel leaving the cyst-perforat has been known to produce such serious hemorrhage as to cause the death of the patient.

The result of this primary rupture is always hemorrhage. According to the situation of the rent in the tube said to be determined by the site of the placenta (Lawson tint. p. 69, Diseases of Woman) this bleeding either takes place either into the peritoneal cavity or external to the peritoneum into the cellular tissue of the broad ligament. The former variety, the intra-peritoneal is the much more

(1) Cyst-perforat. But a single vessel had ruptured, the size of a knitting needle. Result death. The membranes immediately surrounding the foetus were perfectly natural. Amer. Jour. Obst. Vol xvi. p. 87.
serous. The serous lining of the cavity has a retarding effect on the coagulation of the blood similar to that observed by John Hunter in cases of blood effusion into the Tumour Vaginalem Testis. The bleeding is also encouraged by the movement of the intestines. It is this before of case which is often so rapidly fatal and in which unless there exist adhesions, the results of former inflammatory disease is so as to present an obstacle to the flow of blood, the blood comes to lie not alone in the pelvis but also in the general abdominal cavity especially along

(1) Lond. Hosp. Ins. 22 59. Rupture of a pregnant Fallopian tube. From a woman who died very suddenly and was supposed to have been poisoned.

(2) Post mortem exam. Rupt. of right Fal. tube. The effusion of blood into the abdominal cavity was a slow one and was greatly retarded by the numerous bands of
The flanks. Its situation in these cases, where no large a quantity is effused is determined almost entirely by the action of gravity. As Galatin says (Dis. of Women, p. 387) "The great influence in determining the site of blood effused in these cases is gravity. If the patient is quite flat on her back, probably it will be mostly in the flanks." Practically however, in a patient, sitting, or lying on her back in an ordinary bed, the power of Douglas is the most dependant portion of the peritoneal adhesion. [Foester, Am. J. Obstet. Vol. XXII, p. 103].


1. If the blood was in excess it lay at the most dependant part. Hunter, Jur. Anat. and Physiology, vol XXI, p. 267.

In life the peristaltic movement of the intestines must serve to keep the blood in more or less constant motion; but even then it tends if in quantity to fall to the most dependant part of the abdomen, ibid, p. 268.
peritoneal cavity, and, unless obliterated by previous inflammation, or previously occupied, say by a retroflexed uterus bound down by adhesions, will always contain blood.

Sagittal Filial Section of Pelvis (Hart)
Showing pelvis/pertoneum and pouch of Douglas.
Peritoneum in red. Sheer cut by section.

Although intra-peritoneal rupture of a fetal sac is such a serious accident, yet, that even then, the bleeding may stop and the patient recover.
not impossible. In the course of experiments on animals Leopold has been led to believe that the recovery of patients after rupture of a Fallopian tube gestation was much more common than generally supposed. (Am. Jour. Obst. Vol xiv 1881 p.1064. We occasionally meet with cases in which this may have been the course of events. An example possibly may be cited in the case reported by Matthews Duncan (Col. Lect. on Diseases of Women p. 47). The hematomele was retro-uterine. The patient suffered from great collapse for two days. The sac was opened and chorionic structures were discharged with the blood. However the difficulties in the way of arriving at a decision on this point are great. Even if we knew the patient had been the subject of extra-uterine pregnancy, and could diagnose the hematomele as such, yet instead of ordinary rupture, total abortion may have occurred from
Such as doubt many recover (take place), or the peritoneal cavity may have been so bound down by adhesion that the course of the case comes to resemble more one of extra-peritoneal haemorrhage.

When the blood is effused into the cellular tissue of the broad ligament ("extra-peritoneal") the prognosis is far less serious. There is greater resistance to the flow of blood, and the cellular tissue acts as a haemostatic. Recovery here is the rule rather than the exception, an extra-peritoneal haematoma cell being produced. Yet, though Trétiac found that the peritoneum resists a pressure of two atmospheres, (Ann. Sept. 1849, and Obst. Vol. 1., p. 169.) we must remember the possibility of it giving way so that what was formerly an extra-peritoneal haematoma becomes intra-peritoneal also. Bannatyne and Gordon relate an example (Op. cit. p. 238). The peritoneum forming the posterior layer of the broad
Ligament presented a perforation communicating between the recto-vaginal cul-de-sac and the cellular tissue. Another case is given by Barnes, (Diseases of Women p. 610) in which the fresh rupture did not occur till a month had elapsed.

(1) Other examples are recorded by Silvester, Amer. Symp. of Gyne and Obst. 1849, Thomas, Diseases of Women 1881 p. 35-10, and Emmet, Diseases of Women p. 251. The last two refer to the same case, one of antenatal hæmatomele as large as a goose's egg which had ruptured into the peritoneal cavity and caused death. In The Path. Ann. of St. Barth's (1840) is a specimen of hæmatomele of the right round ligament about size of a walnut. On the anterior aspect are two small recently formed irregular openings. She was aged 25 years. Was in Hospital for a week on the uterus, was suddenly attacked by symptoms of internal hæmorrhage and died in 12 hours. Source bleeding not discerned.
Another way in which blood may be
effused both as to a punctum, and
into a punctum, in the same patient
is that the tube may rupture in
two (or more) different places. In
the description of a specimen of
ruptured tubal gestation by Shaw
Macanuie says, "The tube ruptured
primarily downwards into the broad
ligament, but upwards also." (Brit
Gyn. Journ., Vol. XXXV, p. 262.)

Cases are on record in which
in which during extratubal pregnancy
hæmatocele has occurred, not from
rupture of the ovum cyst, but from
that of a dilated vein in the broad

We cannot deny that rupture of a
vein might produce an extra-punctum
effusion, while the cyst ruptured
into the punctum early, or vice versa.

When rupture of the tube
takes place, as in a punctum, the foetus
may die; or may survive and
continue to grow. Should it die
both it and the effused blood may at this early stage be entirely absorbed. (We are speaking of primary rupture) in a couple of months or less. one may find no trace of either blood or fetus. or the effused blood may undergo any of the other changes which take place in haemorrhage, suppurative, etc.


Patient had been married for the second time for 3 months. Had only menstruated once since marriage, 16 weeks ago, previously regular. Milk in breasts, and everything pointed to 24 weeks gestation except the fact of the uterus not being enlarged. Haemorrhage to left of fundus nearly to the level of the umbilicus. Patient improved, and blood was absorbed.

Though the fetus may die before rupture of the tube takes place, that fact offers us security against the
occurrence of haemorrhage, the placental circulation has been shown to continue after the death of the foetus, and to cause fatal haemorrhage. (Hart and Barlow, Mammal of Gyn. Foetal Trans., Paris, 1886, p. 646).

Should the foetus live and continue to grow after the apparent rupture of the placenta, the results are very various. It seems that it is this class which yields all the cases which go to the period of viability, all the book cases, all the suppurating cysts discharging into bladder, rectum, etc., and also the cases which by secondary rupture of the ovum cyst (1) get called abdominal pregnancy.

(1) Various papers by Hart in Ed. Med. Jour. and in Laboratory Reports R.C.P. Ed.

Subsequent observation has demonstrated the fact that in all tubal pregnancies, which survive the primary rupture, and continue their development, the gestation sac is formed in part by the expanded tube.
(Taxi, 66. Women p. 432). But secondary rupture of the ovum cyst may produce another result and one which more immediately concerns us here, viz., intrapelvic haemorrhage. If the latter period at which primary rupture can take place is the 14½ week it follows that in any case where we have reason to believe that pelvis haematocele has been produced by rupture of the cyst subsequent to that date, then this rupture must have been secondary. We are rarely able to say when the 14½ week has arrived, but a haemorrhage occurring so late as the 6½ month we may be sure is from secondary rupture.

Sometimes, too, we have the period of primary rupture marked by loss of blood from which the patient may recover and go on for some months.

"but mainly by the loss of the corresponding broad ligament."

Blair, Sutton, 66. 66.6. 66. 66.9. 66. 66.
before suffering from a second haemorrhage in one case recorded as having occurred in the Maison d'Accouchement in 1816, tubal rupture took place at the usual time, the fatal haemorrhage not until the 6th month. (Bernhardt, Gynäk. Zeit. p. 247, Taut, Die Gynäk., p. 247.)

We now turn to the consideration of those cases of haematocele in which from the history, examination seems to have been the exciting cause of rupture of the extra-uterine foetal cyst. Fallopian, ovary, omentum, etc., have long been looked on as liable to cause rupture of the cyst, and in the expectant treatment of extra-uterine gestation as laid down in Troeltsch of a few years ago this avoidance is counselled.

Medical interference has sometimes produced rupture of the cyst. Even simple pelvic examination has apparently been the determining cause in some cases. Maas (Beiträge zur
Tubenschwangerschaft, Drang. Dissert., Berlin 1887) has published a case of death occurring in the course of an exploration, and in the Arch. des Toc. (Vol. x. 1891, p. 320.) it is stated that 2 hours after examining the patient she was seized with symptoms of internal haemorrhage.

The treatment which is still at times adopted of tapping the cyst to cause the death of the foetus, or for other purposes has, not rarely led to the formation of a haematocolpos. Barbour (Ed. Med. Jour 1882, p. 220) records a case in which the cyst was punctured by an aspirator needle to relieve pressure symptoms, and in which a haematocolpos was noticed 3 days afterwards "probably due to the tapping." Another case is related in Albam Foran's 'Operative Gynaecology' p. 355, and in The Trans. Obst. Soc. Lond. 1879, Vol. xxv 1 p. 93. The sac was tapped by an aspirator from the rectum, and a little iodine injected and removed to check the bleeding. The lig.
Ferri, Pechlot, and others were used. 4 days afterwards, sudden death took place. The peritoneum was full of blood. Stick had come from an aperture in the back part of the sac. Thomas has shown that the lemon with a needle, in each case with a fatal result. (Am. Jour. Obst. Vol xiv p. 89)

Bland Sutton has recently expressed his opinion that the determining cause of rupture in some cases has been sexual congress. (Diseases of Brain, p 180) He mentions a case in which the symptoms set in immediately after the act was vigorously indulged in. We can easily see how this result might occur either from direct injury to the cyst, especially if it were situated behind the uterus, as it may be (Thomas, Trans. Amer. Gyn. Soc. Vol vii p. 234, W. Dumeau, Lancet Mar 1st 1890 p. 452), or else from the congestion of the pelvic organs which occurs. Records of several similar cases are to be
met with (1), and it seems quite likely that a considerable proportion of those carefully traced by authors, notably French, (Doulonquet - Laborde, Thiers de Paris, 1843, etc.) to contain as the cause may really have been due to the rupture of an abdominal gestation sac during its course.

Two cases in such falls seem to have acted as the determining cause of rupture are given by Hermity & Goupil (Ecrit p. 243 & p. 251), and one by Thomas in which the patient was struck violently on her feet when about to enter a street car (Am. Jour. Obst. Vol X VIII p. 87). The former authors also relate one caused by the exertion of carrying a heavy weight.


In the pathological Museum of University College Hospital is a specimen (3213) of rupture of a right tubal gestation. The patient ran half a mile to overtake her husband. On reaching home she slept two hours and awoke suffering from pain & collapse.

Staining at stool may be the exciting cause of rupture, as illustrated by the two following examples. In St. Bartholomew's Hospital Museum No. 3072 c. is a specimen of ruptured right tubal gestation. A week before death the decidua was discharged. Two days later the cyst burst suddenly while at stool. In the Museum of Linnean Coll. Hoop. is a somewhat similar specimen (3212). It is also a right tubal gestation. The patient took a calomel pill in the evening & a draught of penna root morning, and died in the process. Intraperitoneal haematoma. Death in 48 hours. Burnett & Gompil. Brit. Med. J. p. 281.
of the two or three cases of pelvic haematocoele which have come under my own care or which I have had an opportunity of observing, the case almost to the point is perhaps the most interesting as it is the one which has been most closely observed and recorded. In none of the cases I have seen has there been an opportunity of post-mortem examination. The record here of this case leaves much to be desired as she did not come to hospital till a month after the onset. The patient was under the care of Dr. Wheaton in the Hospital for Children & Women, London. I was present and examined her when she first came, and during her sojourn in Hospital, through the kindness of Dr. Wheaton I was able to see and examine her frequently. From my own notes supplemented by those taken by the then registrar.
Theodore Fisher (now of Bristol) the following account is presented.

Name: J. C., age 17 years.
Occupation: Ballet girl. Singing.
Date of admission: April 5, 1892.
Complains of having been ill during the past month, having been confined to bed. She says her medical attendant called it "Inflammation of the bowels." A month ago while dancing in the ballet she was seized with sudden severe pain in the abdomen and faintness. The pain increased and she took to bed.

Mental history. Catamanchia began Jan. 1892. Regular every 4 weeks till Dec. of same year. The discharge usually lasted two days and was accompanied by little or no pain. After Dec. she missed two months and then lost a good deal for nearly a whole week with considerably more pain than usual, and for the last seven weeks she has been nothing but functional disturbances.
Bladder, no history of pain or difficulty of micturition.

Bowel. Since beginning of present illness have been very obstinate. Not moved at all for a whole week before admission. Enemata have been used.

General appearance and configuration. On admission very pale thin girl, great prostration, and pain apparently intense in abdomen. Fullness across abdomen from just one inch below the level of the umbilicus to the pubis.

No sign of pregnancy in the breast. Great tenderness in lower part of abdomen so that nothing can distinctly be made out by palpation.

Per vaginam colour does not suggest pregnancy. Hymen not intact. Large hard mass to be felt on left side of pelvis. Cannot be placed and directed towards right, but fundus appears...
to lie in the middle line. The left fornix is depressed by the mass and the uterine is fixed by it. Uterus appears to be somewhat enlarged, but point not passed.

April 6 = Enema and Confectio Seminae Tij which produced a large evacuation.

The upper limit can now be felt an inch below the umbilicus chiefly occupying the left iliac region.

The fundus uteri is rather to the right of the middle line.

April 8 = Uterus came still pointing towards right. A hard mass with somewhat nodular outline is felt in the left fornix projecting downwards.

It can be slightly moved between the vaginal finger and the hand on the

In the registrar's note of this date he says "Upper limit can be made out 1/2 inches above the umbilicus". This, I think, is a mistake. It should be below. At no time that I was the patient did the swelling extend above the umbilicus.
abdomen. It is now only slightly movable apart from the uterus. No fluctuation can be detected in the mass. The side of it nearer the pelvic wall is harder and firmer than the other. It is about 3 inches above the level of the pelvic brim. Nothing abnormal in right fornix. Per rectum, the mass felt projecting on left side. No ring surrounding rectum to be felt. No discharge of any kind from vagina since admission.

April 12th: The swelling in the left fornix is distinctly smaller and softer. Uterus is now in middle line and slightly movable. The cervix is directed downward and backwards and feels rather soft, but no real pressure. The pain in abdomen has almost disappeared. No discharge.

May 4th: Only slight thickening to be felt in left fornix close to pelvic wall and apparently continuous with it. Uterus perfectly straight and in middle line. No swelling to be felt in abdomen.

Patient going out.
Though discussing more particularly points bearing on the etiology of pelvic haematocèle, I may be permitted to digress so far as to point out one or two facts of interest in this case.

First the age. The patient was only 17. Of Schroeder's list of 43 cases (Ueber 8 Blasen. Am. J. Surg. p. 181) none seem to have been under the age of 22, and only 7% between the ages of 22 and 25.

Next the temperature during the time the patient was in hospital, only once rose above 100°F, and for the most part was little above normal, though the absorption of blood was going on rapidly. A similar observation has been made in other cases, such as that reported to the Brighton and Sussex Med. Soc. by Mr. Geo. Morgan (Brit. Med. June 1891 part 1 p. 288), in which the temperature was normal during the absorption of the blood except on one occasion when 100°F was reached. Hunter in his experiments
on animals did not find that the temperature rose. (Dr. Hunt, Jour. of
Anat. & Phys. vol xxi. p.466.)
"Ibach says: 'If the temperature be high
100-104° F we may be pretty sure that
the blood is foetid.' (Brit. Med. Jour. Feb. 26,
1886)"
Another point worthy of note was
the rate of absorption of the blood,
and the fact that such absorption
was practically complete. She was
admitted Apr. 5th, and discharged
May 1st so that in less than a month
a tumour reaching to 1 inch below the
level of the umbilicus was absorbed,
leaving only a little thickening in the
left forearm. I do not mean to
assert that it is unusual for a blood
tumour of this size to be absorbed so
rapidly" On the contrary a month is

"Dr. Olivier tells me of a case which he has
since published (Di. peculiaris to Women 1893,
p.49). The tumour reached almost to
the umbilicus. In a month it had disappeared
often quite sufficient to effect this, and even more rapid absorption sometimes occurs. Matthew Duncan (Clin. Lect. on Dis. of Women p. 358) relates a case in which the swelling reached to within 2 inches of the umbilicus, yet in a fortnight after admission to hospital it had almost entirely disappeared. It is difficult to understand why some of these blood extravasations are so rapidly absorbed, and others apparently similar take so long. I had a case under my care for about three months, a few years ago, in which the tumour at the end of that time did not seem much if any smaller than when I first saw the patient.

As regards the etiology of the case, there can be no doubt that the exciting cause of the haematotcele was the exertion of dancing in the ballet. The predisposing cause was not so clear. My own idea of it, as may be gathered from the leading
under which I have grouped it, is that it was due to the rupture of the uterus of antemine gestation. She had been menstruating perfectly regularly for a whole year. There was no history of gonorrhea, or other pelvic mischief, nor of any symptoms indicating a congested state of the pelvic organs.

She had been exposed to the possibility of conception. She missed two periods, and then had a purulent discharge lasting for a week, and accompanied by pain which she had been almost entirely free from during her ordinary periods. This, I take it, was the discharge of the uterine decidua.

Three weeks later came the sudden attack of pain and giddiness, a period well within the limits of the time during which primary rupture may take place. There was no swelling in the breasts at the time of admission, nor vaginal coloration. But as we have seen, these regions must not be depended on, and besides
a month had elapsed between her
seizure and her reception at hospital
as an inpatient.

Against the theory of extratutine
conception, it might be pointed out
that menstruation was late in appearing
not until her 16th year, that it
was always scanty, lasting two days,
and that in the month during which
it was suppressed she was leading
an arduous life, exposed to cold,
etc., as a ballet girl touring with
a company in the provinces. On the
whole, however, the weight of evidence
is in favour of the theory of extratutine
conception.

Granting then that this case was
one of extratutine conception, it is such
cases as this, and the one reported
by Bland Sutton (Diæ of Ovaries, p. 310)
becoming in young girls with no previous
pelvic disease, with no abnormality
to be found in the tubes on post-mortem
examination, other than the presence of
an ovum in one of them, after perhaps
The first connection, or without complete connection having taken place, does lead us to believe that something more than the usually accepted conditions of mechanical interference with, or inflammation of abnormal or absent peristaltic action of the tubes is required to explain the occurrence of early uterine gestation in them, and I was glad to see that Dr. F. C. Webster in the Ed. Med. Jour. Dec. 1893, propose a theory which seems to meet such cases. Indeed on thinking over the subject previous to the publication of this paper, a somewhat similar idea presented itself to my mind. I cannot however agree with him in his remarks regarding the relation of menstruation to uterine pregnancy. Pregnancy may indeed occur in a girl before she has had any periodic discharge of blood, but it is very doubtful whether the discharge of blood is an essential part of menstruation or only "an accident." Aitken, Hist. of Women, Vol. 2, p. 324, Playfair.
Periodic changes probably occur in the uterus without any external discharge of blood, such changes being often accompanied by feelings of malaise, headache, etc. Some young girls suffer in this way periodically for months before the haemorrhagic discharge actually takes place. To use their own words, "They feel as if they would be as..."; and surely with all this general disturbance it is reasonable to suppose that local changes take place at the same time.

If then in some cases the tubes are able to respond to the genetic influence, whether through reversion to an earlier type or otherwise, may their mucous membrane not also in some cases respond to other stimuli which usually affect the mucous membrane of the uterus alone?

If proliferations of the uterus, for example, the haemorrhage come from the hypertrophied mucous membrane of
The uterine cavity generally: "(Hart and Barlow, Man. J. Gyn. 1890, p. 476), and it is not unreasonable to believe that in some of these cases, the mucous membrane of the tubes hypertrophies also. If so this fact would offer an explanation of the occurrence, by no means rare, of tubal gestation in cases of fibroid of the uterus, in which the tumours from its situation could not possibly have interfered with the lumen of the tube.

![Diagram of Fallopian tubes and fibroids in the uterus]


In three out of eight specimens of
The question as to whether the tubes take part in menstruation, or not, has been one much disputed, and we have as yet very little light on the subject. On the one hand Pozzi, for example, says: "There is scarcely room for doubt that the tubes during menstruation are the seat of an evacuation of blood similar to that which occurs in the uterus" (Pozzi, Treatise on Gyn. 1893, Vol 17, p. 154); on the other, Hart and Barthour, (Jour. of Gyn. 1890 p. 85) state that, "All observers are agreed that it (the discharge) comes from the area limited by the uterine ends of the Fallopian tube and the 20 intercins."

If haemorrhage from the tubes were the rule, then probably anatomical signs would occur more frequently, and in cases, 9

Among others who have expressed this theory, we may mention Tait, Lee, Poucet, and Raciborski.

generation in the museum of University Col. Hosp. The uterine contained fibroids.
lymphea or pyosalpinx, even of the mucous membrao of the tubes secreted only a drop or two of blood at the menstrual period, we would expect to find evidence of it in the fluid. But though probably not the rule, yet those cases of pyosalpinx with atresia of the uterine end of the tube show that blood may possibly originate from the tuba, and it seems likely that Schroeder is right when he says ("Lynnser's Cyclop. of medicine vol x 3, 1473") In exceptional cases a haemorrhage may take place into the canal of the fallopian tube during menstruation.

Should this be so, we can deduce a theory which might be applicable to some cases of ecto-uterine gestation. Of menstruation (in which the external discharge of blood is the usual sign that is quite possibly an "introduced accident") is essential to pregnancy and if the tubes in some case take part in this process, either to the extent of actual blood effusion, or to a less extent resembling more the
Changes in the uterus during the periodic discharge, prior to the establishment of a blood discharge, then it is in these cases that a fertilized ovum, if other circumstances—place of fertilization, etc.—are favourable will find a suitable nidus and develop in the uterus.

We however know so little about the changes which actually take place in the human uterus during menstruation, and the statements made are so contradictory, that it is with much trepidation that I give even the foregoing brief statement of what must in our present state of knowledge be purely theoretical.
Tubal Absortion is a subject which has attracted some attention in recent years, and it has been denied by some authors that such a thing ever takes place.

It is thus defined by Bland Sutton (Dis. of ovaries, p. 227): "The term is applicable to cases in which haemorrhage takes place from a grand tube, the blood entering the peritoneum through an unlosed ostium, the tube remaining whole."

Allan Price, in Brit. Med. Jour. 1891 part II p. 696, is reported as follows: "It (T. A.) includes cases where haemorrhage into the membrane, bleeds the ovum and tears the tube, and cases where the ovum is projected entire and undamaged out of the ostium of the unruptured tube into the abdominal cavity.

In a true case of tubal absortion, as a rule, the tube remains whole. Any purulence that does occur is merely due to a giving way of the wall of the
tubes at or close to its abdominal opening.

It will be at once evident that tubal abortion is quite a different thing from uterine abortion. If any hypertrophy of the muscular coat of the tube takes place at all it is only to a small extent; the main factor is not muscular action, but Laemor bagae. The free extremity of the tube becomes dilated by the bleeding within it, this Laemor bagae also causing the separation of the ovum, entirely or partially, from the wall of the tube. If the ovum becomes entirely separated from the wall of the tube it may be swept into the abdominal cavity, and no evidence of its presence or membranes be found in the tubal clot. Very seldom indeed.

(1) Henning has remarked that the muscular tunic of the tube hypertrophies until the end of the second month, then under the influence of the distention it becomes thinner & ruptures. Walls of the tube gradually thin. Bland Sutton. p. 266.
in these cases, are we able to find any trace of the fetus, that even in ordinary uterine abortion it is apt to disappear. That tubal abortion is the cause of some (I am inclined to say, a fair large proportion) cases of pelvic haematocolpos is a theory of comparatively recent date; the very possibility of its taking place at all has been denied. As one of its supporters therefore, it is incumbent on me to bring forward such evidence as I can command in proof.

"St. Thor. Hosp. Jun. 24th. Decidua, etc., from a case of early abortion. Decidua vera entire. S. reflexa near one of the Fallopian tubes in this a window has been cut to show fetal membranes, but no trace of embryo was found in the amniotic cavity. Sterilisation had not occurred for 3 months before the abortion." St. Barth. Hosp. Jan. 30th. E. early abortion 3rd month no embryo could be found, but developing placenta and strands amniotic sac may be seen.
In the museum of St. Thomas' Hospital is an excellent series of specimens, prepared by Dr. Bullingworth, and in the museum of the R. C. I. Med. are also some valuable specimens, which throw light on this subject. These two lots of specimens taken together disclose to us a view of all the steps in the process. We see a tube full of blood clot in which both foetus and membranes are visible, another in which the amniotic sac was discovered in the clot, but the foetus was absent, yet another in which chorionic villi were discovered by microscopic examination, and still others in which neither foetus nor any product of conception could be found, but in which the history of the patient pointed to intrauterine gestation.

The more important of these specimens are well worthy of a detailed description.

Specimen No. 2481. St. Thomas' Hospital Museum exhibits a longitudinal section of the
Part removed in a case of tubal abortion.

The tube is distended into an oval thin-walled case about 2½ inches × 3 inches in chief diameters. In the centre of the clot is a cavity lined by amniotic membrane from which hangs an umbilical cord.

Both cord and membrane pass through a circular opening about ½ inch in diameter into a smaller process of the main pae closely adherent against the wall of which are the remains of a foetus. The sac holding the foetus is probably a portion of the tube incompletely flared.

from the rest by such a septum as is
found amongst the preparations by
diffusion.

No. 2480 (same museum) is a Fallopian tube
denuded by operation. In connection with the
distal portion is a closed cyst-like cavity
full of blood clot, possibly a portion of the
tube in which abortion has occurred com-
pletely instead of partially cut off as in the fore-
ggoning specimen.

No. 2476 (ditto) is also a Fallopian tube. The
uterus abdominale is open and from it pro-
gressed a portion of a ragged dark clot. In
the midst of the clot is that appears to be
an amniotic sac. At the operation some pure
blood was found in the peritoneal cavity.

(Manuscript catalogue St. Thom. Hosp. Path. Mus.)
No. 467956 (R.C.P. Eng. Mus.) is a specimen
in which chorionic villi were found by
microscopic examination in the partially
organised blood clot which filled the
dilated tube.

Various of the specimens are to be seen
of tubes, with open abdominal extensions,
sometimes with a rent close to the uterus,
dilated and filled with blood, in which the history of the patient indicated the probability of late twin uterine gestation.

The foregoing series of cases is to my mind sufficient to support and confirm this theory, and by this theory we are offered a satisfactory explanation of many cases of pelvic haematocoele in which the patient has survived and the blood has either been absorbed or has remained in the abdominal cavity for years.

Though both tubes be found to contain blood, this fact is very far from affording grounds sufficient to exclude the possibility of late twin pregnancy. Whether an impregnated ovum

(1) St. Thos. Hosp. Mus. 2485. Left uterine gestation ruptured; opposite tube distended with mucus and altered blood forming a long tense ovoid tumour. Patient had missed two periods.

can be expelled unrestrained from the ostium of an unrepaired tube, or not, is a question which at present we are unable to solve. If it is so discharged, "it never becomes engrafted on the peritoneum and never develops in the peritoneal cavity." (Bland Sutton, Brit. Med. Jour. 130 47 part II 1891)
Uterine abortion. Cases of pelvic hematocolpos after ordinary uterine abortion in which the cause is clearly indicated are not numerous, and still rarer are those which have been verified by post mortem examination if we except cases such as that of Barton in which both the abortion and the hematocolpos have a common cause, and those from forced abortion where rupture of the uterus or other obvious injury has occurred.

That the pelvic swelling in the recorded case personally a hematocolpos has been placed beyond doubt by the fact that many of them have been treated by incision of discharge.

per sectum, but whether some of the cases, especially those which occurred after only one or two periods had been missed, were not really due to an intrauterine pregnancy accompanied by the discharge of an intrauterine decidua, it is difficult to say.

If the haematocele in abortion is due to the sequestration of blood through the lutea, as possibly occurred in Barlow's case, we would expect it to be formed when the haemorrhage from the uterus is greatest, but in some of these cases the haematocele seems not to have formed or at any rate not to have been discovered for some weeks after the (supposed) abortion, as for example in the case related by Peanuty (op. cit. p. 217) in which abortion took place at the)

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(1) Barlow, Diseases of Women, 1873, p. 5-90.
Second month, the patient complained of abdominal pains 8 days after, and the utero-rectal blood tumour was discovered a month after, and in Byford's case (Amer. Jour. Obst. Vol. 11, p. 1121.) where the haematocèle occurred 3 weeks afterwards.

We can account for these intervals of weeks elapsing between the abortion and the discovery of the pelvic haematocèle in several other ways apart from the theory of a transient gestation. The blood may not have been due to regurgitation at all, but rather to rupture of a vein, in a patient who perhaps had got up too soon and had a subinvoluting uterus and congested pelvic vessels, or again even if the blood were effused at the time of the abortion it may have remained fluid for some considerable time without being evacuated, and therefore impossible to diagnose.
Rupture of the pregnant uterus produces symptoms similar to those observed in rupture of an extrauterine gestation cyst. The peritoneum is ruptured in rupture of the uterus it gives rise to an intra-peritoneal haematoccele, if not it causes an extra-peritoneal haematoccele. (John Phillips, Diseases of Women 1893 p. 201)

Rupture of the uterus may occur at any period of uterine pregnancy (Barnes, Fr. J. Women 1873 p. 590).

Parvin (Science & Art, 4th ed. 1887 p. 502) mentions a case in which occurred at two months, but it is after the uterus rises into the abdomen that it is more exposed to injury from external causes. That is, from gunshot wounds, or from the horn of an animal. The

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1. Linne, Coll. Hosp. Jour. 4248. Rupture of the uterus on left side five inches long. At the upper part the peritoneum is not torn completely through, though there is an artifical wound of blood beneath it.
patient may survive for some time even when the uterine rupture nears term, and the foetus escapes into the abdominal cavity. In spontaneous rupture, the death is usually at the fundus or near to it (Parvin, Science & Cult. Oct. p. 303)

Pregnancy in a rudimentary horn of the uterus, though 'the gestation may go on to full term and then uneventful labour lead to the death of the foetus' (Bland Sutton, Gynec. p. 362.), as a rule terminates in rupture. Bland Sutton states that cases of this kind left to themselves have given 2 or 3 deaths out of 30 cases in the first 6 months. (P.33: Gynec. p. 188). Rupture may take place at any period from the second month onwards. A specimen of a left, pregnant horn which ruptured at the third month of gestation is to be

(1) "Neugebauer (Warsaw) at 16th Internat. Med. Congress.
Rupture of the uterus was not diagnosed before death in this case. Patient lived some time..."

The diagnosis is the living subject of pregnancy in a rudimentary horn from tubal gestation is impossible. Even at the autopsy it may be difficult (Turner Ed. Fed. Jour. May, 1886, p. 971), and still more so when the specimen has been removed by operation. The case related by Dr. Robertson and Harris in the Trans. of Manchester Pathol. Soc. Vol II, p. 61 illustrates this difficulty very well, and has other points of interest.

It shows that blood firmly coagulated in the pouch of Douglas may produce no distinct tumour on vaginal examination. In it the foetal cyst though belonging to the right side was found on the left of the middle line and above the plane of the pelvis, the displacement having been probably caused by the blood coagulum.
Thos. Harris M.D. She examined the parts removed at the operation and said: "It is impossible to exclude the possibility of the case having been one of tubal or tube-uterine gestation." I reproduce Dr. Harris' diagrams as it shows so well the difficulties met with.

Cut surface is composed of uterine tissue. Greater part of it is composed of muscular tissue. Length of tube 7.5 cm.
Injury during pregnancy may cause the formation of a pelvic haematocoele in other ways than through rupture of the uterus. Brumfit and Gompel (op. cit., p. 163) record a case in which a patient 5 months pregnant was riding in a cart. The jolting of it caused her great pain. She died 8 hours afterwards. On post-mortem examination an extra-peritoneal effusion was discovered, the blood having evidently come from a rupture of one of the veins of the right ovary.

A pelvic haematocoele has followed an operation for femoral hernia strangulated as a result of persistent vomiting during pregnancy. (Amer. Jour. Obst. 1886, Vol. xix, p. 1262). After the operation the vomiting ceased for 2 or 3 days, during which time the haematocoele was in process of formation. Hernaea returned and she died 2 days afterwards. There would seem to have been no post-mortem examination.
From injury during delivery pelvic haematocoele may be produced. In such cases it may be intra-peritoneal or extra-peritoneal of that form. The latter share the bleeding latter palace into the recto-vaginal septum. In a case recorded by Beaumont and Cruikshank (Spec. p. 167) Such resulted in death. It was found that all the parts in the right iliac fossa were extensively ecchymosed, and also the mesentery. There was a large black clot in the pelvic cavity. There seems also in this case to have been a Culver's haematoma.

For all relates a case of extension into a peritoneal haematocoele after labour causing death. (Trans. Obst. Soc. Vol. 74. 1889, p. 303). In a case with Mcintosh describes and Such ended by death on the 18th day post partum there was found a partial rupture of the uterus. Such a had probably occurred during delivery (Clinical Memoirs on Ob. of Women. p. 289), and in doubt rupture of the uterus partial or complete.
is the most common cause of the hemorrhage in these cases (except the group where it is confined to the recto-vaginal septum). In almost every pathological museum may be found one or more specimens.

Hemorrhage confined to the recto-vaginal septum is recognised by the fact that the vagina is filled with a puffy form mass base downwards, bulging forwards from the posterior wall. It may extend from the posterior fornix down to the perineum which it causes to bulge, and the swelling may be so great as to protrude from the vulva. Somerville (Ed. Med. Jour. Vol. xix. July 33 July 1881) relates a case occurring in a primipara about 1½ hours after the birth of the child, and I Ballahay Brown in a very interesting paper read before the Ed. Obst. Soc. Mar. 13th 1886 gives a record of 3 cases which had come under his notice.
Connected with menstruation. 

Menstruation, the other great function of the human uterus, occupies in the following group of cases a position as a predisposing cause, comparable in some respects to that occupied by pregnancy in the preceding section, the exciting cause being some trauma, during menstruation or some disease affecting the organs concerned. We may therefore classify these cases thus:

\[
\begin{align*}
\text{Obstruction to} & \\
\text{cessation} & \\
\text{Menstruation} & \\
\text{injury during or near the time of} & \\
\end{align*}
\]

The obstruction to the discharge of the menstrual blood may be situated in the uterus or vagina or at the hymen. The latter may also be stenosed, but whether the blood contained in these more external portions should be included under the term menstrual or not is disputed.
In some respects at all events it resembles menorrhagic discharge. A drop of pure blood escaping into the abdominal cavity we are justified in saying would be completely absorbed without causing inflammation or trouble in any way. Blood in small quantities probably often escapes into the peritoneal cavity on the rupture of the Traffian vessel, without producing any peritonitis, and when pure blood in larger quantity is effused it may remain clotted or partially clotted but free, in the abdomen for years, having given rise to little or no inflammatory mischief. The menorrhagic discharge, however, is more irritating than normal blood.

as indeed is proved by the intense uteritis, it occasionally set up in the male, and vonin, observation states
have some drops of blood penetrated into the peritoneal cavity when it inflames.
(Priestley in Reynolds System p. 787) is probably true of menstrual blood.
How then the blood in the tubes in these cases of uteritis escapes gradually from the peritoneal end of the tube.
it set up a localized peritonitis, swelling from the tube and uterus, (Hast and Barium, 1890, p. 513) and
therefore we may conclude that it possesses irritant properties not possessed by pure blood, but similar
to those which characterize the menstrual discharge.

Does this irritating sanguineous
fluid in the tubes get into them by
reflex from the uterine cavity? In some
cases, it seems to be impossible
that this is its origin, because the
uterine extremity of the tube is entirely
closed, and the only conclusion left
is that it comes from the mucous membrane of the tubes themselves.

Obstruction in the uterus itself occurs at the cervix and may be partial or complete. Barnes (An. J. Obst. p. 601) relates the case of a young lady with a conical cervix and small or in whom hæmatostecle occurred. Gilchrist adds a case of menstrual dysmenorrhea complicated by hæmatostecle and says: "Has been many other cases of this." (Clin. Lect. on Diseases of Female Gen. Organs, p. 439. 15th Ed.) Hardy Harlott (An. J. Obst. p. 480) mentions cancer as a cause of menstrual retention. Tilt (An. J. Obst. 1863, p. 257) gives a case from Paris where complete obliteration of the uterine orifice took place 4 years after an operation on the cervix. Menstrual retention and pelvic hæmatostecle followed ending in death.

(1) Haemorrhages from the Fallopian tubes are not rare in connection with Hæmatostecle.
Again in those cases in which the uterus is rigid, one of the uteri or one of the division of the septate uterus may have no communication with the vagina. Such a case is described by Falabian (Trans. Obst. Soc. Lond., vol. xxix p. 21). The menstrual fluid was retained in one half of a rigid uterus. Percutaneus was made with a canula. Patient died on 12th day following. No post mortem examined was allowed. Dr. Falalbain ascribes death to rupture of a dilated Fallopian tube or some abscess in its vicinity.

Obstruction in the vagina or at the hymen is most common of all, and like atresia of the cervix it may be congenital or acquired. The latter due to operation or from swelling after a difficult labour, or a severe illness.

There is obviously in this case a primary leucorrhoea within the canal of the tube. Schroeder in Leimann's Cyclop. Vol.II p. 473.
or again the coalescence of the ducts.
Müller may be still less complete,
and the uterus and vagina being
both double, retention of menstrual
products may occur in one of them.
Among the more interesting examples
of acquired obstruction in the vagina
I may mention Alhansen's case quoted
by Barnes, p. 588. In it uterine vagina
followed an attack of Typhus.
A pelvic haematoccele formed and death
took place. On post mortem examination
the uterus was found elongated, both
tubes much dilated, densely fibrotic
inside especially towards the uterine end;
the retro-uterine allowed the sound
to pass easily. Uterine cavity empty.
Barnes and Culpin quote many cases
of haematoccele following retention of the
menstrual (op. cit. pages 14, 17, 19, 20)
fluid; one of them being a case of absence
of the vagina in which the bladder was
laid open during operation and death
occurred on the 3rd day following. In
most of these cases the tubes seem to
Have been dilated, their free extremities, 
closed by inflammatory adhesions, and 
the blood to have escaped by rupture 
of the tube.

Retention of menstrual discharge 
in one half of a double uterus and 
vagina with rupture of the corresponding 
tube was what occurred in Dece's case 
(Barnes, op. cit., p. 603). Here it was 
the left vagina which was imperfectly 
hemisected (Anais. Jour. Obst. Vol. V. 1891. p. 397.) gives table of 81 cases of 
obstruction at the hymen, but very 
Jes seem to have developed hematocolp 
when in the case Retention of menstrual 
products in one of a pair of uteri, and 
in the corresponding tube, the patient 
may pass her whole menstrual life 
without suffering inconvenience from or being 
aware of the abnormality.

London Hospital Jan. 2183. Left vagina 
1 2 inch x 1 11 inch in diameter. I recent tube 
full of thick fluid of a chocolate colour 
no trace of orifice. Above and behind thi...
Of transverse septa further up the vagina very few cases were imporinate. Bullingworth (Lancet 1889 pt 1 p. 726) says that the usual situation of these is from 1½ to 2 inches above the vaginal orifice, and in only two of the more recent cases had failure to detect an opening occurred.

The vagina is a small tube almost 1 inch long. Cervical canal obliterated probably by adhesions. Left Fallopian tube dilated, but extremely large, an orange in size, calcareous wall and filled with thick brownish chocolate-coloured matter similar to that filling left vagina, ending old partly decoloured menstrual fluid. The Fallopian tube is obliterated like the cervical canal. The age of the patient was about 50-60. She had had two children. In this case the peritoneum and ureters opened.
The next abnormality affecting menstruation that we have to consider is excess of the flow. It will be considered that many of the cases already referred to might have been arranged in this group, but the cases of excessive flow which I particularly wish to refer to now are those where the first menstruation is very excessive even threatening life, though if the patient survive she may afterwards menstruate normally. In these cases, a large quantity of blood is suddenly thrown into an immature uterus and sometimes finds its way into the peritoneal cavity.

An example of this nature is given by Baroness (Br. J. Obst. p. 652) reporting his death. She expresses the opinion that within the vagina, Patient was not aware of any deformity.

I have seen a young woman who came afterward menstruated naturally at the point of death from excessive bleeding at this menstruation. Duncan, Br. J. Obst. 1879, p. 143.
some of the obscure cases of peritonitis in young girls are due to the menstrual fluid having reached the peritoneum.

Cold, mental shock, straining, acting on the congested pelvic organs about the time of menstruation may produce a haematocele. Probably in most cases they cause suppression of the discharge, but not invariably. However even when the discharge persists it is as a rule much lessened in amount as exemplified in the cases given by Till (St. J. W. 1853 p. 261), and West (St. J. W. 1879 p. 460).

Phlegm in the period has been ascribed as the cause only in a few cases. Lambs (
Vol. 7, 1893, p. 303) state that he saw a case due to this, the onset having occurred during the earthquake at Nice. Burney and Sonpil (op. cit. p. 187) give a case. We know that it is not uncommon for emotion to cause suppression of the flow, and we can conceive the possibility of a vein giving way from the consequent pelvic congestion. Urethritis and masturbation during menstruation. Tait (Vol. 7, 1889, p. 63) records a case of haematcele due to masturbation during menstruation.

Case Mrs. T. seen by me a few weeks ago. Usual duration of flow 4-5 days. She began to menstruate early on Sunday morning. About 3 p.m. on same day her only child, about 2 years old, was seized with a fit while sitting on her knee. Menstruation suppressed entirely last-Came
Barnes (Sp. cit. p. 606) Bandle, and
Peach all cite cases in which contact
during menstruation seemed to be the
seven cases all ascribed to a similar
cause.

Cold. Exposure to cold and
wet during menstruation seems to
account for several cases. Barnes
(Sib. J. Gyn. 1873 p. 605) quotes a case.
A menstruating maid servant, carrying
a large vessel of water on her back upset
it and acquired the whole of the contents
over her back and shoulders. She died
rapidly. Simpson attributes a case to
a chill from sitting on the grass during
menstruation (Sir J. Y. Simpson, Collected
and Surg. Tr. of Abd. Tumours, 1885, p. 34),
West (Dis. J. Gyn. 1879, p. 460), Tilt-
(Sp. cit. p. 261), relate cases. Reimer
of Berlin (Bernitz & Kaupl Sp. cit. p. 84)
on and normally in the following month.
gives a case from taking a cold bath during menstruation in which death occurred in a few days.

Recovery, however, seems to be the rule in the majority of cases included under this last sub-group (e.g. fever, cold, etc. during menstruation) and the hemorrhage is probably usually slight, provided it was not in the case reported by Talbot. There abscess being very slow the abdomen was opened by A. R. Simpson.

In the cases which proved fatal the post-mortem examination showed either evidence of pregnancy or the description given is such as not to positively exclude the possibility of extrauterine pregnancy.
The fourth group of cases we have to consider is that in which the evidence points to the origin of the hematocolpitis from some disease of the special female organs not included under Groups II and III, that is today in which pregnancy and menstruation do not play an active part. This group, like the preceding one, tends itself to subdivision as follows:

Diseases of the special female pelvic organs not included under Groups II and III:

- Ovaries
- Fallopian tubes
- Uterus
- Vagina
- Structures (other than blood vessels) between the layers of the broad ligament
ovaries. Such ingenious theories as that of occasional menstruation from the ovaries, we may set aside at once as having absolutely no evidence to support them. We cannot say this, however, of cases in which the ovary or ovaries have been found congested or apoplectic or actually ruptured. As we might have expected from their structure and from the fact that physiological haemorrhage takes place into the Graafian follicle after its rupture or even before it, we find that the disease of the ovaries that seems to be most closely related to pelvic haematocèle is cystic disease of the type known as the small cystic ovary. Practically all

(1) "The ovum in mammals by itself never exerts a sufficient amount of pressure to effect this result—i.e. rupture of capsule—but its escape is effected through the agency of an accumulation of serum or bloody fluid into the Graafian Vesicle." J.R. Cruiksh. Ed. Med. Fours. Aug. 1893 p. 116.
These small non-malignant cysts in the structure of the ovary are admitted to have their origin from Graafian follicles (Harl and Balashoff, 1890, p. 216).

The earlier authors believed that haemorrhage from a ruptured ovary or ovarian cyst might be very great and even prove fatal (Berens and Gompel, p. 184, p. 186, and p. 238; Tilt, in J. Obst. Gynaec., 1853). Barnes gives rupture of the ovary as one of the causes of non-encysted intraperitoneal haematocele (catastrophic) (Sir, in J. Obst. Gynaec., 1884). There is certainly a possibility that a mere coincidence has been mistaken for a cause. Such a mistake is not unknown in recent times (Bland Sutton, in J. Obst. Gynaec., 1884).

Congestion of the ovary is a very common accompaniment of pelvic troubles, and one has only to look through the museum to see how often we get not only congestion but actual haemorrhage into a cyst or into the ovarian stroma. This seems to occur not only in connection with other pelvic disorders, but also in...
cases. The death has occurred from the cause and no mention is made of any other morbid condition of the reproductive organs. (11) J.W. Martin

Who examined many ovaries removed for various reasons, says a noticeable feature in the majority of these, i.e., ovaries examined is the incidence of haemorrhage, and other manifestations of excessive determination of blood to the organ, the amount of blood pigments and that in various forms, in one case like a mass of vermilion, the condition of the blood vessels and the change filled with blood, haemorrhage into

1) Pyosalpinx with blood cyst in ovary, St.THos. Mus. 2388
2) Parovarian cyst with congested omen. do 2407
3) do with blood cyst. St. Thomas 2906
4) Fibroid with do. do 2910

Bronchitis, kidney disease, fever, and heart disease, are given as the cause of death in 4 cases in which blood cysts were found in the ovary. Guy’s Hosp. Mus.
the stroma, into cystic spaces, into
distended Graafian follicles, under the
surface, into lymphatics and wherever
blood can find its way... Priestley's
is similar. "It is by no means uncommon
in the post-mortem room to find small
collections of extravasated blood in the
substance of the ovary."

No room, then, remains for doubt
as to the frequency of haemorrhage
into small ovarian cysts, or into the
substance of the ovary, and the
probability of rupture taking place
so that the blood escapes into the
abdominal cavity is indicated by the
following cases. The blood may
compress the ovarian tissue till it
forms a mere shell (R. C. S. Eng. Mus.
Vol. xxxi, p. 125); rupture of a corpus
luteum may take place so that blood
becomes extravasated into the substance
of the ovary (Trans. Obst. Soc. Lond. Vol. xxi,
p. 119, and specimen 4548 A, R. C. S. Eng. Mus.)
and a minute opening has been observed on the outer surface of a Graffian follicle filled with blood clot (P. L. S. E. G. 1882).

That hemorrhage from this source is even as great as to be dangerous to the life of the patient, or even to produce severe symptoms is except

4548 e. Rt. ovary with a mass of dark red friable blood clot extruded into the substance of the organ.
4548 e. Rt. ovary with a mass of pale yellow de-colorized clot. A thick baggy membrane seen, appears to be the wall of a corpus luteum, the cavity of which opens towards the clot. (Allan Toran) 4482. Shows a Graffian follicle about 5 in diameter filled with clot at one point de-colorized and saw fresh with a minute opening on the outer surface. Five other small cysts may be seen.
possibly in certain blood diseases, (11) is one of the many difficult questions which this subject presents. The ovarian stroma, for at least its medullary portion, is very loose, very vascular, but its vessels are small differing greatly from the large vessels near the broad ligament, and the branches of the artery are surrounded by some unstriated muscular fibre, which we would suppose might act so as to compress them and check haemorrhage.

Bland Sutton some years ago reported a case, and extracted the tubes and ovaries from it before the Obst. Soc. Lond. (18... 

(1) "I have occasionally found Graafian follicles, pathologically increased in size, and containing very large cells. In certain blood diseases haemorrhage may be so great that the ovary may form a considerable size..." 


Several years later he reexamined the specimen and found that the hemorrhage was caused by rupture of a gravid tube. The ovum was detected among the blood clot. (Sto. J. doctr. 70, 19.)

In the Annales de Gynécologie (vol. xli, 1893, p. 37) a case is recorded on which Poggi operated, but in my mind it is not conclusive. Perhaps after Bland Sutton's case one is inclined to be unduly sceptical, and I have not discovered any case in recent years in which an effusion of blood to any serious extent has been shown to be due to rupture of an apoplectic ovary or of an ovarian blood cyst.
When rupture of the ordinary large cyst of the ovary occurs, haemorrhage is not the prominent feature, but death may take place rapidly from shock, or if the patient survive we may get the condition called by Westphal "Pseudomyxoma peritonei" Disease of the ovary other than cystic disease producing effusion of blood into the pelvis are rare. Barness mentions a case (op. cit., p. 595) in which the source of the blood was shown by post mortem as an ulcer to be a cancer of the ovary. The blood was emigrated.
Falloplian tubes. Apart from the question of salpingitis and the occurrence of uterine gestation, cases recorded in which a haematocoele has been clearly traced to disease of the Fallopian tubes are very few in number. The following would seem, and cases of uterine rupture of the uterus we have already alluded to. Playfair (Trans. Obst. Soc. vol xxxi. 1889 p.130) and Lushack (Brit. Med. Jour. 1885 May 16 p. 983) record cases in which large masses of old formed blood clot were found lying loose in the peritoneal cavity, and similar clots were found in one or both tubes. In their opinion these were not due to uterine gestation. In one of Falabini's cases a haematocoele on which he performed abdominal section he found and removed a double fajo. Salpient. (Brit. Med. Jour. 1887 Vol. 3 p. 883)

A curious ease of haemorrhage from the tube in consequence of its intense congestion as the result of the tumour of the pedicle of a dermoid of the right ovary is related by Dr. Jan. Blinn.
in the Liverpool Med. Crit. Journal (1891, p. 270) Abdominal section was performed. Recent blood and blood clot were found in the peritoneal cavity. The right Fallopian tube was found crossing the anterior surface of the tumor transversely and was intimately incorporated with it. The pedicle was the seat of a double twist. A small blood clot was adherent to the fimbriae. The cyst wall was intensely congested and much swollen, but the cyst contained no blood.

As the question of the occasional abnormal patency of the Fallopian tubes bears on our subject, we will now proceed to a short consideration of it.

Winckel's case showed the possibility of a round worm passing through a tube. (Hart and Barlow 2d ed. p. 186: R. Duncan, Clin. Lect. p. 456)

Barlow describes a case in which after death the was able to pass an
ordinary uterine sound into the internal extremity of both tubes (Gren. Wom. p. 569) and sometimes during life the sound can be passed into the tube. Dr. R. T. Smith tells me that he has recently met with such a case where the sound passed 5 inches going toward one side. Several cases are on record in which clot formed in the uterine cavity had prolongation extending into the tube.

Matthew Duncan gives an account of the post mortem examination of a woman — show one of the Fallopian tubes, the right, was much larger than the left and greenish putrid. She died apparently from the fluid of a vaginal injection having passed along this tube into the peritoneal cavity (Op. cit. p. 356).

Dr.raig Ferguson has a paper on this subject in the Edin. Med. Jour. (Sept. 1893 p. 245) in which he relates several cases of fluid passing from the uterus along the tube.

As showing how very little force may be required to drive fluid
(112)

(though the tube, after labour, & S. Watson's case in instructions (Samuel Dec 21st 1889) Peritonitis was caused in this case by vaginal syringing after two previous confinement.
The syringe (at all events in the second instance) was a Hyflemo.
There was no terminal opening in the vaginal tube, but four lateral ones.
The pain began when only two syringes had been injected, and the fluid was returning freely from the vagina.

Bandy in his experiment on the dead body found that forcible uterine injection with the syringe entirely filled up by the syringe almost always sent fluid along the tube into the peritoneal cavity; less forcible injection under the condition sent the fluid along a less distance (Hast & Barrows, loc. cit. p. 194)

Fluid may also pass in the opposite direction viz. from the uterus to the uterine cavity, and even small solid fragment (larger ones)
Several cases of the above disorder have been recorded. Some apparently dis- 
charged in this way. In the Museum 
of R. C. S. Eng. is a specimen (45846) 
of cancerous disease of the mucous 
membrane and to some extent of the 
muscular wall also of the Fallopian 
tube. Two inches of the uterine end 
of the tube were healthy, being free 
from cancerous growth. For three 
years she had been subject to a 
vaginal discharge sometimes clear, 
but generally a curious showing fragments 
of solid material. Viscous, narrow, 
and apparently healthy.

We may take it that this 
in most women both in the intra- 
peral and in the non-pregnant 
states, the tubes are capable of 
allowing fluid under pressure to 
pass into them and that in some 

(11) Tunn, Too ind. diameter, at its discharge 
Exceptional cases the patency of the tube or tubes is abnormal, hence do not frequent that comparatively little force is required.

The theory of the 'patency of the uterus,' (Jenner, Trans. of Wom. 1833 p. 303) also offers an explanation of a way by which the uterine ends of the tubes may be rendered abnormally open, and at the same time the contents of the uterus be subjected to pressure.

It is to be noted that, in many of the cases where blood has been found in the tubes, its presence there could be accounted for, as well or better, on the theory of its source being the mucous membrane of the tubes themselves rather than that of the uterus.
Displacement of uterus. In a few cases prior to the formation of a haematocele, endometritis has been observed; but this would seem rather to be a sign of passive congestion, as for example in cases of displacement of the uterus than a cause for se of the effusion. Shear (Dis. of Wom. 1887 p. 607) relates a case of haematocoele in which there was evidence of endometritis and congestion of the pelvis, and in which the patient had walked and over exerted herself.

Displacement of the uterus have been given as causes of pelvic haematocoele. For example Traxel (Dis. of Wom. 1882 p. 382) describes a case of anteflexion in which he thought the displacement caused stretching of the tissues and laceration. Knowing as we do how few symptoms (or none at all) may be caused by flexion or version unless complicated by congestion or inflammation, the only cause in which we can
accept these displacement as cause.
8 pelvic haematoma is that they
may possibly have predisposed to
the subinvolution, endometritis, pelvic
cellulitis, etc., found accompanying
them. Dr. Fanny Berlin's case may
have been of this nature (Am. J. Obst., Vol. 22, 1889, p. 495) The haematoma
was anterine. There had been
previous preantotis and retroflexion
of the uterus excluding Douglas' pouch.
On abdominal section the tumour
reached to within 2 inches of the
tentorium. ovaries were very small
and Fallopian tubes normal.
The author thinks it probable that
the haemorrhage took place from
varicose blood vessels in front
of the uterus and perhaps also from
capillary vessels the products
of a local gastritis. In the case
mentioned by Dr. J.W. Simpson
(Coll. Works, Vol. iii, p. 192) the uterus
had been prolapsed for four
years. There was tenorrhoea.
We may be confident in such a case as this that there existed a good deal of passive congestion. Atresia of the oesum has been already considered.

The vagina. There have been reported a few rare cases of malignant disease of the vagina in which a considerable collection of blood has been found lying between rectum and vagina bulging into both and in one case distending the perineum. On aspiration a quantity (in one 8 g. in another 12 g.) of almost pure blood was withdrawn. It contained however a few sarcomatous cells, and the cases seem really to have been examples of sarcomatous degeneration of sarcomas from rupture of the new eruptions blood vessels. (Edin. Med. Jour. vol. 27: 1885-6 p. 625; Amer. Jour. Obst. vol. 41 p. 94 (6.)

A much greater quantity of blood or blood stained fluid has been found
in parasymptomatic tumours elsewhere.
For example, 4. 67. 26. (Rob. S. Ep. Inc.)
is a specimen of a serosanguinous (round and oval cells) of the anterior wall
of the uterus, which contained some
of blood-stained fluid.

In malignant disease
phrenic of the pelvis or organs may be
involved, and this condition is
complicated by the formation of
a haematocoele. Playfair narrates
a case (Trans. Obst. Soc. Vol 34, 1884,
F. 6.) The haematocoele had been
tapped some time before death.
Post-mortem there were found a cancer
chicken of the peritoneum, deep seat,
in the liver, and a mass in the
pelvis.
Length of the broad ligament. When
a parovarian cyst ruptures, the
prognosis is much more favorable
than when a like event happens
with an ovarian cyst. As a rule
the fluid is absorbed by the
peritoneum, and a cure follows.

Pallen however has met with a
in which rupture of a cyst of the
left broad ligament had caused
hemorrhage and death. "The
cyst was eroded on its outer
inferior margin about the size
of the little finger nail."

Again a parovarian cyst may
become distended during life
by the twisting of its pedicle and
blood lies between stabs into the cellular
issue of the broad ligament round
it.

St. Thos. Jan. 24th. Parovarian cyst stuck in
chief diameter. Strangulated during life. Every side
surrounded by a lake of blood.
Diseases of the pelvic and abdominal organs, or of blood vessels.

Diseases of various organs in the abdomen may either actually produce a pelvic haematocole, or predispose to its occurrence. I do not propose to enter into this subject at all in detail. Blood from an enlarged appendix spleen or from ulceration of the stomach or bowels may find its way to the pelvis. Matthew Dunn relates a case in which a perforating ulcer of the stomach was found; the pelvic swelling however seemed to be mainly inflammatory. (Clin. Lect. 1849). Are a perforating cause disease. If the pies is to be remembered, the importance of the lies and its portal circulation has long been known and insisted on by Pigby and Macleod (Fordyce Barker. Amer. Jour. Obst. Vol. 11. p. 39).
Arteries. If the patient survives long enough after rupture of a pelvic or abdominal aneurysm, the effused blood may form a pelvic tumour perceptible by vaginal examination. The case which occurred under Lee's at Guy's Hospital is a good example (Lit. Proc. J. of Wom. 1853, p. 289.) The pelvis was blocked up by a mass of what felt like malignant disease. The patient lived a few days. This mass was found to be a cavernous tumour caused by rupture of an aneurysm of the right common iliac at the division. In this case the aneurysm was pelvic, but Wells relates a case where an aneurysm of the aorta above the bifurcation had dissected down behind the peritoneum and formed a considerable tumour in the hollow of the pelvis. This tumour was punctured from the vagina and the patient died. (Dr. J. and Dr. H. Med. Tumours, 1885, p. 33.) Tait (An. J. of Med. 1889, p. 473)
says that in searching the literature of the subject he has found one case from rupture of the ovulae ati.

Veins. The veins of the pelvis are arranged in planes, not free communicating and without valves. The congestion which occurs during menstruation is relieved by the discharge of blood from the uterus (so that it is in those cases rare for some reason or other) the discharge is deficient, or obstructed, or suddenly ceases that the greatest strain is thrown on the veins. The safety valve has got out of order, and we wonder that an explosion occasionally takes place? No doubt this is the explanation many of the cases already considered under the head of menstruation.

When congestion has been going
on for some time the vein tend to become varicose. "Congestion on the veins, aside of the circulation lead, to degeneration of tissues of all kind, and the walls of the blood vessels prove no exception." (Skeen, Dis. in Wom. p. 599). The tendons of muscle fibre in the walls degenerate and disappear being replaced by connective tissue. The walls thus weakened are less able to resist a corded strain.

The causes of this chronic venous congestion are various. The influence of the liver has already been mentioned; so has constipation so common in women. The pelvic veins do not escape in the pelvic venous congestion. Such latter, placed in certain forms of heart disease, is often destructive."

"St. George's Hosp. Jnrs., 94th, Haematoma the size of a lining of a large egg-like blood locule. From a woman she died of atrophy of the aniinal-vertebral orifice of the heart."
Position and as lying to sit and all day sometimes appears to have been an important factor in its production, as in the case of Stee's patient a Frenchwoman who suffered from a haematcele and who previously had had to sit and all day long (Stee, D. J. W. and p. 600). Displacement of the uterus may cause it. Inflammation of neighboring tissues may also lead to the walls of vessels and weaken them. After partition the vessels in some cases seem to be long in regaining their normal condition, even in Stone patient. She have remained the regulations time in bed. It is obvious however that constipation of standing all day does not invariably lead to congestion of the pelvic veins, no more than constipation in the male invariably leads to piles so that in some women there must be a lack of tone in the veins themselves rendering them less able to resist deleterious influences.
We have good reason to suspect varicosity of the veins in the broad ligament in some cases of piles, or of veins in the vulva, especially if it extend into the vagina. Occasionally thrombus takes place in these veins and then they, together with inflammatory material round them, may form a distinct tumour. For example in Guy's Hospital, Mrs. is a specimen of a broad ligament greatly thickened by distention of the veins with coagula, 
[2228(70)], and in the following case plugging of the veins with partial coagulation of the stagnant blood seems the most likely explanation. The patient was one of Dr. Clein's out-patients, at St. John's Hospital for Women. I happened to be present when she came to hospital, and Dr. Clein kindly permitted me to examine her, and I take a few notes.

She was 33 years old. Married 11 years, 2 children. Complaints of prolapse of the uterus since the birth of first child.
10 years ago. Her legs in the habit of having a ring pessary. Three months ago she removed a ring which had been in situ for 2 years. Continuously. For 2 or 3 weeks before removal she suffered pain.

Patient inclined to be stout. Abdominal wall fell and flabbily. No history of varicose veins in legs even during pregnancy.

Per vaginam. Ulcer large, partially prolapsed. It might form a small swelling having a reticulated feel, and giving one an indefinite sense of fluctuation. The larger spaces are of such a size that one can just rest the tip of the forefinger in them. Right over pain to rest on top of swelling and be adherent to it. The ulcers quite agreed with me in considering the swelling to be composed of dilated thoracic veins matted & inflamed tendons. The patient was seen for the first time on Feb 28th 1894.
In haematoma formed & the swelling gradually got less.

Many cases of pelvic haematoma, in which varicose of the pelvic veins had previously been suspected or diagnosis, have been recorded.

Winkel figures the varicose condition of the ovarian veins and uterus in his Die Pädi. Weibh. Organe (pl. xxvii, figs. 2 & 3) and states that this condition is frequently met with in post-natal examination (Anns. Syst. of Gyn. and Obst. 1837 Vol. I p. 741).

Bennett & Swain (ibid. p. 172) gives a case of pelvic haematoma in a multipara. Previous to it she had varicose veins of legs and right labium, metritis again, & laparotomy May 1837. She had menstruation early in April and was admitted to hospital where Simpson (ibid. Simpson, Gyn. Worsd. Vol. ii, p. 127) examined a case in which death occurred from rupture of one of the blood vessels (veins?) lying in the
The veins crossing the surface of the ovary may become varicose and bleed from places from them (Schneider in Spix's Cylop., vol. 4 p. 474). The haemorrhoidal veins may rupture so as to produce a pelvic haematome (to J. F. Simpson Op. cit. p. 128). We may therefore conclude that rupture of a pelvic vein is probably a not-unfrequent cause of haematome especially if the situation is a peculiar variety, and more particularly should we consider the possibility of it when the history of the patient points to long continued pressure compaction of the pelvic veins. Winkel has shown that phlebothrobius contained in varicose veins may erode their walls (Pozzi, Spec. p. 156); and Mathes, Ammon advanced the same theory (Clin. Lect. p. 357).
The peritoneum and cellular tissue (including that of the broad ligaments).

Tardeau, Bémont, and others have described instances where the source of bleeding was believed by them to be the general surface of the peritoneum. Prof. Solheim has said that an immense number of cases of retro-metencephalalcele is due to pelvic peritonitis of a haemorrhagic form (Cruickshank in Reynolds' Syst. 1879, p. 789). Virchow supports the theory of the occasional formation of pelvic Labyrinth in a way analogous to that observed in Labyrinth of the dura mater. The mode of production of the latter is still however disputed.

Wigglesworth (Lancet, Feb 25, 1893, p. 481) favours the haemorrhagic origin of this affection; and that pelvic Labyrinth may be produced in this way is a theory not as yet accepted by the majority of the profession.
Panniculitis and cellulitis act, however in other and less doubtfull ways. That the inflammation sometimes spreads to the veins, causing phlebitis and phlebothrombosis and consequent weakening of their coats, it would only be reasonable to suppose from what we know of the causation of phlebitis elsewhere. Fritsch found that in chronic metritis the contents of the blood vessels is matted through connective tissue degeneration of their walls (Hart and Barrows Jr. cit. p. 335). The inflammation also may go on to the formation of an abscess and sub-acute hemorrhage may take place into it cavity. An adhesion may be torn by a sudden exertion, or by traction on the cavity, attempt to replace a vesicle or flask ulcer, (1) or other objects.

(1) The rupture of vascular adhesion may take place and lead to a very acute intrapelvic hemorhage. It is a common matter after forcible replacement of a...
Kaltenbach has seen one case in which rupture of vascular adhesions, interfering with the extension of the sac, was fatal in a case of acute intrauterine gestation. (Certi. t. Gyn. 1889. p. 27.)

A considerable proportion of the recorded cases of pelvic hematocèle have had previous inflammatory pelvic trouble. In the Amer. Jour. Obst. (Vol. xxi, 1888, p. 928) they more relate the case of a patient who had had two attacks of pelvic cellulitis prior to the hematocèle. In the Smith case, since the onset of the hematocèle occurred during menstruation on the patient getting suddenly out of bed, there was a history of old peritonitis. (Amer. Jour. Obst. Vol. xxi, 1890, p. 1078.)

Pryor (Lancet 1865, p. 119) gives a

distorted or displaced uterus for a pelvic mass to quickly form. In our present knowledge it is certain or many of these cases ought to be considered instances of pelvic...
Care that seemed to be a pelvic abscess. After an attack of pelvic cellulitis, there was a large discharge of pus per vaginam. Three days later she suddenly escaped a great quantity of dark-coloured blood. The author conjectured that blood vessels had opened into the sac of an abscess.

In Dr. Fanny Berlin's case of ante-natal uterine haematocele with retroflexion of the uterus, there had been previous paratoniitis (p. 116 thesis). Emmet records a case (Dr. W. on p. 249) which had no connection with menstruation, but occurred in a patient who had had pelvic paratoniitis.

Malignant disease of the peritoneum, associated with a mass in the pelvis and deposits in the liver was found in a case of haematoma recorded by Playfair. (Trans. Obst. Soc. Lond. Vol. XXVI p. 6.)

Malignant disease of the peritoneum seldom occurs without a similar growth being found in one or more of the subjacent viscera, and as Virens pointed out, the organs most frequently concerned are the stomach and ovaries. In this case evidently the ovaries were early implicated.
VII. Trauma apart from Menstruation or Pregnancy.

2 operations involving the broad ligament, pelvic haematocoele is not an uncommon sequel. This complication occurs in 8.9% of all such operations (Gynecology, vol. 5, p. 228). It is due either to the ligament not being properly tied or else to some small vessel that has ruptured. Spencer Wells also believe the less severe forms to be very common. (Barnes, Gynecol. J. 1885, p. 184).

The haematocoele may not come on directly but may be delayed until the first menstrual period after the operation. Stone Keith has remarked that subperitoneal and subperitoneal haematocoele often arise after hysterection at the first menstrual period. (Ed. Med. Jour., 1887, p. 811).

Pelvic haematocoele has followed other operations in which the abdomen has not been opened. Sommier (Prin. and Practice of Gyn. 1880, p. 243)
Had a patient in whom the evident cause of the effusion seemed to be the drawing forward of the cervix a few days before menstruation was due. In this case the veins of the pelvis were probably varicose. The uterus was large and anteverted, the veins of the labia and the haemorrhoidal veins were large. In the same work the author relates a case of extra-pelvic haematoma slowly occurring after the removal of a mucous polypus. He attributes it to old pelvic cellulitis disturbed by the operation.

Mac Kaugton Jones, (Sir J. W. C., 1888 p. 297) has known a case in which a large retro-uterine haematosede occurred rapidly in a patient over 60 from a fall of a chair.

A blow on the abdomen has been known to cause rupture of the vagina (Lancet- Mar 4th, 1893); but the uterus and vagina almost-always escape injury when the violence is applied to
The external genitals (Gutteridge, *Lancet* Oct 31st 1846 p. 476.), and in those cases in which a foreign body enters the vagina and is forced through the posterior fornix perineum in the seminal omentum, the loss of blood being often slight.

Into the discussion of effusion of blood from wounds of the uterus I do not propose to enter. It is not easy in an injury to the abdomen to determine the source of blood, previous to operation or post-mortem examination. The pelvic cavity is the most likely place in which to find evidence of extravasated blood or other fluid. As Taylor puts it (*Prin. and Pract. of Mid. Journals* 1883, p. 677) "For the discovery of extravasated liquid or blood, in wounds and other injuries,"

R. F. S. Eng. Mvr. No. 4673. Specimen showing perforation through which candle had been thrust into peritoneal cavity.
to the abdominal viscera we must look to the cavity of the pelvis; as it is here that for obvious reasons such fluids have a tendency to collect."

A similar opinion is expressed by Schroeder, who finds that "The pool of blood .... always fills the region of the pouch of Douglas since both in the erect and recumbent posture this forms the most dependent part." (Lemm's Cyclop. Of the Practice Of Medicine vol. vii p. 470.)
Conclusion. By far the greater number of cases of pelvie haematoscele is due to ectopic gestation either by rupture of the cyst, in which case the haemorrhage usually occurs suddenly and if intra-peritoneal to a great, often fatal, extent, or by uterine abortion when the bleeding is insidious, always intra-peritoneal, not rarely limited to the pouch of Douglas in which it may form dense clots, or the ostium of the tube may open into a cyst-like structure, the wall of organised clot, the cavity containing fluid blood.

When a previously healthy woman misses one or more periods, then has a haemorrhagic discharge, with pain, and perhaps the history of a decidua being passed, and is

"R. E. S. Enz: Cyst-like structure, wall of organised clot, cavity containing fluid blood. Ostium of tube opened into it. Specimen 7245847."
subsequently latter with acute abdominal pain, fainting and other symptoms of internal hemorrhage, these facts are sufficiently strong to justify a diagnosis of bleeding from an extra-uterine gestation, and if the symptoms are severe, or if they recur at short intervals they demand operative interference without delay.

Next in frequency I would be inclined to put rupture of a varicose vein. I believe small blood effusions from this source into the broad ligament are comparatively common, sometimes giving rise to little or no trouble, perhaps being only discovered on death from other causes. (Spec. 34. A St. Ed's Hosp. Mss. p. 123. thesis.) If the patient has been troubled with varicose veins elsewhere, or if she suffers from long-standing displacement of uterus, or symptoms of chronic venous congestion of the pelvis, this cause must always be thought of.
The other cases are much rarer and my ideas concerning them have been sufficiently indicated during their consideration.

My thanks are due to Dr. Wheaton for allowing me to examine and report his case, to the curators of the various museums for their unfailing courtesy, to Dr. R. T. Smith and James Selway of the Hope for Women, and to Bland Sutton and other gentlemen for information regarding cases which have come under their care.