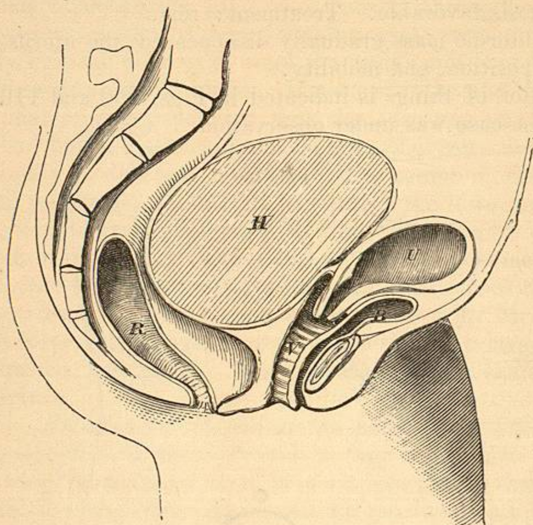
percussion is uninterrupted from umbilicus to pubes. *Per vaginam:* fundus vaginæ depressed, the posterior wall bulging forward from pressure of a semi-elastic mass behind and above; the cervix and os uteri are pressed down and forwards close to the pubes; the os is flattened to a

Fig. 110.



Sectional View of the Parts (R. B.).

H. The hæmatocele fills the space between the uterus and the rectum, and descends into the pelvic cavity. U. Uterus. B. Bladder. V. Vagina R. Rectum.

narrow chink. The sound—an elastic bougie—passes three inches forwards and upwards towards the umbilicus. *Per rectum:* a semi-elastic rounded mass is felt filling the hollow of the sacrum.

Diagnosis: pelvic hæmatocele following abortion. Treatment: rest, opiates.

In February, 1869, I received the following account from Mr. Garman: "Soon after your last consultation with me Mrs. B. passed a large quantity of blood *per rectum*, which very much relieved her. The womb has gradually assumed its proper position. The catamenia appeared for the first time ten days ago, and lasted the usual time, five days, a healthy and natural discharge. She is now convalescent."

Group V. Menstrual disturbance or difficulty, leading to effusions of blood into the peritoneum.—This group includes by far the largest proportion of cases. At the same time the danger is usually less, and the symptoms are not so severe. It may be stated as a general rule, that whenever there is any impediment to the free discharge of the menstrual blood by the natural route, if the quantity of blood exuded in the uterine cavity be excessive, or suddenly increased by accident, by emotion or other causes, escape may take place by the Fallopian tubes into the peritoneum.

We thus get sub-groups containing—

1. Cases of probable very early Fallopian gestation and escape of ovum into the peritoneum.
2. Cases in which there existed a mechanical impediment to the natural escape of the menstrual blood.
3. Cases in which there was disturbance or interruption of the menstrual flow from—
   a. Cold and over-exertion.
   b. From emotion.
   c. From excessive sexual intercourse.
4. Cases in which the hemorrhagic character of the blood was increased by disease.

Nélaton and Laugier insisted that a great cause of hæmatocele consisted in the physiological work of ovulation, blood being poured out from the ovary at the seat of rupture. They enforce this theory by observations which show that in many cases the first appearance of the hæmatocele coincides with a menstrual epoch; that it is especially at the return of the menstrual epochs that the gradual augmentations of the hæmatoceles take place; that the pain of menstruation and hæmatocele have the common character of pain in the side of the pelvis, where ovulation takes place; and that the rut in animals may cause an ovarian congestion followed by rupture of this organ, that is to say, accidents similar to those of retro-uterine hæmatocele.

Gallard[1] gives another explanation of catamenial hæmatocele. He contends that Laugier has exaggerated the importance of ovarian congestion in putting it forward as the principal cause. It is true, indeed, that it always acts, but by itself it is incapable of producing a hæmatocele. Gallard, not denying the efficacy of other causes, insists that the principal cause of spontaneous hæmatocele is the dehiscence of an impregnated ovule. According to this view these hæmatoceles should be regarded as true extra-uterine gestations. This theory would, to a certain extent, explain the frequency with which hæmatoceles are caused by coitus. Trousseau even thought that in these mild cases of menstrual hæmatocele there was no peritonitis; such is their benignity. They are almost indolent. But Bernutz describes a case in which the hæmatocele became encysted in thirty-six hours.

Dolbeau, again, says retro-uterine hæmatocele is a grave complaint, but is rarely fatal. A case related by Sireday which occurred under the observation of Aran proves that the blood may coagulate in the pelvic region without setting up peritonitis at all. This woman presented symptoms of intra-abdominal hemorrhage, but no trace of retro-uterine tumor could be detected by internal examination during life. Again, experience of ovariotomists shows that blood may be effused into the peritoneal cavity without exciting inflammation.

Dissections demonstrate that adhesions binding the uterus to the rectum and neighboring parts may last for a considerable time, and that these remains are marked by pigmentation from hæmatoidine. In one case—

[1] Mémoire sur les hématocèles peri-utérines spontanées, 1858.

it is recorded in this chapter—the fundus uteri was tied down in retroversion for some months.

The blood may flow back from the uterus and tubes, and escape by the abdominal opening of the tubes under various conditions. The chief of these are obstruction of the tubo-uterine canal, and sudden excessive effusion of blood into the tubes and uterus, so that the whole is unable to flow onwards by the vagina and vulva.

The most indubitable cases of obstruction of the tubo-uterine canal are those of atresia, congenital or acquired, of the vagina or cervix uteri. They have been described by Bernutz; and are discussed in this work under the head of "Atresia." The blood escapes into the peritoneum either by regurgitation by the abdominal end of the tube, or by the bursting or perforation of the tube. Ruysch, Haller, and Brodie, all believe that blood, menstrual or lochial, could flow back from the uterus into the peritoneum. Trousseau held the same opinion. Basing upon his aphorism that "all physiological blood comes from mucous membranes," he contends that the blood in metrorrhagia and abortion is simply blood in excess from the same source. Copious exudation of blood from the mucous membrane of the uterus and tubes, appearing as metrorrhagia, is, indeed, one of the most constant facts in the history of the affection. Where this outpouring of blood is in excess of what can be readily discharged by the vagina, it is easy to understand that some may be driven back by the tubes. The mechanism by which this is effected, is probably the same as that by which I have explained the propulsion of fluids injected into the uterus along the tubes. The uterus being suddenly irritated by the invasion of a quantity of blood beyond its capacity to tolerate, contracts spasmodically, and the fluid blood is propelled towards all the three openings from its cavity. This is borne out by the history of cases. The origin of hæmatocele is often marked by the initial fact of a strong emotion, or physical shock, producing a sudden afflux of blood to the pelvic organs, followed by intense uterine pain, and then by pain of wider diffusion. Bernutz's thory of *reflux* is essentially similar to the above. The case quoted at p. 517 from Olshausen is a good illustration.

But obstruction and retention of menstrual fluid need not be complete in order to lead to retrograde escape by the Fallopian tubes. In the chapter on "Dysmenorrhœa" I have drawn a comparison between cases of complete and incomplete retention, showing that the difference between them is one of degree rather than of kind. Similar consequences may be expected to attend upon similar physical conditions. Accordingly we find that the narrow os externum uteri, which is so frequent a cause of dysmenorrhœa by retention, may lead to pelvic hæmatocele.

Trousseau has further expressed his opinion that obstruction from retroflexion of the uterus may lead to hæmatocele.

The following case seems to me to be one of retrograde flow from stenosis of the uterus: In August, 1871, I saw, with Mr. Cass, a young lady who had had no child, but who was said to have had an abortion. She had been losing blood for a month. When under exposure and fatigue from travelling, and there was reason to conclude also from undue sexual excitement, she was seized with pain in the pelvis which rapidly

increased. This was followed by retention of urine. When we met this had lasted three or four days. The pulse was 100, there was pain on pressure above the symphysis, and in both groins. There was an area of dulness on percussion, and of firm tumefaction rising to the level of the umbilicus, and extending into either iliac fossa. The uterus was pushed close behind the symphysis, the sound passed forwards, demonstrating that the fundus projected about two inches above the symphysis pubis. The os was small, the cervix conical, presenting the characters usually associated with dysmenorrhœa and sterility. Behind the uterus, occupying the brim of the pelvis, and extending into the hollow of the sacrum, was a smooth elastic swelling. This was also felt by rectum. She had been leeched, and there was a blister on the abdomen. There had been vomiting. Constipation. Diagnosis: retro-uterine hæmatocele, and consecutive pelvic peritonitis. We agreed upon sedatives and rest, and to puncture the tumor if the pulse rose. On the next day she was sensibly worse; there was more pain in the abdomen, and more diffused pain came on rather suddenly. The bladder now seemed relieved from pressure, for the urine was passed spontaneously, and the tense fluctuating mass behind the cervix uteri was lessened. The uterus, in fact, was found less tightly jammed against the symphysis. The pulse was 130; respiration, 36; temperature, 102° F. The symptoms indicated a fresh shock; and as the tension of the tumor was less, we did not use the trocar as contemplated. Under opium, the pulse respiration and temperature went down next day, and she was altogether easier. At this time I was absent from town, and Mr. Cass subsequently gave me the following report: "The tumor and symptoms subsided greatly, when on the 20th, menstruation impending, fresh swelling and great pain set in, and Mr. Spencer Wells saw her. He punctured by the vagina; a pint and a half of fluid blood flowed; the canula was kept in. For three days the discharge went on. When the canula was removed there was great pain. The swelling and pain again subsided, and after a long illness she recovered."

Under the hyperæmic turgescence attending the onset of the first ovulation and the attendant menstrual flux, there is a rapid transudation of blood from the mucous membrane of the uterus. This organ, comparatively immature and unused to the duty it is called upon to perform, does not readily expand to accommodate the blood poured into its cavity, and which is retained by an imperfect development of the cervix from being discharged by the natural outlet. There is constantly reflux along the Fallopian tubes, hæmatocele, and peritonitis. There can scarcely be a doubt that this is the explanation of some, at least, of those apparently obscure attacks of peritonitis which sometimes seize young girls at their entrance upon the ovarian epoch.

The following case of menstrual hæmatocele was observed to the end under such favorable circumstances as to furnish a good clinical illustration. L. H., aged thirty-five, was admitted into my ward with retention of urine on the 1st of October, 1871. She has had four children and one abortion. The catamenia have been irregular for eighteen months. There is now metrorrhagia. The uterus is driven forwards behind and above the symphysis by a mass behind which fills the pelvis. The os

uteri is wide, gaping; the sound goes three inches above the pubes. The mass is fixed in the brim of the pelvis, projecting somewhat above the plane of the inlet. Her history is, that five weeks ago, having been menstruating three days, she was seized one afternoon with intense pain in the lower part of the abdomen. She kept her bed ten days, then became an out-patient until her admission. Early on the morning of the 7th a considerable flooding occurred. The pulse was weak, 74, temperature 99.5° F. After this the bladder was relieved naturally. On examination I passed a sound three inches through a hole I felt in the upper part of the vagina, behind the uterus; the point moved freely round. It was in the cavity of the hæmatic cyst. By speculum we saw the hole, and blood oozing from it. From this time she continued to improve; the tumor lessened rapidly in bulk; so that on the 24th there was very slight discharge, the opening had nearly closed, and the uterus had retreated to its normal position. She was again made an out-patient; and we had several opportunities of seeing the scar left by the healing of the opening by which the blood-tumor had discharged its contents. The uterus continued bound down in retroflexion for some months. The adhesions were gradually overcome by wearing a Hodge-pessary. I have since seen several similar cases equally complete.

Several curious examples have been recorded of hæmatocele resulting from dilatation of a tube where there was a double uterus. M. Decès relates a case of double uterus and vagina, in which the left vagina was imperforate; there was accumulation of menstrual blood, consecutive dilatation of the left uterus and tube, and death from rupture of the tube.

Group VI. In which the hemorrhagic disposition is increased by disease.—The influence of variola, as of other zymotic diseases, in disposing to hemorrhage is well known. Where there is a normal hemorrhagic molimen, as from the uterus and tubes during menstruation, if a zymotic disease supervene, the normal flow is apt to become hemorrhagic. Barlow published a case of pelvic hæmatocele supervening on purpura (*Edinburgh Monthly Journal*, 1841); Scanzoni one of hemorrhage arising during measles. Hélie and Laboulbène describe cases, the first of variola, the second of scarlatina, in which large clots were found in the uterus, and the Fallopian tubes were distended by blood coming from the uterus; but there was no blood in the peritoneum. These two cases are cited by Bernutz to show that the blood forms in the uterus, and may flow back into the peritoneum. The hemorrhagic tendency induced by smallpox is illustrated in a case related by Bouillaud. A patient in La Charité, suffering from modified smallpox, was seized with alarming hemorrhage, when the catamenia returned three days after the eruption. I have seen a case in a young lady suffering from modified smallpox. The fever was severe. She was menstruating when seized. Next day she was attacked suddenly with the most acute pelvic and abdominal pain. Peritonitis and tumefaction followed, and she was for some days in a critical state. I have little doubt that in this case the cause of the peritonitis was blood-effusion into the peritoneum. The case is of interest in this respect. Had the symptoms which attended the effusion in this case come on in the course of typhoid fever they would almost certainly have been taken to indicate perforation of the intestine. Is it not possible that such an error has been made?

Bernutz relates a case of hæmatocele from acute jaundice in a pregnant woman. When we reflect upon the extreme hemorrhagic tendency which marks this dire disease, we cannot be surprised that hemorrhage should take this form.

In the menstrual cases it is clear that fresh effusions into the peritoneum take place at successive menstrual epochs, producing temporary exacerbations of the local symptoms. In these cases it is probable that the subsequent effusions do not always take place into the cyst formed around the primary hæmatocele, but outside it, so as to cause fresh peritonitis. Hence those several collections of blood, divided more or less by fibrinous septa, which are sometimes found where there has been the opportunity of making a post-mortem examination. In the case related as attended with Mr. Cass the menstrual exacerbations were clearly observed. (See p. 527.)

A remarkable example of menstrual hæmatocele is that which results from *effusion of blood from the stump of an ovarian cystic tumor*. This event has been discussed in the chapter on Ovariotomy.

Dr. Playfair relates (*Lancet*, 1856) a very interesting case, in which a *pelvic abscess* appeared to be the cause of hæmatocele. Following on pelvic cellulitis there was a large discharge of pus by vagina. Three days later there was a sudden escape of a great quantity of dark-colored blood, the coagulum of which filled one-third of an ordinary-sized chamber vessel. She eventually recovered. He conjectures that bloodvessels opened into the sac of the abscess.

There are observations to show that the blood may flow from *a varix of the broad ligament*. The vessels belonging to the ovary may become varicose, and under pressure of unusual distension they may burst. Richet and Ollivier d'Angers adduce evidence in point. Burnutz points out that in cases of hæmatocele from varix the accident comes on, not at a menstrual epoch, but after fatigue, which causes distension of the varix. It is certain that varix of the pampiniform plexus, and of the plexuses about the vagina and vulva, may result from pregnancy and complicate varices of the veins of the legs; and there are several examples known of a varix of a leg in a pregnant woman bursting, the accident proving rapidly fatal. I have myself known such a case. Richet especially describes hæmatocele as taking its source in rupture of varices of the ovarian or sub-ovarian veins. In these cases the loss of blood has been so rapid and profuse that no time has been allowed for it to become encysted. These, then, will swell the cataclysmic order of cases; and by their clinical history link hæmatoceles of ovarian origin with those proceeding from rupture of extra-uterine gestation-sacs. We may then conclude that hæmatocele from varix is possible; but observation shows that it is rare.

Dr. Tuckwell records a case related to him by Seyfert in which the blood came from the *rupture of a tubal vein*. A maid-servant, aged eighteen, while carrying a large vessel of water on her back, upset it and received the whole of its contents over her back and shoulders. She fell down suddenly and died rapidly. The occurrence took place at the time

of the catamenia. The autopsy disclosed an immense mass of blood in the sac of the peritoneum. One of the veins of the left tube was found to be ruptured, and a small opening in the layer of peritoneum that covered the tube had allowed the blood to escape into the abdominal cavity.

One source of blood-tumor has been put forward on great authority as common. Virchow affirms that the *blood exudes from the delicate new-formed vessels of iaflamed peritoneum;* that is, in fact, that there has been antecedent peritonitis. Tardieu relates two cases in which he concluded that fatal hemorrhage came from the peritoneal surface. Bernutz, however, does not admit that these cases prove the existence of a hemorrhagic pelvic peritonitis. Schröder goes so far as to affirm that a tumor caused by a collection of blood, which can be felt in the vagina, can only arise where a cavity is pre-formed for it; that is, when Douglas's sac is first closed above by a partial adhesive peritonitis.

I cannot help agreeing with Ferber, who objects that this pre-formed cavity is a pure hypothesis. But one cannot dispute a proposition made by a pathologist so rich in experience and sagacity as Virchow without misgiving. If, however, I might venture to interpret my own observations, I should be compelled to conclude that the peritonitic source must be extremely rare; and that the general opinion, which declares the peritonitis to be secondary, not primary, is correct.

Dr. L. Aitkin reports a case (*Edinb. Med. Journal*, 1870) in which a hæmatocele seemed to be caused by *the use of a laminaria tent.*

The influence of coitus has been specially treated by French authors. Thus Voisin says that of ten cases in which the commencement was traced to a menstrual period, in seven coitus had taken place, either during menstruation or shortly after, and pain began during the sexual act. Aran relates a marked case of the kind. In one instance observed by myself, I have little doubt this cause was an essential factor. In the other three cases of Voisin, cold, fatigue, or violence during menstruation seems to have determined the attack.

Group VII.—I have seen cases in which there was reason to believe that hemorrhage was caused by *injury to the abdomen.* In these cases of direct violence it is not easy to determine the source of the blood effused unless a post-mortem examination be made. Should the patient be pregnant at the time, the commotion will be likely to determine hemorrhage from the uterus or ovaries. Of course, the nature and extent of pelvic and abdominal lesions inflicted by violence are infinitely various. When a student at St. George's Hospital, I saw a case under Dr. Wilson of rapid death that ensued from the *bursting of an aneurism of the superior mesenteric artery.* The blood poured out was in great quantity; it was diffused all over the intestines. There was no attempt at cystic segregation.

The Symptoms and Diagnosis.—The great variety of causes and sources of blood-effusions into the peritoneum which we have passed in review, renders it manifest that we cannot lay down any concise general summary of symptoms. Perusal of the cases narrated in this chapter, and comparison of the features characteristic of the several groups into which I have arranged them, will convey the best idea of the significance

of the symptoms. The cases I have pointed out may be broadly divided into two great classes: 1. Those in which an overwhelming shock attends a sudden and profuse loss of blood. This is the *cataclysmic* class. These cases generally coincide with the *non-encysted* class, the great majority of which end fatally. 2. Those in which the shock is less pronounced, in which the effusion is less profuse and less rapid, in which general and local signs of inflammation supervene. These form the *encysted* class, a large proportion of which end in recovery.

The history of the first, or cataclysmic class, is almost wholly comprised in that of rupture of the uterus, of extra-uterine gestation, and of ovarian disease. I will not dwell upon it here.

The history of the second, or encysted class, presents features admitting of being defined with great precision. It must not, however, be lost sight of that effusion resulting from menstrual regurgitation, although usually falling within this second class, may be cataclysmic.

In the *encysted cases*, the history may commonly be told in three chapters. 1st. There is shock and pain referred to the pelvis and lower abdomen, and anæmia. 2d. There are signs of reaction, of fever, and pain indicating peritonitis, and usually attended by evidence of mechanical obstruction, as of the bladder. 3d. There are the signs attending the disposal of the blood-mass and the inflammatory deposits.

1. A woman within the reproductive period of life, during a menstrual period, usually profuse, after being exposed to cold, fatigue, or sexual excess, is seized suddenly with pain in the pelvis. This is attended by shock, inducing more or less collapse, according to the suddenness and profuseness of the loss, and the susceptibility of the patient. The surface becomes cold, the face pale, the pulse falls; perhaps there is syncope: there is usually vomiting. If the loss be extensive, the signs of hemorrhage, of anæmia, are added. But it must be remembered that these initial symptoms are not constant. Some cases begin insidiously, no striking event marks the beginning.

2. In the second stage, the signs of reaction appear. The pulse rises, the skin becomes warmer. There is felt a sense of warmth or burning, with distension of the lower abdomen. The pain persists. Frequently retention of urine occurs, and constipation follows. Menorrhagia commonly goes on. The rectum shows signs of irritation, a dysenteric condition is observed, marked by tenesmus and muco-sanguineous discharge. But this is not constant.

Examination of the abdomen usually reveals more or less enlargement and tenderness. The enlargement is in the form of a rounded swelling rising out of the pelvis towards the umbilicus, and stretching towards either ilium. In several cases the tumor has risen quite as high as the umbilicus. Examination by the vagina reveals conditions closely resembling those characteristic of retroversion of the gravid womb at the third or fourth month. The finger cannot proceed towards the hollow of the sacrum because a rounded tumor occupying that space pushes the posterior wall of the vagina forwards, altering the direction of this canal; following this, the finger is directed upwards and forwards, behind and above the symphysis pubis; and usually closely compressed against the symphysis just behind it, or a little below its level, the os uteri is felt.

In cases where the cervix is soft, and the os large, this may be flattened out into a narrow transverse chink. The finger may be able to penetrate by pressure in front of the vaginal-portion, and also on either side; but the tumefaction is almost continuous with the posterior margin of the os uteri, seeming to form one with the uterus, and thus closely simulating the physical signs of retroversion. In the early stage, the tumor feels soft and fluctuating, but it soon becomes more tense, less resilient, and may eventually become quite solid. The solidity depends partly upon coagulation of the blood-mass, but more especially upon the formation of plastic effusions, the product of the peritonitis excited to segregate it.

Before removing the finger from the vagina, examination should be completed by catheter and sound. The use of the catheter may be indicated by retention of urine. Retention of urine, however, is not constant. It is especially wanting in those cases where the blood-tumor is more lateral—that is, in a broad ligament. When the bladder is emptied, the way is cleared for further precise observation. The os uteri is felt of a characteristic form. It is flattened transversely by the jamming it undergoes against the symphysis pubis. The finger resting upon the os uteri or in front of it, is opposed by the fingers of the other hand applied to the abdomen, just above the symphysis. Between them the body of the uterus may usually be traced, since the fundus is driven forward so as to project above the pubic symphysis (see Figs. 108, 109). This is made quite clear by the use of the sound. Passing this instrument into the uterus, it is found to penetrate upwards and forwards for the normal length of two and a half inches, or usually more, the point being carried directly over the symphysis. And now abdominal palpation is repeated with more advantage. The uterus supported on the sound, is felt by its fundus; pressure by the fingers upon this portion imparts a movement which is plainly felt by the hand which holds the sound. Thus no doubt remains as to the position of the uterus. We know for certain that the softer, semi-fluctuating, or even, it may be, solid mass behind the cervix, is not the body of the uterus. Its rapid appearance under symptoms of shock, the quickly succeeding signs of local pressure and distress, tell us with great certainty that it is not a fibroid tumor, or an ovary, or an inflammatory effusion; and the knowledge derived from pathological studies tells us that only blood-effusion can produce a tumor in this situation, ushered in by the circumstances, and attended by the local conditions described. Examination by the rectum carries the diagnosis to still further precision, and usually the swelling is more marked, and comes lower down on the left side. The finger is immediately met by the rounded, more or less yielding swelling; by this, the finger is directed backwards along the sacral hollow; and it is rare that it succeeds in getting above the tumor, or even beyond its equator; the sensation imparted by the tumor differs from that of the retroverted uterus by being less solid. In the slighter cases of menstrual hæmatocele, when the amount of blood poured out is moderate, Douglas's pouch may be well filled, it will displace the uterus forwards and downwards; but there may be no tumefaction felt above the pelvic brim. But in some cases, the swelling, if not early, still in the progress of the case, rises to various points above the level of the symphysis, even as high as the umbilicus. In these

cases, it may be possible, with or without the help of the sound *in utero*, to make out the round hard fundus of the uterus distinct from the larger tumefaction of the encysted hæmatocele. This is illustrated in Fig. 109.

The enlargement of the tumor is not so often effected by continuous gradation, as by sudden starts. At every menstrual epoch, there may be a fresh increment, due to renewed hemorrhage. This event is marked by reproduction of the symptoms described in the first series, by exacerbation of distress.

3. As the case proceeds, the general and local signs undergo some modification. Pain usually persists, although it may be moderated. In cases tending to spontaneous cure, irritative fever subsides; the pulse may fall to 100, or less; the temperature to 100° Fahrenheit, or less. Usually some degree of tenesmus continues. More or less metrorrhagia is common. As the tumor lessens in bulk, under the absorption of its fluid elements, the uterus retreats a little towards the middle of the pelvis, relieving the bladder. Still the uterus is immovable; and behind it there is still the tumor.

Dolbeau (*Medical Times and Gazette*, 1873) thus accurately describes the course of the affection:—

"The different phases through which the encysted sanguineous tumor passes are revealed by signs, which must be searched for with the greatest attention. The induration and progressive diminution indicate that recovery is taking place. On the other hand, when seven or eight days after the accident you can certify that the tumor has become soft and fluctuating, you may be quite sure that the tumor is retrograding, and will empty itself externally. When, in addition to the softness which persists, fever adds itself to this symptom at the end of the day, with a real elevation of temperature, shivering, night sweats, and a great dislike to all kinds of food, you can be sure that the hæmatocele is going to suppurate; and this is a most important point to know beforehand, often indicating surgical intervention, to obviate septicæmia.

"Generally the tumor diminishes in size as it becomes harder, and as it approaches recovery. But in some cases, after improving for three or four days, a relapse takes place; the tumor, which seemed to be getting gradually less, suddenly increases in size, and at the same time grave general phenomena are observed. After this interruption, the symptoms rapidly ameliorate. . . . Now, in most cases, the menses influence this retrocession in a curious manner. Women suffering from this complaint are quite regular, the menstruation being scarcely deranged. In all cases, from the moment the catamenial flux commences, a most sensible diminution takes place in the size of the tumor."

The tumor may disappear by absorption, by perforation through the roof of the vagina, by perforation into the rectum. These issues are the normal methods of spontaneous cure. But the blood-mass may undergo a process of suppurative or decomposing liquefaction, setting up septicæmia and irritative fever. Hæmatoceles undergoing this or other change, distended by fresh effusions, under violence or without, may burst their cyst, and throw out the contents into the general cavity of the peritoneum. This issue is rare, but cases have been recorded. It is of course attended by fresh signs of abdominal injury and shock, and is

likely to be quickly fatal. Dr. West records a case. Tuckwell relates the following on the authority of Seyfert: A woman, in whom retro-uterine hæmatocele had been diagnosed, was frightened by a patient in the next bed being seized with convulsions. She sprang out of bed, and at the same moment felt a violent pain in the abdomen, which was followed by rigor and collapse. Three days after this she died. The general cavity of the peritoneum was found filled with bloody fluid, the blood having escaped from a sac situated behind the uterus, which sac had burst. The sac was formed by adhesions between the rectum on the one hand, and the uterus, right tube, and ovary on the other. It contained a quantity of blood, part fluid, part in clots, in a state of decomposition. The right ovary, of the size of a hen's egg, and filled with clotted blood, was easily recognized, and was found to have burst and discharged its contents into the cavity of the cyst.

Dr. Matthews Duncan relates a case (*Edinburgh Medical Journal*, 1864) of extra-uterine gestation, in which signs of rupture occurred at two and a-half months of gestation, followed by formation of hæmatocele. A month later, signs of fresh rupture appeared, and death followed in thirty-six hours. Autopsy revealed a tumor the size of a very large orange, between the sacrum and uterus, which contained a fœtus of less than two months' development, and clotted blood. A rupture of considerable extent had taken place in the anterior wall of the cyst.

Dr. Breslau, of Munich, relates (*Mon. für. Geburtsk.*, 1857) a case diagnosed as rupture of a hæmatocele, followed by recovery. The hæmatocele, which had been made out before, quite disappeared after signs of rupture.

The specimen described from St. Bartholomew's Museum also may be referred to as illustrating the termination by internal rupture of the blood-tumor.

In some cases, the intra-peritoneal perforation seems to be dealt with like the original effusion, by a fresh conservative peritonitis, which surrounds the new effusion of blood. Accordingly, in some cases, Dr. Madge's is an example, the blood-sac seems divided into two by a septum.

Two cases have been recorded, one being that of Dr. Madge, and another by Bernutz, in which phlegmasia dolens of one leg was developed in the course of the affection.

The proportion of cases which disappear by absorption is hard to estimate. It can scarcely be doubted that in some cases assumed to have terminated in this way, an opening was really effected into the vagina or rectum, very small, perhaps, but large enough to admit of slow evacuation of the hæmatic cyst. The process may be so gradual, that the moderate rectal or vaginal blood-discharge is not suspected to come from the cyst. In other cases the discharge by rectum or vagina is manifest enough. At a variable time, ranging from two weeks to two months, or more, blood escapes in one solid mass, or in small coagula mixed with fluid portions over several days.

Dr. Willoughby Wade conjectured that in some cases the blood-tumor liquefying discharged itself by the Fallopian tubes and uterus. But distinct evidence of this is wanting. As we have seen, a sanguineous discharge from the uterus and vagina is common; but it may be the

expression of the general congestion or turgidity of the uterus. It is not evident that it comes from the cyst in the way Dr. Wade suggests.

In some cases the symptoms are essentially the same, but the general and local distress is less intense. The pain is slight, the fever moderate, the effusion is seldom large enough to be felt above the pubes. A few days, or at most a few weeks, suffice for recovery, the tumor disappearing almost as quickly as it came.

All the best observers recognize this order of cases, and hold them to be not infrequent. Of the truth of this I am firmly convinced. There seems no valid reason to doubt that small as well as large quantities of blood may be effused into Douglas's pouch; and there is ample evidence to prove that small quantities of blood may give rise to only slight irritation. If, as Tuckwell says, the objection be urged that as they do not terminate fatally, and are not large enough to necessitate puncture, the presence of blood as the cause of the tumor is merely conjectural, it may be answered that their close resemblance to the more pronounced cases, the nature of which is unmistakable; the position of the tumor; and the rapidity with which it is absorbed, are sufficient to justify the diagnosis. Those who reject all evidence except that furnished by dissection, or by puncturing the tumor, shut themselves out from the possibility of instruction by clinical observation and reasoning.

In the milder order of cases, and in those which end by discharging through the rectum or vagina, the sac itself formed by peritonitic effusions has to be absorbed. This is effected more or less rapidly and completely.

In that order of cases in which the blood-mass undergoes disintegration, the symptoms of irritative fever supervene. The aspect becomes sallow, earthy. The temperature and pulse rise; rigors, vomiting, sweats appear; and, unless a vent be found for the imprisoned matter which is poisoning the system, the patient will be in great danger of sinking. There is commonly a complication with unhealthy peritonitis. The abdomen becomes more tense, tympanitic, and painful.

The *diagnosis* flows from the appreciation of the symptoms described. It may be affirmed with confidence that nothing else but a hæmatocele will produce them in their aggregate or cumulative character. The conditions most likely to lead to error are:—

1. *Retroversion of the gravid womb.*—This is the error I have known most frequently made. The distinction is made out by the physical exploration described above; by the history of pregnancy when there is retroversion; and by the absence of the fundus uteri from the pelvic brim or from the abdomen above the symphysis.

2. *Fibroid tumor.*—The presence of the body of the uterus in its normal place, or at any rate its being made out separately from the tumor under investigation, distinguishes fibroid from hæmatocele. The history of the two cases is essentially different. The fibroid is of slow growth; the hæmatocele of rapid or sudden growth.

3. *A small ovarian or dermoid cyst* locked in the hollow of the sacrum behind the uterus. By the unaided physical exploration, it is sometimes difficult to bring out decisive differential signs. A small ovarian tumor is fluctuating, elastic, occupies exactly the position of a hæmatocele, dis-