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Intraperitoneal Hæmorrhage in Cases of Fibromyomata of the Uterus.*

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THE following following case of intraperitoneal hæmorrhage from ruptured varicosity of a superficial vein on a uterine myoma recently occurred in the writer's hospital practice.

The patient was a single woman aged 31, who had always enjoyed good health until the early part of 1910. Three months prior to April 2nd abdominal discomfort and swelling were complained of, and the patient began to suffer from what she termed "bilious attacks." On the morning of March 23rd the patient hurried to the railway station and entered the train. Shortly afterwards, severe abdominal pain began and became so acute that the patient was compelled to leave the train at its first stopping place. After walking for five minutes she vomited, and then managed to get home to bed. On the following day she felt weak, but managed to get about as usual on that and subsequent days until April 2nd. At six o'clock on the morning of that day she wakened and sat up in bed to consult her watch. Immediately severe abdominal pain came on, most acute in the umbilical region, and vomiting occurred. The patient remained in bed all day, vomiting whenever the slightest movement was made, but at no time was any faintness experienced. At 5 p.m. her medical attendant saw her, and realising the serious nature of the condition, sent the patient at once into hospital. On admission to the Hospital for Women the temperature was normal and the pulse rate 76. The patient was naturally pale, and her mucous membranes were not blanched. A hard, rounded swelling occupied the lower part of the abdomen, lying more on the right than the left, and reaching $3\frac{1}{2}$ inches above the pubes. The whole abdomen was tumid and tender, the tenderness being most marked over the tumour. Per vaginam, the cervix lay far back, its tip being

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only just accessible to the examining finger: nothing more could be felt in the pelvis. On April 4th the temperature was about a degree above normal and the pulse rate varied from 94 to 100. The abdomen was more swollen and tender and the tumour reached a point seven inches above the pubes. No satisfactory bimanual examination was possible on account of the tenderness and resistance. There was nothing in the menstrual history to suggest any uterine condition, the catamenia having always been 5-28: regular: moderate flow: a good deal of pain. The last period had ceased on April 1st.

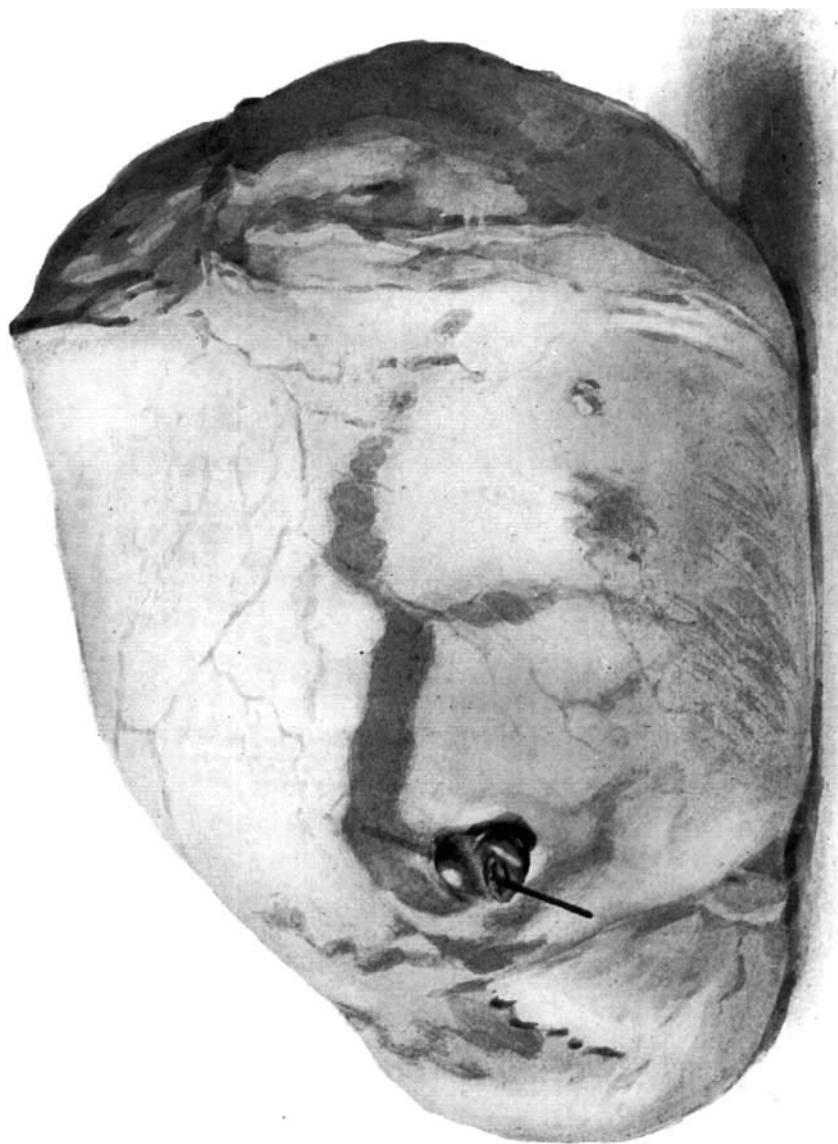
Provisional diagnosis: ovarian tumour, probably a dermoid cyst, the pedicle of which had undergone torsion.

April 5th. Laparotomy. A pale, reddish-grey tumour was exposed: it was solid and sprang from the posterior wall of the uterus. A good deal of dark red blood was free in the peritoneal cavity, the total amount being about 6 or 7 ounces. There was no injection of the peritoneum. On exploring the tumour it was found to be sessile on the entire posterior uterine wall: towards the left side of its upper aspect was felt a small nodular projection to which at the time no further attention was paid. Myomectomy was performed and the uterus reconstructed.

So far, the source of the bleeding had remained undiscovered, and careful search was now made for it. Every part of the abdomen was minutely explored but without finding out whence the bleeding came, the uterine appendages were normal, and there was no recent corpus luteum. Finally, as the mystery remained unsolved, the abdomen was closed and the patient sent back to bed. It was only now, whilst handling the tumour, that the origin of the bleeding became clear. Mention has been made of a small projection on the otherwise smooth, rounded surface of the fibroid: whilst examining the tumour, blood was noticed to be oozing from this projection. Closer investigation shewed that it was situated immediately over a large superficial vein coursing visibly beneath the peritoneum. Gentle pressure on this vein was at once followed by further oozing of blood from the projection. On the apex of the latter was visible a small rent with thinned and ragged edges. The projection therefore, was in reality a varix communicating with the superficial vein, and after the tumour had been hardened a fine probe could readily be passed through the rent into the vein, as is shewn in the illustration.

The patient made a good recovery and returned home on the ninth day.

Intra-peritoneal hæmorrhage proceeding from uterine fibromyomata is so rare a condition that the omission of all reference to it in text-books and monographs is not surprising. But few cases are recorded in the literature, and some of these are mentioned in the



Sessile subperitoneal Fibromyoma on the surface of which is a ruptured varicosity situated over a subperitoneal vein. A bristle has been passed through the rent in the varicosity and its distal end can be seen through the vein wall.

briefest terms. Yet it has long been known that in cases of fibroids bleeding might occur directly from veins and sinuses in the tumour itself. Matthews Duncan¹ reported in 1866 a case in which death followed bleeding from a large vein in a fibroid that was partly interstitial, partly submucous, and he also mentioned a similar case of Cruveilhier's. Schauta² recognized that a cystic fibroid could bleed into its own cavities especially when the pedicle of a pediculated tumour underwent torsion as in Prochownik's³ case in which two kilogrammes of blood were removed from the cavity in the growth. That bleeding has not more frequently occurred into the peritoneal cavity seems surprising when one considers how often large sinuses are found coursing over myomatous uteri, and how common it is to find in these tumours degenerative changes that have produced softening and friability which render the tumours more susceptible to traumatism. Specimens of fibroids shewing varices on their surfaces have been exhibited, *e.g.*, by H. R. Spencer⁴ and Treub,⁵ whilst the former has shewn before the Obstetrical Society of London a cystic fibroid that threatened to rupture, and mentioned that he had known of several instances in which rupture actually took place. Such a rupture, or laceration of a solid myoma (as the result of traumatism) might implicate a superficial vein: or in the absence of both rupture and laceration, the wall of a vein or of a varicosity might give way under increased blood pressure. Rokitsansky⁶ was probably the first to mention the latter possibility, but in his "*Lehrbuch*" he merely states that "the tearing of a superficial vein of a fibroid tumour, with bleeding into the peritoneal cavity has been observed." Since then there would appear to have been only 22 authenticated cases (including the writer's). Five of these were not verified by operation or autopsy, and are separately classed.

In five instances the diagnosis has not been verified either by operation or autopsy:—

Case A. Laroyenne and Soller⁷ (1881). Nullipara, aged 52. Menorrhagia up to 2½ years previously, since when amenorrhœa had existed. For eleven months the patient had noticed a small tumour in the abdomen and had suffered from severe pains. During the three weeks preceding admission to hospital the tumour had increased in size and the pains become aggravated. On the left was felt a hard solid tumour, separated by a shallow furrow from two smaller fluctuating swellings on the right side. The uterine sound passed 8 cm. into the retroflexed uterus. The fluctuant masses were tapped, two litres of thick, viscid, chocolate-coloured fluid being drawn off. Diagnosis: hæmatocele consecutive to a fibroid. After the tapping the pains ceased, but the swelling on the right reappeared. A second tapping withdrew a litre of brick-red fluid. Five days later the patient left hospital—"the tumour had not reformed."

Case B. Laroyenne and Soller⁸ (1881). A patient, aged 40, had suffered from menorrhagia for a year. During a menstrual period there

developed an acute peritoneal illness that continued for several days. About a month later, "after a violent effort," acute abdominal pain with swelling came on. A cystic collection was found in Douglas' pouch, and in front of it lay the hard, nodulated uterus. The second passed 9 cm. Diagnosis: hæmatocele consecutive to fibroid. The collection underwent partial absorption, but the final result is not stated.

Case C. Laroyenne and Soller⁹ (1881). A married woman, aged 38, suffered from menorrhagia. During a menstrual period she was seized with abdominal pain and swelling, with vomiting. Three weeks later when the patient entered hospital, the condition had improved, but the pain and swelling persisted. The sound passed 9 cm. into the enlarged uterus which reached three fingers' breadth above the pubes. A fluctuating tumour lay in Douglas' pouch. No operation was performed and the after history was not traced.

Case D. Gautier's case¹⁰ (1903) is related by C. Pellanda. A woman aged 45 gave a 12 years' history of the growth of a fibroid to the size of the full-term pregnant uterus. There was but little menorrhagia, although severe dysmenorrhœa compelled rest in bed at the periods. Procrastination on the part of the patient prevented operation. In December, 1903, there occurred the sudden onset of signs of internal hæmorrhage. The patient's strength ebbed for three days, an operator having declined to interfere. "*La malade s'éteint lentement.*" Death. No autopsy.

Case E. Aug. Pollosson.¹¹ The patient was a single woman of 30 who had a myomatous uterus as big as the organ at the third or fourth month of gestation. An attack of abdominal pain obliged her to take to bed, and a fortnight later she was brought to Lyons. Pollosson found a myomatous uterus displaced to the front and left by a firm collection that filled the pelvis and extended as high as the liver, and attained the size of the full-term pregnant uterus. A diagnosis of recent hæmatocele was made, and no operation performed. A year later the mass had diminished to the size of a fist, and in eighteen months it had quite disappeared. The myomatous uterus remained as before; it caused no symptoms and operation was therefore deemed unnecessary. Up to 1904 no change had occurred.

Although it cannot be doubted that fibromyomata did exist in each of these five cases, yet the absence of proof of the actual source of bleeding necessitates their exclusion from further consideration. In Vanwert's case,¹² sometimes incorrectly quoted as an instance of intraperitoneal bleeding from a myoma, a myomatous uterus co-existed with an ectopic gestation, the latter being the cause of the hæmorrhage. The question of ectopic pregnancy has not been mentioned in any one of the five cases quoted, but without positive proof of its absence the better course is to deal only with cases in which operation or autopsy clearly indicated the origin of the bleeding.

Including the case I report there are seventeen authenticated cases. In two the bleeding occurred from myomata but the precise

source is not stated. In the other fifteen the hæmorrhage has usually occurred from a vein or sinus on the surface of the fibroid by the establishment of an opening in some weak spot in the vessel wall. The yielding of this weak spot may occur as the result of an increase in the general blood pressure such as is produced by exertion or sudden effort, or as the result of increased vascular tension in the myoma itself consequent on torsion of the pedicle of a pediculated tumour. In four cases the vessels were injured (i) as the consequence of involvement in laceration of a solid myoma (2 cases), or in rupture of a cystic one (1 case): (ii) by erosion in the process of ulceration set up by unyielding pressure of a bony projection against the tumour (1 case).

In 2 cases the precise source of the bleeding from the myoma is not stated.

Case I. Albert Martin.¹³ In July 1896, Martin saw a nun, aged 39, who three weeks previously, at the close of a menstrual period, had been attacked during the night by severe abdominal pain with swelling, rapid pulse and fainting. The diagnosis was grave internal hæmorrhage of unknown origin. For three weeks there persisted vomiting, retention of urine and constipation. Martin found a tumour reaching above the umbilicus, but deferred diagnosis. Laparotomy disclosed a pediculated myoma the size of a foetal head at term. Numerous adhesions were broken down and some altered clots removed. The pouch of Douglas was filled by the myomatous uterus which was removed, "with external treatment of the pedicle." Recovery. The precise source of the bleeding is not stated, but Martin avers that the clot was found only around the myoma.

Case II. Amann,¹⁴ in shewing the specimens before the Munich Gynæcological Society, stated briefly: "multiple fibromyomata of uterus and ovaries: necrosis and internal bleeding: death before operation could be carried out."

Cases in which hæmorrhage was due to an opening in the wall of a vein.

Case III. Gusserow and Zweifel¹⁵ describe the case of an emaciated woman aged 27 who died 40 hours after the expulsion of a macerated ovum. The autopsy revealed a fibroid the size of a man's head attached by a thick pedicle to the fundus uteri. The veins on the posterior surface of the tumour shewed "cribriform perforations" through which blood was actually flowing at the time of the post-mortem examination. The authors believe that the movements communicated to the tumour during the process of abortion had led to thinning and rubbing through of the vessel walls.

Case IV. Döderlein¹⁶ in the course of the discussion on the case of Amann's mentioned above, cited an instance in which rapidity of the pulse and severe, inexplicable anæmia had been caused by intraperitoneal bleeding from a vein in a myoma. The explanation of the bleeding was given only by laparotomy.

Case V. A. Stein¹⁷ reported the case of a woman aged 49 who had had 3 normal labours. She was seized with burning, stabbing pain in the lower abdomen which obliged her to take to bed where she fainted. The doctor called in recognised (1) "most extreme internal bleeding": (2) intraperitoneal fluid: (3) a soft tumour to the right of the uterus. Owing to bad train connections, 24 hours elapsed before the patient, now in a collapsed condition, arrived at the Heidelberg Frauenklinik. On a provisional diagnosis of tubal gestation, the abdomen was at once opened, dark fluid blood escaping through the incision. Both tubes and ovaries were normal. Two myomata, together equalling the size of a fist, sprang from the fundus. They were blood-red in colour and veins visibly coursed over their surfaces. In one of these veins was an opening 3-4 millimeters long. After close examination of the abdomen no other source for the bleeding could be discovered. Subtotal hysterectomy was performed, but death ensued 40 hours later from a series of complications that may probably be summed up as sepsis. At the autopsy the abdominal aorta was injected with water but none escaped into the peritoneum.

Case VI. Mrs. Scharlieb¹⁸ in the discussion on the case related by Lewers, mentioned the case of a woman operated on for fibroids in which "on opening the peritoneum much blood welled up before the parts were disturbed" "the source of the hæmorrhage was found to be a ruptured sinus on the posterior surface of the growth."

Case VII. Tédénat.¹⁹ A married woman, aged 35, who had a myoma, had suffered during the four months preceding operation from progressive anæmia and loss of flesh, associated with rapidity of the pulse. The menstrual losses although slightly greater than previously experienced, did not explain the anæmia nor its marked exaggeration at each menstrual period. A rounded myoma reached upwards to a point two fingers' breadths below the umbilicus: the pouch of Douglas was occupied by a hard mass the size of two fists: it was not sensitive to pressure and was regarded as an exudation. The increase in size of the exudation and the exaggeration of symptoms due to anæmia led Tédénat to consider the possibility of internal hæmorrhage. Subtotal hysterectomy was performed, the main myoma having attached to it a smaller pediculated one surrounded by greyish-yellow clots. After removal of the uterus and annexes, about three litres of dark clots surrounded with filamentous adhesions and yellowish clot were removed from Douglas' pouch. Over the surfaces of both tumours there coursed large venous sinuses, "one of which, situated on the posterior part of the tumour, was perforated by small orifices through which blood escaped."

The patient recovered and rapidly regained health and strength.

Case VIII. Tédénat.¹⁹ A married woman, aged 34, had a myomatous uterus filling the pelvis and reaching to the umbilicus. For five years she had had menorrhagia which had led to anæmia. Two years previously there had been an attack of pelvic peritonitis, since when a good deal of abdominal pain had existed. At the operation the tumour was freed with difficulty, and on drawing it out of the abdomen a pyosalpinx the size of an egg accompanied it: to the latter adhered the vermiform appendix. In the midst of adhesions in Douglas' pouch lay about two litres of clot. Hysterectomy and appendicectomy were performed. Recovery without incident.

On the posterior aspect of the tumour mass was a projection the size of two fists. It was hard, sessile, and had a nodulated surface which was marked by large venous sinuses. At the level of the adhesion of the pyosalpinx was found "an eroded sinus" from which the bleeding had taken place.

Case IX. H. R. Spencer²⁰ mentioned in the discussion on Lewers' case that he "had seen a case of extensive intraperitoneal hæmorrhage owing to the spontaneous bursting of a vein on the surface of a fibroid."

Cases of torsion of the pedicle of a pediculated Myoma in which an opening in the wall of a vein led to hæmorrhage.

Case X. Albrecht.²¹ This case is quoted by Stein (*loc. cit.*) as another example of intraperitoneal hæmorrhage from a vein in a myoma. The original communication is not available. The patient was a single woman of 40 years of age who had a pediculated myoma half as big again as a fist. The pedicle underwent torsion and death occurred from intraperitoneal bleeding.

Case XI. R. v. Steinbüchel.²² A married nullipara, aged 44, suffered from multiple fibroids. As the result of violence the patient had a peritoneal crisis, and fifteen days later she underwent operation. When the abdomen was opened blood gushed out with some force and a good deal more was found in the peritoneal cavity. The pedicle of one of the myomata had undergone torsion to the extent of 60°—70°, and dark blood was found issuing from an opening in a vein on the surface of this tumour. The patient recovered.

Cases in which hæmorrhage occurred from a rent in the wall of a varicosity situated over a vein.

Case XII. R. T. Jaschke.²³ A washerwoman, aged 43, lifted a heavy pail, fell down and immediately became ill, pale and pulseless. A doctor was not summoned until the morning of the next day when the patient was despatched into the Klinik. On arrival there 14 hours after the onset she was extremely ill, and when a myoma and the existence of internal hæmorrhage had been made out, the connection between them was at once recognised. Operation was immediately performed, an already anaesthetised patient being displaced to make way for this desperate case. A litre of blood was found in the peritoneal cavity and its source was readily found, for blood was even then welling from a small opening on the summit of a pea-sized varix situated on the upper part of the posterior wall of a myoma the size of a child's head. Subtotal hysterectomy was rapidly performed (15 minutes), but despite all efforts the patient died three hours later. The author points out that it was not so much the severity as the long duration of the bleeding that led to death.

Case XIII. Wallace. The case related at the beginning of this paper.

Cases in which hæmorrhage occurred as the result of laceration of a solid myoma.

Case XIV. A. H. N. Lewers.²⁴ Operation was performed merely for removal of a fibroid, but as soon as the peritoneal cavity was opened "a considerable quantity of fresh blood" was discovered in it. On the surface of the large fibroid, at the junction of solid and cystic portions, there was found a laceration several inches in length, and from this blood was freely escaping. The cause of the laceration was unknown. When removed the tumour weighed 17 lbs. 1 oz.

Case XV. R. M. Littler.²⁵ This case is fully reported in the *Journal* for 1910, vol. xvii, p. 423. The patient was a single woman, aged 43, who had had a myoma for 4 or 5 years. Symptoms were caused only by the weight of the tumour, menstruation being normal. The patient tripped and fell heavily on to an asphalt footwalk, and thereafter suffered from a peritoneal crisis. On a provisional diagnosis of ruptured ovarian cyst the abdomen was opened and at least a pint of blood found in it. On the anterior surface of a large subserous fibroid (weighing 6 lbs. 10ozs.) was a laceration some three inches in length. The tumour was connected to the uterus by a fleshy pedicle, three inches in breadth, which had large vessels running in it. The laceration communicated with a necrotic cavity 2 inches in diameter, and in the tear a superficial vein was involved.

Case in which hæmorrhage was due to pressure ulceration of a myoma.

Case XVII. W. Bruce Clarke²⁷ reported the case of a patient aged 48 who had a peritoneal crisis and was acutely ill when seen. It was known that a fibroid existed but the tumour was not regarded as being responsible for the attack. On a provisional diagnosis of perforation of gastric or duodenal ulcer, the abdomen was immediately opened. "A subperitoneal, pediculated fibroid of considerable size was found to be attached to the back of the uterus, and to be wedged against the promontory of the sacrum." An artery and vein were actually bleeding at the time of operation, and the lower abdomen and pelvis were full of recent blood. The immediate cause of the bleeding was "ulceration" of the surface of the tumour owing to the pressure against it of the sacral promontory. Myomectomy. Recovery after prolonged illness complicated by intestinal fistula and pelvic suppuration.

Exact *diagnosis* could scarcely have been expected in the earlier examples of a condition which has only recently become generally recognized. In some of the cases the existence of internal hæmorrhage was detected, but the connection between it and myomata was not traced. In 1881, Laroyenne and Soller twice diagnosed "hæmatocele consecutive to myoma" (Cases A and B), but in neither instance was the diagnosis verified by operation or autopsy. Jaschke (Case xii.) seems to be the sole recent writer who realised the important connection between internal hæmorrhage and the fibroid. In other cases various diagnoses have been made—tubal gestation, ruptured ovarian cyst, ovarian cyst with torsion of pedicle, perforated gastric or duodenal ulcer—all of which with one exception overlook the possibility of grave internal hæmorrhage. So far as

treatment is concerned, once grave internal bleeding has been recognized no more exact diagnosis is required, since the indication is to locate the bleeding point and check the hæmorrhage. This holds in the severe (Cases ii. and v.) and moderately severe cases. In the majority of these a solid tumour actually existed in the pelvis or lower abdomen, and for the future the existence of internal bleeding and a myoma might certainly be correlated, always provided that ectopic gestation can be excluded. In Vanwert's case (12) which has been cited as an instance of intraperitoneal bleeding from a myoma, tubal pregnancy and hæmatocele occurred in a patient who suffered from fibroids. Exact diagnosis is of more importance in what may be termed the chronic type of case, in which Cases iv, vii, xiii and xvi are included. In the first two (iv and vii) the symptoms were very similar—rapidity of the pulse, advancing anæmia not explained by the amount of external sanguineous losses, with in addition, in Case vii, progressive loss of flesh. In both cases operation shewed that oozing of blood from myomata was the cause of the deterioration in health. In Case xiii the patient had suffered from several mild attacks of peritoneal disturbance, translated by her as "bilious attacks." Each no doubt represented a slight leakage of blood into the peritoneal cavity through an opening—small at that time—which later increased in size sufficiently to permit of the sudden escape of an amount of blood that produced an acute peritoneal crisis. In Case xvi the repeated crises depended on similar leakages of blood.

In two cases (vi and xiv) operation was undertaken solely on account of myomata, and the presence of blood in the peritoneal cavity was a surprise to the operator in each case. Mrs. Scharlieb does not state whether the free blood was recent or not but in Lewers' case it was "fresh." In neither case had there been prior to the operation anything to suggest intraperitoneal bleeding. In the writer's case the presence of intraperitoneal blood also came, as a surprise, the provisional diagnosis being torsion of the pedicle of an ovarian tumour.

To summarise shortly:—

The diagnosis depends on the existence of a myoma plus the symptoms and signs of intraperitoneal bleeding.

Rarely (Case v) free fluid may be recognized in the peritoneum in cases in which the blood has escaped in large quantity.

In every case, other possible causes of intraperitoneal bleeding should be reviewed, and ectopic gestation requires particular consideration.

Cases may be divided roughly into three classes:—

1. The *acute*, in which the shedding of a large amount of blood is followed by a severe peritoneal crisis and general collapse.

2. The *subacute* or *chronic*, in which small or very moderate amounts of blood are shed at intervals, evidenced by mild signs of peritoneal disturbance of short duration, or by advancing anæmia that is not explained by external losses or by general disease.

3. Cases in which intraperitoneal bleeding occurs without evidence of its existence. In such cases the bleeding may have been provoked by some exertion on the part of the patient immediately before transport to the theatre, or whilst actually on the way thither, or perhaps by struggling during the earlier stages of anæsthesia.

Mortality. Seventeen cases were submitted to operation. It is definitely stated that recovery followed in seven cases, and that death occurred in six cases. In the absence of any mention of death in the remaining four cases it will be presumed that recovery took place. On this basis, there were six deaths out of seventeen cases, a mortality rate of 35·29 per cent. No more striking evidence of the serious nature of the condition could be offered.

The only form of injury to the vessels in which no fatal result followed was their involvement in a laceration of a solid myoma. In Case xiv the hæmorrhage was a surprise to the operator: whilst in Case xv the symptoms were so urgent as to lead to the early calling in of a doctor and the immediate transportation of the patient to hospital. These patients probably owe their lives to promptitude in the application of treatment.

Treatment. In all cases the treatment should be surgical and immediate. The histories of the severe and moderately severe cases give no ground for hopes that palliative measures may temporarily improve the state of the patient, with a view to operation under better conditions. On the contrary they show that the more desperately ill the patient is the more urgent is the necessity for immediate operation. In four cases when the abdomen was opened bleeding was actually going on, in two instances from ruptured veins (xi and xii), in one instance of laceration (xiv) and in the solitary case of ulceration (xvii). In short, the treatment of these cases must conform to the general surgical rule that when bleeding is going on, the bleeding point must be located and the hæmorrhage arrested.

When patients have drifted into the serious condition presented by Stein's case (v), it is a question whether the best policy is followed in performing immediately such an operation as hysterectomy. Some milder procedure that effectually checked the bleeding would seem indicated in such a case, the radical operation being postponed for a few days until the general state of the patient warranted it. A patient almost moribund from hæmorrhage will probably succumb to an abdominal operation of any magnitude. Removal of a pediculated fibroid the pedicle of which has undergone torsion, can be

quickly carried out, whereas a hysterectomy implies increased duration of operation and intensifies shock. It may therefore be suggested that in such instances the ligature of bleeding vessels might be sufficient to tide the patient over a few days until restorative measures have enabled her to recover sufficiently from the loss of blood to face the radical operation with a reasonable chance of success.

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