unlearned it looks as if the surgeon had made a hash of his business. We must take care that this is clearly understood, or we shall be liable to actions for malpraxis.

TWO CLINICAL LECTURES

ON

RETENTION OF MENSTRUAL BLOOD FROM ATRESIA OF THE VAGINA

WITH SOME REMARKS ON THE INDICATIONS FOR LOCAL
EXAMINATION IN THE DISORDERS OF
MENSTRUATION.

Delivered at St. Thomas's Hospital November 14th and 17th, 1899.

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LECTURE II.

THE next case illustrates a similar condition in a somewhat older patient. I am indebted for the following notes to my clinical clerk, Mr. Barnicot:

CASE II.—M. A. M., aged 21, single, a laundress, was admitted into St. Thomas's Hospital October 2nd, 1899. She had never had any menstrual discharge. She had felt no pain or inconvenience until the last twelve months. She had suffered during that time from "bearing-down pains," lasting five or six days at monthly intervals. About seven months ago she first noticed some abdominal swelling, which had since gradually increased in size. Her general health had been unaffected. She had had no trouble with regard either to micturition or defecation.

She was a light-complexioned, healthy, cheerful woman. There was a large prominent swelling situated centrally, in the lower and middle portions of the abdomen, reaching from the symphysis pubis to a line about an inch above the umbilicus, where it was most prominent towards the right. The right upper corner of the swelling was harder and firmer than the rest, and was more or less definitely differentiated from the other part of the tumour, which was elastic and obscurely fluctuating. The tumour was not painful or tender. It was dull all over on percussion. It measured $8\frac{1}{2}$ in. in height, from the crest of the symphysis, and 7 in. in maximum width—namely, 3 in. to left of middle line and 4 in. to right. The temperature and pulse were normal.

On examination, October 10th, 1899, the vulva and neighbouring parts were seen to be bulged downwards, forming a rounded projection. The labia minora were separated to a width apart of about $\frac{1}{2}$ in. Between them a tense membrane was seen, of bluish colour, entirely closing the vaginal orifice. The tension was evidently due to the presence of a thick fluid. On examining the rectum the anterior wall was felt to be bulged backwards by a globular swelling. The pelvic tumour was shown by bimanual examination to be part of the swelling that was seen in the abdomen. The general health was good.

On October 12th, 1899, the patient was anaesthetised, and the following measurements were taken, namely, transverse diameter of visible portion of occluding membrane, 1 inch; antero-posterior diameter of same, $1\frac{1}{2}$ inch. The perineum measured $1\frac{1}{2}$ inch from before backwards. The distance from the clitoris to the anterior border of the perineum measured $2\frac{1}{2}$ inches. An incision which, in the then tense condition of parts must have measured about $1\frac{1}{2}$ inch in length, was now made by a scalpel through the thick membrane closing in the lower part of the vagina. The incision was antero-posterior in direction. The withdrawal of the knife was followed by the pouring out of a thick viscid stream of dark reddish-brown chocolate-coloured fluid, evidently altered blood. This stream flowed without any abdominal pressure being made by the hand, and continued, with a few pauses, to flow for fifteen minutes. Sickiness expedited the flow. The total quantity that had passed when the patient left the table was three pints. No douche was used.

Two fingers were passed into the vagina, but the uterus could not be reached. The vaginal walls were much thickened, and showed no rugae. On the posterior wall there was a thick semilunar fold of tissue with concavity upwards. The external genital organs had now resumed their normal appearance.

The flow continued into a dry vulvar pad of wood wool somewhat slowly and scantily for three days. On the evening of October 14th, the third day, the patient was allowed to sit up in bed. This resulted in a more copious discharge. The following day the discharge became thinner and less coloured. Two days later (October 17th) it had almost ceased. The temperature and general condition remained normal the whole time.

On October 19th, a week after the operation, the parts were examined. The tissues incised were seen to be of considerable thickness. The free edge of the hymen could not be seen; it seemed to be incorporated with the occluding membrane. On introducing the finger, the walls of the vagina were felt to be of considerable thickness and without rugae. Across the middle of the posterior wall the tissues were still felt to be thrown into a thick semilunar fold. High up above and in front of this was the os externum of the patulous and funnel-shaped cervical canal. A Sims's glass vaginal rest was passed through the incision and fastened *in situ* by means of a vulvar pad and T-bandage.

A considerable flow of serum commenced on the 22nd and continued, diminishing daily in quantity up to the 26th.

On October 30th the following note was made: "The vaginal walls are still thick, and are even more folded in transverse ridges. The uterus is still high up, only just within reach of the finger, and so irregular and ill-defined that it is not easy to trace out its boundaries. The canal entered

by the sound lies to the right of the median line, and the point of the instrument can be felt on that side just below the level of the umbilicus. No thickening of the uterine wall is apparent or elongation of the canal, but the lower part of the canal is irregularly funnel-shaped, with widest part at the os sternum. A little blood-stained serum passes each time the glass plug is removed. The incision is quite healthy, and, with a little difficulty, admits two fingers."

The patient left the hospital on November 1st, and was directed to wear the glass rest either night and day, or night only or day only, as she might find it most convenient, and to present herself for examination in three weeks.

This case differs from Case I, not only in the age of the patients (21 in this case, 13 in the former), but in the length of time during which the symptoms of menstrual disorder had been present. In the younger patient there had been no menstrual molimina, and the first symptoms to attract notice had presented themselves only a week or two before her admission. In the present case the periodic pains and discomforts known as the menstrual molimina had been regular in their occurrence for twelve months. Yet notwithstanding this difference, the accumulation had probably been in course of formation almost as long in the one case as the other, for in both it had formed a tumour, filling the pelvis and rising to a considerable height in the abdomen. It is true that the quantity in the younger patient was only $1\frac{1}{2}$ pint, while in the elder it was 3 pints, but this difference is scarcely more than would be accounted for by the difference in size, age, and development of the two patients.

Another point of difference between the two cases is that while in the one case the bulging membrane was not visible on inspection of the external genitals until the labia minora had been separated, in the other the membrane bulged between the labia, separating them to the extent of about $\frac{3}{4}$ or 1 inch.

A third point in which the two cases differed was in the length of time that the coloured discharge continued after the operation, in the one case being eleven days, in the other five.

The third case I have to present to your notice is that of a patient still under observation in the ward. For the following notes I am indebted to my clinical clerk, Mr. F. M. Bingham:

CASE III.—F. K., aged 14, an imbecile, was admitted into St. Thomas's Hospital, October 17th, 1899. Seven weeks before her admission she was subject during two or three days to paroxysms of pain, made evident by her screaming and by the clenching of her hands. After a month's interval the symptoms recurred. This time they persisted, and at the end of three weeks she was brought up to the casualty department of the hospital, where occlusion of the vagina and retention of menstrual fluid were diagnosed. She was accordingly admitted.

On October 19th, two days after admission, she was placed under the influence of an anaesthetic. The external genital organs presented the appearance natural to the age of commencing puberty. The pubes were covered with a fair quantity of hair. The hymen was as usual deeply seated and concealed from view by the labia minora, which met as usual in the middle line. On separating them the parts had a normal appearance, except that there was no vaginal ostium. There was no bulging membrane visible, or projection downwards of the perineum or vulva. By the rectum there was felt to be a globular bulging backwards of the anterior rectal wall just above the apex of the so-called perineal body. The lumen of the rectum was not seriously encroached upon.

Bimanually, a recto-abdominal examination showed the swelling felt *per rectum* to be continuous with and to form part of a swelling equal in size to that of an ordinary orange. The upper part of this swelling was perceptible on deep palpation of the suprapubic region, but formed no visible projection there, and did not reach as far forward as the under surface of the anterior abdominal wall. It was central in position. The diagnosis was therefore confirmed.

A scalpel was passed directly upwards through the tissues occluding the vaginal orifice, the blade entering immediately in front of the anterior border of the perineum, with its cutting edge directed backwards. The blade penetrated a fairly thick intervening tissue, and was then felt to enter the cavity of the distended vagina. On rotating the blade through a quarter of a circle so as to separate the edges of the incision, a quantity of thick, dark-brown fluid of the consistence of treacle made its escape. The quantity that escaped on the operating table measured 5 fluid ounces. The opening was enlarged so as to easily admit one finger. The vaginal canal was felt to be distended and its walls smooth. Half-way up on the posterior surface was a thick, semilunar fold. The os uteri was perceived high up as an opening on a level with the roof of the distended vagina. There was no projection of cervix or evidence of distension of the cervical canal.

On the second day the discharge was dark red, on the third chiefly serum, after that it ceased. At the end of a week a glass tube was passed, but it caused much pain and could not be retained; a little discharge followed its introduction, but this soon ceased. A smaller tube was obtained, and from and after November 1st it was passed two or three times a day, and retained a minute or two to keep the opening patent.

Several attempts have been made to keep the track open, by inserting gauze plugs whilst the patient was anaesthetised, but each time she has removed the plug on recovering her consciousness. So feeble is her intellect that she cannot be made to understand that she is not to disturb the dressings. Meantime she is kept under observation, with a view to

securing the non-closure of the orifice by the occasional passage of a glass plug.

In this patient an imperfect cerebral development is associated with imperfect development of the genital organs. The vagina is small as well as being occluded. The occluding membrane was of considerable thickness, and this leads me to point out that cases of so-called imperforate hymen are not infrequently cases where the thickness of tissue between the vagina and vulva is greater than would be accounted for by a merely imperforate hymen however thick. These are instances where the lower end of the coalesced ducts of Müller has failed to reach and open into the deepened portion of the uro-genital sinus behind the vestibule. In proof of this, cases are met with where the normally pervious hymen can be seen lying upon and adherent to the more deeply-placed occluding membrane. In other words, it is the lower end of the vagina that is really occluded. I could not trace the free border of the hymen in the instance before us, and therefore I have reason to regard the occlusion as being caused partly by an imperforate hymen and partly by occlusion of the lower end of the vagina itself.

The symptoms of pelvic discomfort had not been noticed until seven weeks before admission and the quantity of menstrual blood retained was comparatively small, namely, 5 fluid ounces. But even this quantity was sufficient to cause an abdominal tumour, distinctly felt on deep palpation over the hypogastrium.

The fourth and last case of this series, which I have now to read to you, was only admitted on Monday last.

CASE IV.—B. W., a well developed but not very intelligent girl, aged 20, was admitted into St. Thomas's Hospital on November 13th, 1899. The following abstract of the case is taken from the notes of Mr. Barnicot:

The patient has had no menstrual discharge, and had never experienced any periodic pains or discomfort. She sought advice for the amenorrhoea simply in deference to the wishes of her friends, not because she had any symptoms of ill-health. She could only remember one occasion, about seven months ago, when she had any pain on passing urine. The pain lasted only for one day. She had never had retention to the extent of needing the catheter.

The abdomen had a normal appearance. On careful palpation an ill-defined swelling could be felt in the middle line, reaching from behind the pubes to near the level of the umbilicus. The swelling was not tense or fixed; no fluctuation could be detected. On percussion it was uniformly dull up to within an inch of the umbilicus. The dull area was about 4 inches in width, and central. An extension of the dullness at the left upper corner, with increased resistance at that part, suggested that as the probable position of the uterus.

The external genitals were normal in appearance. There was no bulging downwards of the pelvic floor. On separating the labia minora the free border of the hymen irregularly dentate could be traced on both sides, the edges lying in contact. On separating the lips of the hymen the vaginal orifice was seen to be closed by tissue similar in appearance and colour to the parts around. There was no bulging membrane visible. The following measurements were made: Distance from glans clitoridis to fourchette $\frac{1}{2}$ inch, from meatus urinarius to fourchette $\frac{1}{2}$ inch, from fourchette to anus $\frac{1}{2}$ inch.

Per rectum a large globular tense swelling could be felt bulging the anterior rectal wall backwards down to a point about an inch above the anus—that is, to the apex of the perineal body. By combined recto-abdominal examination the swelling was felt to rise above the plane of the pelvic brim, and to equal in size that of a fetal head at term. The abdominal portion was flaccid and ill-defined; the pelvic portion was more tense and distinct.

A female bladder sound was passed to ascertain the length and position of the bladder. The instrument was found to pass vertically upwards, but was too short to reach the entire length. A uterine sound was thereupon inserted, and passed $\frac{7}{8}$ inches, the point being felt just below the umbilicus, immediately beneath the abdominal wall.

On November 16th the patient was anaesthetised, and the vulva and parts around were thoroughly cleansed and disinfected. A scalpel was passed between the lips of the hymen, and was felt to enter a cavity after passing through about the same thickness of tissue as in the last case. At first only a few drops of dark fluid escaped. A pair of artery forceps was introduced and the blades separated, when a quantity of thick, ropy, tenacious, dark-brown fluid poured slowly out. It was evident there was no great tension. The finger was now passed in, and with its guidance the opening was enlarged antero-posteriorly. Some retching on the part of the patient expedited the flow, and before she left the table 77 fluid ounces of the fluid had escaped. Firm pads of absorbent wool were bound over the vulva and retained in position by a T bandage. During the next few hours more fluid escaped, to the extent of 6 fluid ounces. As this operation only took place yesterday I cannot complete the account of the case, but I have every reason to hope that the patient will do well.

A specimen of the fluid evacuated is on the table before you. You will observe its peculiar colour and consistence. It is quite free from odour.

This case furnishes another instance of retention of menstrual fluid to an extent sufficient to form a tumour of considerable size, without any history of periodical pains or disturbance of the general health. Thus of the 4 cases, 2 had had no menstrual molimina at all, 1 had had them only for seven weeks, and the only one who had had them for any consider-

able period was the girl of 21, who had suffered from them for twelve months.

This case illustrates well the condition alluded to in my remarks on the preceding case—the condition, I mean, in which the obstruction was not due to imperforate hymen, for the hymen here was plainly to be seen of normal formation, but to closure of the lower end of the vagina. It indicates a failure on the part of Müller's ducts to reach sufficiently far down to complete the vaginal canal.

The only other special feature of this case was the remarkable absence of tension, as shown by the flaccidity of the abdominal portion of the tumour, by the absence of bulging at the vaginal orifice, and by the fluid being in no hurry to escape when an opening had been made. I am not ready with any explanation of this peculiarity at present. It is possible that when we have an opportunity later on of ascertaining the relations of the parts concerned we shall have some light upon it.

I have spoken to you in these lectures of retention of the menses from atresia of the hymen and lower end of the vagina, partly because these are the most common causes of retention, and partly because of the series of cases with which I was able to illustrate them. You must remember, however, that retention may be caused by occlusion of any part of the genital tract from the os uteri internum to the vulva. Thus the whole of the lower part of the vagina may be occluded or absent, causing retention in the upper part of the vagina and in the uterus. Of this I have seen at least two instances.¹ Again, the seat of obstruction may be at the os uteri externum or the os uteri internum, giving rise to retention of blood in the uterus, hæmatometra, the accumulation occupying the body and neck in the one case in the other the body alone. Of this latter variety an example was recently admitted into Adelaide Ward. It is the only case I remember to have seen, and, though not a very well-marked instance, the accumulation having only just commenced, it will serve to illustrate the condition, and I will relate it to you. The notes of the case were taken by Mr. J. C. W. Graham.

CASE V.—C. C., aged 21, was admitted into St. Thomas's Hospital on October 7th, 1899. She had never had any menstrual discharge from the vagina. At the age of 15 she commenced to have every month very severe pains in the lower part of the abdomen and in the back, lasting about three days at a time. Three years ago she passed one period without pain; at the month next following the pains lasted a week. Since that the pains had recurred regularly every month. The patient was married in April, 1899. From that time the monthly pains had been more severe. A series of such pains occurred whilst the patient was in the hospital. They were so severe as to cause her to cry out and writhe about on the bed.

On October 17th an anæsthetic was administered. The vagina was of normal size and empty. An ordinary uterine sound entered the cervical canal readily, but could not be passed through the os internum. A smaller sound, equal in size to an ordinary surgeon's probe, passed without much difficulty. The canal, which was of normal length, was dilated by means of metallic bougies up to No. 11. A little more than a fluid ounce of dark, thick, altered blood escaped during the dilatation. A glass stem was inserted into the uterine canal, and the vagina plugged with iodoform gauze. The gauze was removed next day. The stem came out wholly or partially two or three times, and was replaced. On October 23rd it was finally removed. A slight dark discharge took place from the vagina from October 19th to 21st. The patient has since left the hospital, and has promised to come up after the next period and report herself.

I am not able to tell you whether the imperviousness of the internal os was due to an obstructing membrane or to adhesion, or merely to extreme fineness. Whatever its nature, the obstruction was easily overcome, and I am in good hopes it will not recur. The altered character of the blood that escaped showed that it had been retained, and was not a fresh hæmorrhage due to the manipulations. It was a hæmatometra in an early stage. If it had been allowed to go on unrelieved, the uterus would have become distended and formed a well-defined swelling in the hypogastrium.

Just as we have seen that retention may be going on without the patient having had any of the ordinary menstrual pains and discomforts, we have here a case showing that these menstrual molimina may be repeated month by month for several years, not only without any external hæmorrhage but without any hæmorrhage at all; for it can scarcely be supposed that, if even a slight hæmorrhage into the closed uterine cavity had been going on every month for six years, the total quantity would have been so insignificant. Either the monthly flow must have been trifling in amount or the accumulation must have only just com-

menced. It is possible the patient's future menstrual experiences may throw some light on this subject.

It only remains for me to say a few words about a more rare and more complicated class of cases of menstrual retention—I mean those in which the whole or a portion of the utero-vaginal canal is divided into two parts by a septum or otherwise, and where one side only is occluded. If the unilateral occlusion is at the vaginal orifice, there is formed a puzzling tumour known as a unilateral hæmatocolpos; if at the os uteri, the tumour is a unilateral hæmatometra. I had an instance of this latter condition under my care a few years ago, and published an account of it, together with an abstract of all the cases I could find recorded, in the *Transactions of the American Gynecological Society*, vol. xviii, for 1893, p. 434, to which I must refer those of you who are specially interested in the question.

NOTE.

¹ The details of one of these cases will be found in the *Medical Chronicle* for October, 1887.

DESCRIPTION OF AMBULANCE FOR THE MOUNTED SERVICE.

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THE military history of this and other countries shows that, when any new evolution of tactics or war material takes place, we have had the utility of the cavalry arm called in question, but it has always been found that that force enters upon new and more responsible duties. The institution of the cavalry manœuvres in 1890 marked the beginning of the cavalry renaissance, but since the introduction of the magazine rifle, and even since the beginning of the Boer war in October, the supreme importance of the mounted services in modern warfare has been finally established. We see a whole British army, largely owing to its insufficient mobility, checkmated at various points, and the situation cannot be altered until a large mounted force is sent to its relief. It has now been decided to organise a total force of 20,000 regular and irregular cavalry, yeomanry and mounted infantry. With such an enormous addition of mounted men we are naturally led to inquire how the existing medical arrangements will suit such an altered state of things. We are met at once by the fact that the great alterations in the medical regulations which have been made in the past few years in the interests of the infantry have not been adapted to the requirements of cavalry or horse artillery. "The ambulance arrangements for cavalry in war are practically non-existent" (Surgeon-General Evatt).

We have the same medical organisation (and that a dismounted one) for both the infantry and cavalry divisions, and if this system has been condemned by cavalry commanders in the past, how much more will it now prove itself unsuited to such a large, rapidly advancing, widely extending, and rapidly retiring force of mounted men called on constantly to fight (mostly on foot) at great distances from the main body.

When a British army corps takes the field it has attached to its divisions, for the care of its wounded, the bearer companies of the Army Medical Corps. These are entirely non-regimental, and quite distinct from the ambulance detachment in each regiment called regimental stretcher bearers. These bearer companies on foot have to keep up with the cavalry or infantry divisions to which they belong, notwithstanding the widely different conditions under which they act.

The existing medical arrangements of a dismounted bearer company with a cavalry division in the field have been condemned by experienced cavalry commanders, and army surgeons, notably by the late Major-General Sir Herbert Stewart, who, from his experience in Egypt, described the system as "absolutely unsuitable." In a memorandum which he presented to Lord Morley's Committee in 1883 (the Army Hospital Services Inquiry Committee), he suggested the establishment of a mounted bearer company to accompany cavalry, similar to one he improvised in Egypt, and which had done excellent service. Lord Morley's Committee unanimously recommended "that in the medical organisation of cavalry brigades in the field provision be made for mounted

bearer companies." No attempt has yet been made to carry out this recommendation; neither in the medical regulations nor in the new Manual of the Army Medical Corps do we find any reference to the subject.

The names of many distinguished officers could be mentioned who have had experience in numerous instances where the wounded were unattended to for hours, and where the movements of troops were hindered. Among them Sir Drury Lowe, who writes:

I have often heard (Sir) Herbert Stewart say how terribly he was hampered by not having his wounded readily transported.

General Lord Ralph Kerr, late Commandant at the Curragh, states that:

Cavalry must be sadly crippled when they have only the present organisation to look after their wounded.

Surgeon-General Evatt described how in Egypt he was sent back to the infantry square when toiling with his bearer company on foot miles behind the cavalry force to which he was attached; the wonder was they were not cut to pieces by the enemy. The late Surgeon-General Wolseley was of opinion that no greater boon could be conferred on the cavalry than the suggestion of some efficient way of carrying their sick and wounded.

While on humane grounds alone some new organisation should be established, it has been remarked, especially in savage countries, how the daring of the soldier is increased by knowing that help is at hand. When a soldier is wounded, he is in excruciating pain if a nerve is injured, and faint from the shock and loss of blood; he is in dreadful uncertainty and apprehension as to whether his hurt is mortal or slight. He is tired, cold, hungry, and thirsty, and, after lying many hours unattended, he is haunted with the idea that he has been forgotten or will not be found, and that he will die before relief comes.

Still more serious are the surgical objections. The antiseptic system of dressing wounds has revolutionised civil and military surgery. The epidemics of erysipelas, blood poisoning, and hospital gangrene, which killed hundreds in every campaign, are no longer seen where it can be carried out. But, as Esmarch says: "It is a necessity that the patient should have a dressing applied, and that he is brought to the dressing station to be further treated as soon as possible."

In the Bosnia and Herzegovina war of occupation by Austria in 1878, the writer saw hospitals crowded to excess; there was not a single epidemic of erysipelas or other hospital disease, as in every case a "first dressing" had been immediately applied, and, indeed, sometimes remained on untouched until complete healing resulted.

If it is a necessity for the best results of the antiseptic system in war, not only for the wounded soldier himself, but also for the other wounded amongst whom he is placed, to have an immediate dressing applied, it is equally necessary, in order to diminish the mortality, to have operations carried out, especially in joint injuries and amputations, at the earliest possible moment. Pirogoff¹ narrates how Reyher, in the Bulgarian war, found the mortality rise from 10 to 61 per cent. by the delay of a few hours in joint injuries, and from 18 per cent. to 35 per cent. with gunshot fractures. That in fact the brilliant results of antiseptic surgery cannot be obtained unless it is applied within two or three hours, as it will be found the highest rates of mortality correspond with those seen when ordinary dressings are used. Von Bergmann, in the Russo-Turkish war, showed how important an early application of an antiseptic tampon is in the further progress of the wound. Mac Cormac insists on the importance of treating all joint and gunshot fractures at once antiseptically at the dressing station. Fischer, the greatest German writer on military surgery, lays down that antiseptics must be applied early, and that a greater force of doctors and dressers must be at the dressing station to carry the treatment out fully. The greatest danger to the wounded soldier, then, lies between the fighting line and the field hospital, and it is there that medical aid should be least defective.

Chenu² states, in his report of the Crimean war, that we had after every fight 5 or 6 per cent. dying from hæmorrhage, many from trivial wounds. Ledran puts the percentage a little higher. It is evident that many lives would be saved if a sufficiently large staff was stationed immediately behind the fighting line. Fitzgerald states that in the Franco-German year he specially noted the terribly increasing