PAPILLOMATOUS CYSTIC DISEASE OF THE BROAD LIGAMENTS; ITS CLINICAL AND OPERATIVE FEATURES. WITH THREE CASES.

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In the domain of practical surgery papillomatous cystic disease of the broad ligaments is scarcely yet recognized as having a separate existence. In no practical work with which I am acquainted is any attempt made to classify it as a distinct disease; in most it is not even mentioned. Coblenz,¹ of Halle, in several monographs has minutely discussed the pathology of these cases, and has provided clinical examples. Alban Doran in his excellent work on Tumors of the Ovary, Fallopian Tube and Broad Ligament, has made further and elaborate contributions to our knowledge of this disease, and by short descriptions of at least nine cases, met with at the Samaritan Hospital, has materially added to our knowledge of its clinical features. With the exception of a few scattered cases in books and journals, quoted mostly as examples of difficult operations, this represents the sum total of the literature of the subject.

That the disease deserves the closest possible scrutiny is certain on several grounds. Its removal is among the most difficult of the many difficult operations in abdominal surgery, and it ought, if possible, to be attacked with the full foreknowledge that is expected of a man who would perform a hysterectomy or resect a piece of intestine. Its existence also

¹ Coblenz's papers are to be found in Virchow's Archiv., Band. LXXXII and Band. LXXXIV, Zeitschrift für Geburtshülfe und Gynäkologie, Bd.VII, Heft. 1, and Archiv. für Gynäkologie, Bd. XVIII, Heft. 2. An admirable summary of these papers is to be found in the London Medical Record of March 15, 1882.

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is attended with more risk to the patient than ordinary cystoma of the ovary; a papillomatous growth is peculiarly liable to rupture, and, possibly as a result of this tendency, to cause general infection of the peritoneum. It is right, therefore, that every possible means of contributing to the diagnosis and practical management of these cases should be placed in the hands of the profession, and I offer my experience and the lessons it has taught me, in the hope of furthering this object.

Case I. Papillomatous disease of right broad ligament intimately attached to much enlarged uterus; enucleation; posterior surface and fundus of uterus denuded of peritoneum; free haemorrhage; use of actual cautery; recovery. Mrs. R., aet. 32, suffering from an abdominal tumor, was sent to me in March, 1882, by Dr. Challacombe, of Bristol. She had been twice married, but had never been pregnant. A year previously, six months after her second marriage, she noticed that her abdomen began to swell, and in spite of irregular and occasionally profuse menstruation, supposed that she was pregnant, and made preparations accordingly. When the period of gestation seemed to have passed she consulted her medical man, who diagnosed ovarian tumor and sent her to me.

Her symptoms she considered to be those of pregnancy. They were increased frequency of menstruation, troublesome constipation, occasional attacks of sickness, and on one occasion, at least, a sharp illness, with abdominal pains and frequent vomiting, which lasted for two days and confined her to bed for a week. No medical man was called in. On two other occasions she had less severe attacks of the same nature, but considered them all as ailments of pregnancy. At these periods she was not conscious that the swelling decreased in size, but they were always immediately followed by flatulent distension. Uterine haemorrhage came on at uncertain intervals from a fortnight to two months, was sometimes scanty and sometimes profuse, and lasted from one to ten days at a time. She had lost flesh.

Her condition on examination was as follows: The whole of the right side of the abdomen was occupied by a soft, boggy, obscurely fluctuating growth. On the left side of the lower abdomen, extending as high as the umbilicus, and separated from the growth on the right side by a deep sulcus, visible through the parietes, was an irregular cystic growth in which fluctuation was obscurely perceptible. In the sulcus between these cysts a firm resisting body could be palpated, which, with the help of the sound, was made out to be the enlarged uterus. The growth was absolutely immovable. Per vaginam a soft,
fluctuating cyst which could not be disturbed from its position was felt in Douglas’s pouch. The uterus was high up just within reach of the forefinger, and admitted the sound to the extent of four inches. It could not be moved in any direction.

The operation was performed in private, Mr, Haisant administering ether and Mr. Bush assisting, and Drs. Challcombe and Yaffe being present. On entering the abdominal cavity the enlarged uterus appeared lying between the cystic growths and apparently intimately incorporated with them. The large cyst on the right side was tapped; milky fluid flowed freely till the growth was diminished in size about one-half and then suddenly stopped. The trocar being removed, the opening was drawn to the surface and enlarged so as to admit the hand to break up what were supposed to be secondary cysts. A handful of papillomatous material was removed and was followed by so profuse bleeding that sponges were packed into the cyst and the growths on the left side were attacked. From one cyst clear watery fluid, was removed, from another almost pure blood very dark in color. The cyst in Douglas’s pouch was beyond the reach of the trocar and was burst during manipulation. It was now evident that the growth was incorporated in the right broad ligament and was intimately attached to the whole of the posterior surface and the fundus of the uterus. The incision was enlarged upwards to the umbilicus and downwards as far as possible, and after the separation and ligature of a few adhesions to omentum and bowel and the diminution of the main cyst by removing blood clot and sponges, the whole was turned out and laid on the macintosh over the pubes and thighs. After a tedious process of dissection in which the actual cautery had frequently to be used on account of free bleeding from the uterine tissue, the growth was enucleated. The uterus was left without peritoneal covering anywhere on the posterior surface or fundus and only fragments of the right broad ligament remained. As the enlarged uterus lay over the pubes, all bleeding from its tissue was finally checked by ligature or cautery. The peritoneum in Douglas’s pouch following the uterus was close to the abdominal wound, and having been somewhat roughly handled, was closely examined to make certain that the rectum had not been torn. The right ureter was denuded and plainly visible. The left ovary showed incipient cystic disease and was removed. When all bleeding had been checked the abdominal cavity was sponged out, the uterus was returned to its place and the wound closed. Unwisely, perhaps, I did not insert a drainage tube. The operation lasted an hour and a quarter,

The patient, though seriously collapsed for a few hours after the op-
eration, made an excellent recovery under the care (in my absence) of Mr. Haisant. I believe that a considerable hæmatoma formed in the pelvis, which was the cause, three weeks later, of a considerable rise of temperature (104°), which, however, soon subsided. Metrostaxis came on immediately after operation and lasted for three days. Up to date the patient has continued in excellent health and has not menstruated.

Case II. Papillomatous Disease of Left Broad Ligament. Reliable history of rupture on at least twelve occasions. Enucleation of growth with denudation of fundus and part of body of uterus; free bleeding; actual cautery applied to uterine tissue. Recovery. Mrs. P., æt. 40, the mother of four children, was sent to me by Mr. Newstead, of Clifton, in September, 1884. She had an abdominal growth which had been very slowly increasing in size during four years. The most striking feature in the history was that about four times every year it had been the cause of serious illness, apparently from the rupture of a cyst. At the onset of the acute illness the abdomen suddenly decreased in size and became less tense. In the intervals it slowly increased for about three months, when rupture took place. During these intervals the only discomfort she experienced, apart from its bulk, was increased frequency of micturition and constipation, necessitating the frequent use of purgatives; at the period of supposed rupture she went through an illness which was always serious and sometimes alarming. Mr. Newstead had seen her in three of those attacks; and, in consultation with him, I saw her in a fourth. I had seen her just before the period of expected rupture and took measurements and made drawings of the sites of the main protuberances. The abdomen was distended from flatulence, so that measurements were useless, the superficial aspect of the enlargements was, however, much changed. One prominent cyst had completely disappeared and the others were apparently not so tense. She presented the ordinary symptoms of acute peritonitis, with small, rapid pulse, constant retching and vomiting, some rise of temperature and great prostration. The patient was so seriously ill that I thought the best chances of recovery would be got from immediate operation, and it was only Mr. Newstead's assurance that he had seen her through as grave attacks before, that prevented my urging active interference. It was decided to postpone operation till she had reached her best period, which was usually about a month after these attacks.

The growth was a very irregular one, and occupied chiefly the left side of the abdomen. On the left side, reaching to just below the ribs, was one smooth, soft-walled and not very tense cyst. On the right side, and springing out of the pelvis, were several small fluctuating pro-
tuberances, apparently the loculi of a polycystic growth. Between the
two and lying in a shallow groove lay the greatly enlarged uterus, into
which the sound readily entered for four and a half inches. Vaginal
examination revealed several small tense cysts in the retro-uterine cul-
de-sac. The os uteri was drawn up and the whole organ was abso-
lutely fixed, as was the tumor generally.

The operation was performed in private on October 9, 1884, with
the assistance of Mr. Bush and Mr. Haisant, who administered ether.
The proceeding was very similar to the previous one. The enlarged
uterus presented at the wound, and the growths were closely attached
to its left side, fundus, and some way down the anterior and posterior sur-
faces. A trocar was inserted into the large cyst, but very little fluid came
away. A cyst containing about a pint of clear bloody fluid and lying be-
hind the uterus was evacuated and lessened the immobility of the whole.
The hand was carried into Douglas’ pouch and after separation of a
few adhesions, the cysts which lay there were coaxed to the edge of
the abdominal opening and freely incised. By this means much ad-
ditional space was afforded for the enucleation of the large growth,
which was now proceeded with. A sound was inserted into the uterus
as a guide; for so closely was it incorporated with the growth that it
was impossible to say where the tumor ceased and the uterus began.
The growth was at first separated by dissection from the anterior sur-
face of the fundus, and then for some way down the posterior surface
and the left side. The bleeding was free, and as the dissection was get-
ing deeper became more difficult to control. I therefore enlarged the
incision and tried to deliver the main cyst. In doing this, its wall rupt-
ured and a good deal of ropy and papillomatous material escaped
into the peritoneal cavity. When the growth was delivered its separa-
tion from the posterior surface and side of the uterus was completed.
After the last cut blood welled freely from the uterus at the site of the
uterine artery. After failure with the actual cautery this was checked
by ligature. So closely was the growth adherent to the side of the
uterus that I found I had removed with the tumor a strip of muscular
tissue an inch broad and three inches in length. Practically no broad
ligament was left behind. As oozing from the denuded uterine surface
continued after the growth was removed, the actual cautery was some-
what freely applied, The right ovary appeared to be healthy and was
left behind. The cavity wás thoroughly cleansed, a glass drainage
tube was inserted and the wound closed, The operation lasted an
hour.

The patient was gravely ill for a week, with constant vomiting, very
rapid pulse and great restlessness. There was considerable discharge
of pure blood from the tube for four days, and of bloody serum for three days more, at the end of which time it was removed. Free metrostaxis came on at the end of a week with immediate amelioration of symptoms. For the first week she was fed entirely on nutrient peptonized enemata, large hot water injections being given to relieve thirst, once or twice daily. For flatulence she wore the rectum tube for hours at a time, and derived great benefit from its use. She rapidly convalesced and has continued in excellent health, menstruating regularly and without pain.

CASE III. Papillomatous Cystic Disease of Right Broad Ligament; suppuration in minor cysts; bladder much elevated and spread over tumor. Enucleation after denudation of part of uterine surface. Pyo-Salpinx on left side removed. Recovery. Mrs. G., æt. 47, a widow without children, was sent in June, '885, by Dr. Steele of Clifton, to the Bristol Infirmary. An abdominal tumor had appeared two years previously, in the right hypo-gastric region and had been slowly increasing since. In the last six months she had lost flesh a good deal. Her chief trouble arose from greatly increased frequency of micturition, amounting almost to incontinence. Several times there was retention and she had to get relief by catheterism. Constipation also had become a prominent symptom. She never got relief without the use of purgatives; frequently as many as four days passed without an evacuation, and on one occasion constipation was absolute for eight days. A curious feature, which had existed for some few months, was that she was unable to defaecate except in a nearly erect posture. She suffered a good deal of abdominal pain, chiefly from flatulence, but to some extent also in the tumor itself.

The lower and middle abdomen were occupied by what seemed to be two distinct tumors separated by a deep groove. Indeed, she was sent to the Infirmary as suffering from two ovarian growths. The larger growth, on the right side, was soft and boggy, but did not fluctuate and felt like a soft myoma. On the left side little more could be made out than that there was a nodulated growth there, on account of some undue thickness of the abdominal wall (found at operation to be thickened and adherent omentum) and the pressure of resonant coils of intestines overlying it. The os uteri could not be felt by the finger. The vagina was drawn up behind the pubes into a long narrow tube, the top of which, after repeated trials, could never be reached. The vagina was crowded forwards by lobulated cystic growths, which filled Douglas’ pouch and pressed on the rectum. The growths here were
very tender to the touch and the examination caused considerable pain.

She went out and returned in six weeks suffering from what appeared to be a sharp attack of peritonitis. For a fortnight she was ill, with frequent vomiting, quick pulse, high evening temperatures and great abdominal pain, with flatulent distension. This greatly reduced her strength, and when I returned from a holiday to operate at once, her condition was not at all favorable for the performance of a grave operation. The main growth was now distinctly fluctuating.

The operation, performed in the operating room of the Bristol Infirmary, was a difficult and troublesome one. On making a two-inch incision in the ordinary situation, instead of entering the peritoneum, I came upon a soft, polypoid body, which bulged through the opening. A sound passed through the urethra showed this to be the bladder, completely empty but much drawn upwards. The incision was extended to the umbilicus and, when the peritoneum was divided, it was found to be adherent to dense, thick omentum so intimately that, instead of trying to separate it, it was deemed best to continue the incision through it. After the application of double ligatures this was done to the extent of the external wound. The bladder bulged into the opening, interfering with manipulation, so a flat sponge was packed in over it, which, somewhat ineffectually, kept it out of the way.

The uterus, greatly enlarged, lay under the opening, and the growth covered by the same peritoneum and apparently continuous with it on the right side, surrounded it. The whole was so firmly fixed that the cysts could not be rolled under the abdominal opening to be tapped. From the large cyst on the right side milky fluid flowed freely to the amount of about two pints and then stopped. The trocar was removed and the opening closed by large pressure forceps. The cysts on the left side were now attacked. From one flowed clear reddish fluid, from another pure pus, which some of the bystanders thought to be putrid. This decided me to try no more tapping at such a distance from the surface, so the opening was closed by forceps, a few sponges were packed into the pelvis, and the separation of the growth proceeded with.

A mass of thickened tissue, over which lay an enlarged Fallopian tube, which extended from the right cornu of the uterus over the growth, was surrounded by a ligature in the expectation of cutting off some of the blood supply. The growth was then rapidly cut away by scissors from the side of the uterus and from the bladder, forceps being applied at every step to check the free bleeding. The ligature at the cornu of the uterus appearing insecure, I transfixed beyond it and tied the mass in a Staffordshire knot. In doing this it was felt that the
uterine cavity had been entered. When the prolonged dissection was completed the fan-shaped bladder lay partly free, partly over the uterus, and a raw surface as large as the palm of the hand belonging to the uterus, part of broad ligament and part of bladder was left. The minor cysts were now separated from numerous attachments in the pelvis—one suppurating cyst being ruptured in the manipulation—and the whole growth removed.

During these manipulations the uterus was curiously immovable. The cause of this was now found in a second cystic growth as large as a goose's egg, attached high up in the abdomen near the left kidney, and dragging with it the left broad ligament enormously thickened and enlarged. The fundus uteri, left to itself, reached as high as the umbilicus. This cyst, lying in a mass of dense inflammatory tissue, was enucleated and ruptured in doing so, its contents, pure pus, escaping into the abdominal cavity. When it was removed, a hard, uncollapsed cup of inflammatory material was felt, into which the finger tips could be inserted. This hollow and the whole of the abdominal cavity were carefully sponged out, a glass drainage tube was inserted and the wound closed. The operation lasted an hour and a quarter.

The patient was much collapsed for a few hours, but rallied and made an excellent recovery. There was no sickness nor trouble from flatulent distension, and her temperature, taken every four hours, continued normal throughout. Metrostaxis appeared at once and lasted, in considerable amount, for six days. The tube, from which a good deal of blood and bloody serum escaped, was removed on the fourth day.

These operations were performed with full Listerian details, ordinary gauze dressings being employed, which were removed at the end of a week, when the stitches were taken out.

The points of resemblance in these three cases as to clinical signs and symptoms, peculiarities of operative procedure and nature of growth removed, are too close to be merely casual. They belong to a class which is not uterine and which is not ovarian. They lie chiefly in the broad ligament and they contain cauliflower papillomatous growths. While not pretending to offer opinions as to their exact nature and pathological origin, for which the material at my disposal is insufficient, I have no hesitation in placing them in the class which Mr. Alban Doran describes as "Papillomatous Disease of the Broad Ligaments." Leaving the pathology in his competent hands, I shall here shortly sum up whatever clinical features
they seem to have in common. Such summary must necessarily be only a skeleton outline, for the rarity of the disease and the paucity of recorded cases afford scant material to work upon.

The leading characters of the growths removed will have been gathered from the descriptions of the operations. In all there was one large thick-walled main cyst, occupying one side of the abdomen, embedded in the broad ligament and sessile on the uterus. In all, also, there were several subsidiary cysts, most of them thin-walled, with thin-clear or bloody fluid, some of them purulent, and in the third case two of them containing papillomatous growths. In no one was there the slightest vestige of a pedicle. In the first and second cases the large cysts were about half filled with papillomatous material, in the third case there was papillomatous growth in two small cysts as well as in the large one, but only in small amount, perhaps filling one-fourth to one-sixth of the cavity. In the first case the position of Fallopian tube and ovary is not mentioned in my notes, and the tumor was destroyed. In the second case the Fallopian tube, much enlarged, was spread out on the anterior surface of the main cyst, and the ovary, much atrophied, lay on the cyst-wall above the tube. In the third case the ovary was distinctly made out in the tumor-wall, and the tube was a prominent object over the top of the large cyst.

I shall now summarize such clinical features as, being in harmony with pathological facts, may fairly be regarded as worthy of trust in leading to a diagnosis.

1. In their growth the tumors are markedly a symmetrical. Springing as they do from the broad ligament and having no pedicle to permit their escape from the pelvis, they are fixed down on one side and cannot, when large, rise to the position of least pressure in the middle of the abdomen. Minor cysts bulge out where they can find room in the pelvis or on the side not occupied by the main cyst; but their aggregate bulk and arrangement is not such as to produce a balancing symmetry. Cases of ovarian disease are rarely so persistently one-sided and so irregular in shape as these, and they are not so deeply nor so firmly attached in the pelvis. With the rare
fibro-cystic disease of the uterus, so far as the few recorded cases show, cystic disease of the broad ligaments is less likely to be confounded.

2. Another peculiarity would seem to be the multiplicity of cystic growths. It is not merely a multi-locular cyst, one large cyst divided by septa into several; it is a development of several separate cysts, each sessile on a common base. This peculiarity is more marked in my cases than in those shortly related by Mr. Doran. In each was found one major cyst, and in each this cyst, from its papillomatous contents, appeared to fluctuate less freely than its companions. The others were crowded into the pelvis occupying Douglas's pouch and into the side of the abdomen unoccupied by the large cyst. Their walls were thin and fluctuation was usually plainly to be elicited.

3. A third peculiarity of papillomatous disease of the broad ligaments is its immobility. From the very beginning and all through its progress it is absolutely immovable, in its deeper parts at least, to such force as can safely be applied. In the pelvis through the vagina this sensation of resistance was peculiarly unyielding. It is doubly fixed by the broad ligament in which it mainly lies, and by the minor cysts packed in the pelvis which spring from it.

4. A fourth point is enlargement and elevation of the uterus. In my third case the uterus was drawn up out of reach, in the others it was elevated; in all it was much enlarged. That the uterus should be enlarged is readily conceivable from its close physical and vascular connection with the very vascular growth. That it should be elevated is a necessary consequence of the direction of the tumor's growth and of the attachment of the uterus to it. This enlargement was in excess of what is at all common in ovarian cystoma, even when adherent to the uterus. The situation of the uterus in these cases was midway between the cystic growths bulging over it, and placing it at the bottom of a sulcus visible through the abdominal walls; but it is conceivable that it might be completely overlapped in front and pushed backwards, or vice versa. If a sound introduced into the bladder showed elevation of that viscus, we should look upon it merely as a sequence of elevation of the uterus.
5. As a corollary from preceding propositions, we might infer physical interference with the processes of defaecation and micturition. The growth, being fixed in the pelvis and there undergoing enlargement, of necessity presses upon the hollow viscera. In the third case frequency of micturition was the most prominent symptom; in the other two it was marked enough to require special comment in my notes. In the third case, also, as might be expected, the difficulties in defaecation were most urgent. A curious feature in her case was that she could defaecate only when standing, probably because the sitting posture forced the growth downwards into the pelvis.

6. It would seem that papillomatous cysts everywhere are peculiarly liable to undergo rupture. In the second case there was an extraordinary and perhaps unique history of rupture on at least twelve occasions. In the first and third acute symptoms existed on several occasions which were compatible with rupture. Mr. Doran comments on this tendency of papillomatous cysts to burst, and lays particular stress on the clinical importance of this fact in reference to the likely result of general infection of the peritoneum. In my cases I think that any rupture which took place was not of the large papilloma-bearing cysts, but of the small thin-walled cysts not containing papilloma. Several puckered cicatrices in the sulci between these small cysts, which were observed after removal of the growths in two of the cases, lend probability to this view. Mere leakage through a small opening without the formation of a large rent, as it is pathologically the most common mode of escape of the fluid contents, would not produce very acute clinical signs. If the rupture is not of a large cyst, we should not expect much diminution in the size of the abdomen, nor marked relaxation in the tension of its walls.