BAER, (B. F.)

A CASE

OF

SUPPURATING CYST OF THE BROAD LIGAMENT.

RUPTURE INTO THE BLADDER.

LAPAROTOMY AND REMOVAL.

Read before the Obstetrical Society of Philadelphia, April 5th, 1883.

BY

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A CASE OF

SUPPURATING CYST OF THE BROAD LIGAMENT.

RUPTURE INTO THE BLADDER. LAPAROTOMY AND REMOVAL. DEATH.

BY

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On February 12th, 1883, my friend, Dr. John W. Snowden, of Waterford Works, N. J., sent me the following communication:

"I have a case of abdominal tumor, probably ovarian, which I would like to have you see with me. I first saw the patient three weeks ago, and found her in a state of extreme prostration, with a great deal of nausea, occasional vomiting, and complete anorexia. There is a small, but painful, tumor in the left iliac region, with extreme tenderness throughout the lower part of the abdomen, together with great irritability of the bladder. I was anxious to have a consultation during the first week of my attendance, but the patient improved so promptly under the use of anodynes and quinine that her friends objected. The tumor also seemed to diminish considerably in size, and to spread or flatten out. The improvement was only temporary, however, and she is now running down again. The tumor has increased to the size it was when first seen by me."

Two days afterwards, I saw the patient in company with Dr. Snowden, and obtained this additional history:

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M. S. is aged thirty-one years, has been married seven months, but has not been pregnant. Puberty occurred at fourteen years, after which the menses recurred regularly for about a year. During the second year of her menstrual life, there was an almost constant slight metrorrhagia. After this, the menses were absent for a time, and they have been irregular ever since.

At the age of eighteen, after severe exertion, she was seized with such violent pain in the pelvis that she was compelled to lie quietly in bed for several weeks. Her physician diagnosticated "prolapse of the womb." After recovering from this, she remained comparatively well during the next seven years. She then contracted a severe cold while skating, which resulted in suppression of menstruation a second time. After that the menses recurred in the summer months only, and gradually grew less frequent until the summer of 1881, when they did not appear, and have remained absent since.

In February, 1880, she began to suffer from "chills," accompanied with fever and night-sweats. She would recover from the attacks, but they have returned unexpectedly, and at irregular intervals since. In June, 1881, whilst in the act of carrying a tub to the cellar, she was seized suddenly with a violent pain in the left ovarian region. This became so severe that she was obliged to remain in bed several weeks. About this date, she noticed a "lump or swelling" in the left iliac region. This was sometimes full and prominent, and at others it would seem to have diminished in size, and to have lost its rounded form. At times, she would complain of feeling "bloated or filled with gas or wind," and as though something were being torn away from the spot occupied by the "lump."

In July, 1882, she was well enough, as she thought, to marry. This was, however, more for the purpose of consummating a long engagement than from a sense of propriety. After her marriage, her health seemed to improve for a time, but on November 27th, she was again attacked suddenly with pain in the same region as on the former occasions. This time it did not subside, but continued with increased violence. Soon after the occurrence of the first chills in 1880, she began to lose flesh, but the loss had been very gradual and slow until the last exacerbation, since which she had lost weight very rapidly.

She was now extremely emaciated, and presented a hectic flush on each cheek. Her pulse, which numbered 120 per minute, was small and weak, and her temperature ranged from 100° to 102°, morning and evening. The rigors and sweating had returned.

Physical examination.—The hypogastric and left iliac regions were distended by a rounded mass, apparently about the size of the fetal head at full term. Palpation over and around the growth gave evidence that it was circumscribed and as tense as a drum, but not hard and firm, as is the case in a solid growth. Percussion gave a tympanitic resonance all over the tumor. The vagina was narrowed by the pressure on its anterior wall of a mass of indurated tissue, which appeared to be connected with the bladder,

and to extend up and into the lower edge of the tumor. The uterus occupied a position posterior to the tumor, and was retroverted to the first degree. Douglas' cul-de-sac was occupied by a thin-walled, fluctuating cyst, which appeared to be about the size of a large orange. This was impacted between the uterus and sacrum, and, although it was not fixed by inflammatory adhesions, it could not be dislodged from its position on account of the sacral promontory and the posterior inclination of the uterus, which lay upon it. The uterus was therefore between two tumors, the larger one in front of and above it, and the smaller one below and posterior to it. The organ was slightly mobile from side to side. Combined vagino-abdominal palpation showed the larger tumor to be entirely out of the pelvis, and not closely attached to the uterus; but over the lower portion of the hypogastrium (the location of the indurated tissue noted above), the tumor seemed to rest on the bladder, and to be adherent to it. The sound introduced into the bladder confirmed this.

It was clear, from the history of the case and the physical signs, that we had to deal with a slow-growing cyst, which had probably been secreting pus since the occurrence of the first "chills," three years before; in proof of which we have the evidence of a mild form of septicemia, in the irregular attacks of rigors and fever, with nausea, and the gradual emaciation since that time. The tympanitic resonance in the cyst showed its contents to be in a state of decomposition, resulting in gaseous formation. It was evident that the tumor was upon and adherent to the bladder. It appeared to be a monocyst. What was its origin? The history of its development and its location—entirely above the pelvic brim—strongly indicated that it was not an adventitious cyst, the result of pelvic inflammation. In its size and the slowness of its growth, it resembled somewhat a parovarian cyst, but the character of its contents made its origin from that source very improbable, as it is exceedingly seldom that suppuration takes place in such a cyst. I know of no recorded case. The history of interference with the menstrual function, the sudden attacks of pain extending over such a length of time—thirteen years since the first one—and the presence of pus in the cyst, gave strong evidence in favor of ovarian disease of inflammatory origin.

Our patient was dying from septicemia, and if she was not already beyond rescue, she undoubtly soon would be if not relieved.

I advised laparotomy, for the purpose of removing the cyst, if possible, or, if that should be found impracticable, to then evacuate its contents and establish drainage; and on February 16th, with the aid of Drs. Snowdon, William L. Taylor, W. A. Davis, A. W. Johnstone, and J. C. Bagg, I proceeded to operate. But we were doomed to meet with another grave complication, for when the catheter was passed preparatory to beginning the incision, several drachms of very fetid pus flowed through it. The cyst had evidently opened into the bladder, but I decided to go on with my original plan.

An incision about two inches in length was very carefully made

through the linea alba, midway between the umbilicus and mons Veneris, sloping towards the peritoneum, through which an opening was made just large enough to admit one finger. With this I explored the abdominal cavity, and established the correctness of the diagnosis as to the presence of a cyst and its adhesions. Anteriorly it was adherent to the abdominal wall, and its lower surface was closely attached to the bladder, upon which it was lying. There were no intestinal nor uterine adhesions. I now determined to attempt the removal of the tumor, and therefore separated it, with some difficulty, from its attachment to the wall of the abdomen, and then increased the incision to six inches. I next passed a small aspirating needle through the cyst-wall, and drew off about a pint of very fetid pus and a quantity of gas. A sound was then passed into the bladder, and, after some maneuvring, through the opening into the cyst cavity. This served as a guide to the careful manipulations which were necessary to separate the cyst-wall from that of the bladder, without further injury to the latter viscus, and this I finally succeeded in doing. The pedicle of the tumor, which consisted of the broad ligament and a portion of the Fallopian tube, to which the left ovary was adherent, was transfixed and ligated and the tumor removed. The cyst in Douglas' pouch was now dislodged from its nest, and, after ligation of its pedicle, removed without evacuation of its contents. It proved to be a cyst of the opposite broad ligament. The right ovary and Fallopian tube being in a healthy state, were not removed. At this stage of the operation our patient, who was very weak to begin with, appeared to be dying, and it was only after repeated hypodermic stimulation and the application of external heat supplied by bottles of hot water, that she rallied. During the efforts of my friends at resuscitating the patient I was engaged with the most difficult problem which the case presented—that of closing the bladder. My plan was to elevate the organ, freshen the edges, and pass sutures. But it was so completely bound down that I could not bring it up, and I was, therefore, compelled to make my efforts at a great disadvantage. I next attempted to pass a suture with the organ in situ, hoping by that means to be able to draw up that portion of the vesical wall in which the perforation existed; but in this I failed, because the tissues were so soft from apparent degeneration that the needle would tear through them as soon as introduced, and I was reluctantly compelled to cease my efforts at closure by that means. It was suggested that the surfaces around the opening might be grasped by a Péan's forceps and the instrument allowed to remain, the handles being brought out of the lower angle of the abdominal incision; a plan wholly inapplicable, because the tissues were in so soft and friable a state that they would very likely have broken under the pressure of the clamp, thus enlarging the hole in the bladder.

What was to be done? The patient was sinking, and immediate decision was imperative. In this dilemma the thought suddenly occurred to me that our efforts to close the opening by

suture were unnecessary, because, in the separation of the adhesion, we had already furnished the means of closing it. The perforation was very small, just large enough to admit the sound; it was valvular, as is usual in suppurative perforations, and it was surrounded by a roughened, vascular surface, the result of separation of the adherent cyst from the bladder, and around it. The compression to be furnished in the external dressing would cause these freshened surfaces to be pressed together over and around the perforation, and by their immediate union would close it effectually. Acting on this idea, I at once thoroughly cleansed the peritoneal cavity, saw that all bleeding had ceased, adjusted a drainage tube, placed a catheter in the bladder, and closed the abdominal wound. The drainage tube was adjusted at the lower angle of the incision. The patient was now removed to bed, where she was wrapped in a warmed blanket and surrounded by bottles of hot water. She returned to consciousness quickly, and expressed great gratification on learning that the tumor had been removed, and said that she felt more comfortable than she had done for weeks. But her pulse and temperature did not improve, and although everything in our power was done to bring her out of it, she lingered in this condition until the next day, when she gradually sank, and died at noon.

When the catheter was introduced into the bladder, after the operation, pus first flowed through it, but this was gradually changed, so that within three hours *almost pure urine flowed, and this continued until the death of the patient. Not a drop of anything flowed through the drainage tube.*

The larger specimen, which I present, is a monocyst with a thick wall and a thick pyogenic membrane constituting its inner layer, whilst externally it is covered by a smooth, shining layer—the peritoneum. The ovary which is attached to it is in an apoplectic condition.

A review of this rare and, in some respects, unique case cannot fail to be profitable. Did we err, in view of the extremely bad condition of the patient, in advising an operation for her relief?

The presence of pus in a cyst always seriously complicates operative interference, and where extensive adhesions exist as well, and especially if the adhesions be vesical, the gravity is greatly increased; but where, in addition, the cyst has opened into the bladder and the patient suffering from purulent infection, as in our case, the prognosis becomes extremely unfavorable, if not necessarily fatal. It is also probably true that, if all the cases were reported, it would be found that a fatal result often, if not generally, follows the removal of suppurating cysts, even though the adhesions be not extensive; but where

the case is abandoned recovery is so extremely rare that our best authorities agree that almost no case should be considered beyond the reach of some kind of surgical aid.

There is not much literature on this subject, but there is enough to establish the soundness of the above principle. The following case, by the late Dr. W. L. Atlee, is a strong example:

"*Pyogenic ovarian cyst, surrounded by a mass of plastic lymph, producing rapid and extreme emaciation.*

July 27th, 1870, I operated on Mrs. W. H. B., aged twenty years. She had been tapped four times—the last time two weeks before—removing four quarts of purulent fluid each time. Before this acute attack her weight was one hundred and sixty pounds.

The cyst was immovable, and was diagnosed to be adherent at every point. Emaciation was extreme. . . . Supposed weight did not exceed sixty pounds. The tongue was very red, the pulse very small, slightly tense and quick, and one hundred and twenty to the minute.

On making a section of the abdominal wall, its structure was found to be entirely altered by inflammatory action, and the line of demarcation between it and the cyst consisted of a layer of coagulable lymph, which sealed them intimately together. The cyst, having been detached from the inner face of the abdominal wall, was emptied by the trocar of several pints of pure pus. It was now found to be adherent to everything it touched—intestines, uterus, and bladder—by a thick layer of plastic lymph. It was enucleated from this bed by shelling off the layer of lymph, which entirely invested and shielded the above-named viscera. . . . On placing the patient in bed, on her back, the spinous processes of the vertebræ were rendered so prominent by the extreme emaciation that rolls of cotton had to be placed on each side to balance and protect her.

The above case not only demonstrates how rapidly a small tumor—fifteen pounds in weight—may emaciate a patient and destroy her vital powers, but it is particularly valuable in establishing the propriety of the operation of ovariotomy. Two weeks before the operation, paracentesis was followed by nearly fatal results, and the symptoms were so grave that her physicians assured me that, in their opinion, she must sink under another tapping. Indeed, death seemed to be impending, and was daily expected. Ovariotomy was offered only as a forlorn hope, and happily was successful."—(Ovarian Tumors, p. 33.)

Peaslee says that "inflammation and suppuration of the cyst itself does not necessitate an unfavorable result of ovariotomy.

On the contrary, there is usually a remarkable subsidence of the febrile and other unfavorable symptoms immediately after the operation. I have operated successfully on a patient with a suppurating dermoid cyst, with a red tongue and total anorexia, whose pulse had been one hundred and thirty for two weeks previously. The pulse fell gradually after the operation, till at the end of twenty-four hours it was seventy-four per minute; the fever disappeared, and the appetite returned in forty-eight hours, and not a single bad symptom occurred during the patient's rapid convalescence. Mr. Wells reports three very striking cases of the kind, in which the falling of the temperature and the disappearance of the fever after the operation were remarkable. In one of them the temperature fell from 101.4° to 98.4°, and the pulse from 120 to 100 in six hours after the operation. In one of Dr. Keith's cases the cyst became inflamed and gangrenous about a week after tapping. The pulse rose to 120, and tympanites and active peritonitis supervened. The patient was better almost immediately after ovariotomy, and made a good recovery."—(p. 361.)

It will be noticed that in two, at least, of the cases above quoted, tapping had been resorted to for the relief of the grave symptoms, but it resulted in their aggravation. Simply removing the contents of a suppurating cyst by tapping or aspiration is worse than useless, because it does not remove the source from which the pus is formed nor establish a means of outlet for it, as secreted. Moreover, active inflammation and hemorrhage are far more liable to result, in a cyst of this character, because of its greater vascularity and consequent irritable condition.

Incision and drainage was the only alternative of removal, except to abandon the case. It may be urged that, as nature had established drainage by the opening into the bladder, time ought to have been given to allow her to relieve herself. But nature finally did here, very imperfectly, what she had been begging science to do at each attack of septicemia during three years. The drainage was very imperfect, because the perforation was small—just large enough to relieve the overflow—and by the most unusual and most dangerous channel. Then, it is very doubtful if nature ever permanently cures herself by this means. The usual, if not constant, history

of these cases is a very gradual drainage, by a sinuous track, until the subject is worn out. Or the flow of pus may cease, the sinus close, and apparent recovery result, when suddenly the cyst begins to refill, and opens somewhere else, this process being repeated until the patient finally succumbs to the disease. Therefore, it is not simply a justifiable procedure to aid nature in the effort to rid herself of this source of infection by establishing rapid, full, and constant evacuation of the pus sac by means of incision and a drainage tube, but it seems to me malpractice to refuse to do it.

A typical case, in support of this principle, is recorded in the AMERICAN JOURNAL OF OBSTETRICS for March, 1883, by Dr. Geo. F. French, of Minneapolis, Minn., in an excellent article on the "Treatment of Ovarian Cysts Having Formidable Adhesions, by Incision and Permanent Drainage."

"An ovarian tumor, 'about the size of a five-months' fetal head;' was discovered in March, 1880, tapped, refilled, and in April, 1881, inflammation suddenly occurred in the cyst, followed by discharge of pus and ovarian fluid by the rectum, and collapse of the tumor. Discharge of pus continued three months, during which time the patient's weight fell from one hundred and forty to seventy pounds. When discharge of pus ceased, the tumor again increased in size, the appetite returned, and with it increase in strength and flesh. Several months after, a swelling made its appearance in the left inguinal region, soon extended towards navel, near which it burst, discharging a great quantity of fetid pus. The discharge continued up to the last of September, always copious and fetid, sometimes sanious—when it ceased, and the opening closed. . . . The following month, however, the sinus reopened and discharged constantly all that winter. In the spring of 1882, her strength again began to fail, the stomach rejected food, emaciation ensued, and dissolution seemed impending. At this juncture, she again unaccountably rallied, regained her appetite, and in a measure began to recuperate, in spite of the copious and persistent suppuration. I first saw her September 24th, at which time her weight was eighty-five pounds. . . . Four days later, I made an exploratory incision. The tumor, which was about the size of the fetal head at full term, was found to be firmly adherent to the intestine everywhere, except its upper surface. Not even the slightest space between the tumor and intestines could anywhere be discovered. There was no attachment to the uterus, bladder, or other abdominal viscera. Its enucleation was at once considered; but after separating a portion, in area equal to the surface of the palm of the hand, without discovering any lamination, but with the feeling that I was digging into solid tissues, instead of separating layers, I became alarmed lest I should make

matters worse, and desisted. . . . The tumor full of pus was tapped, and the orifice was attached by sutures to the abdominal incision, through which a Thomas glass drainage tube was introduced into the tumor, and the abdomen closed in the usual manner.

Pus flowed from the drainage tube in gradually diminishing amount, until, about the thirtieth day after the operation, it ceased, and the pyogenic membrane seemed to be destroyed. The patient made a good recovery."

I am indebted to Dr. Goodell for the notes of the following unpublished case, in the operation upon which I had the honor of assisting him.

"B. R., æt. thirty-two; married; two children; youngest eleven years. She was for some time an inmate of one of our hospitals, where she was treated for typhoid fever, followed by pain in the left groin, and later by pus in the urine. She was then examined carefully and treated for cystitis. Not improving, she left the hospital and was brought to me, October 3d, 1881, by Dr. Charles A. Currie, who had discovered a tumor. Her catamenia were absent from February to July, but had been regular since then. Large quantities of pus, sometimes mixed with urine, sometimes almost pure, came from the bladder.

I found a cystic tumor as large as a child's head above the left groin. It extended down the left side of the womb, pushing it to the right. The uterus was slightly mobile, and measured three inches.

Diagnosis: Suppurating ovarian tumor, which had opened into the bladder.

After waiting more than three months, and finding that the flow of pus did not diminish, I, on January 24th, 1882, made an abdominal incision and found that the tumor was undoubtedly an ovarian cyst, and not a pelvic abscess. It contained about a quart of pus, was wholly attached to the bladder, and ran down on the left of the womb into Douglas' pouch, to which it was also attached. It had plainly a communication with the bladder, for pure pus was often passed distinct from urine. This opening I could not find, and it was evidently either valvular, or high up on the cyst, because the latter was always full. I put a glass drainage tube in, and stitched the opening of the cyst to the incision. I did not attempt to remove the tumor, because it was so adherent to the bladder, uterus, and all the pelvic tissues that its free surface was not larger than a silver dollar.

Pus was found in the urine on the next day after the operation, but not afterwards. The drainage from the tube was at first great, but it gradually grew less, so that on the sixteenth day from the date of incision it was removed, and a rubber one inserted. She eventually got perfectly well, and was married to a second husband, a few months later."

Whilst these two cases give the strongest kind of evidence favoring incision and drainage, and furnish a method of treatment for just such cases, they should not be allowed to weigh against what ought to be a fundamental rule, viz., that, where it is at all practicable, the tumor should be removed. In both, drainage had been progressing for a long time previous to the operation, and they were therefore accustomed to it, and, what is of greater importance, they were by the outlet which the pus had found protected from the absorption to which my patient was constantly subjected. Consequently, their blood was in a much better condition to rebuild itself and the other tissues than in my case. In them, pulse and temperature were not much impaired, and appetite and strength were fair. Just the opposite existed in our patient. There were no important adhesions in the latter case, except those of the bladder, which are always formidable, of course, but not necessarily fatal, whereas in the former the attachments of the tumors were so extensive that removal would have been impossible without fatally wounding important viscera.

I considered my case beyond the power of recuperating under drainage, accepted the other alternative, and removed the cyst.

Mr. T. Spencer Wells, speaking of drainage, says: "Even then patients are so apt to suffer from the ill effects of long-continued suppurative processes, that I am more than ever confirmed in the opinion that it is better, even at considerable risk, to remove a cyst, if at all possible, than to trust to any mode of drainage." (Ovarian and Uterine Tumors, p. 176)

Our patient died from the exhaustion brought about by the long suffering, and constant presence of decomposed pus in the cyst, and not alone as a result of its removal. Undoubtedly, the operation was the *immediate* cause of death, but it gave her a chance for life, and did not shorten it many days.

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