Barton (J. M.)

SURGEON GEN'L'S OFFICE
345
LIBRARY

A REPORT OF SOME CASES OF ABDOMINAL SURGERY.

BY J. M. BARTON, M. D.,

Surgeon to the Jefferson Medical College Hospital, Philadelphia, etc.

(Read before the Philadelphia County Medical Society, and the specimens exhibited at a meeting held April 11, 1888.)

GENTLEMEN:—By invitation of your Board of Directors I submit specimens this evening from cases of abdominal surgery, and present the following notes for your consideration:

Abscess of liver. Free incision and drainage; recovery.—George B., aged thirty-eight years, was admitted to the medical wards of the Jefferson Medical College Hospital, July 29, under the care of my colleague Dr. Neff. The patient was suffering with an immense abscess of the liver, extending the area of the percussion dulness to below the umbilicus and to the left of it. At the request of Dr. Neff, I removed by aspiration more than a quart of "brick-dust" colored pus, with such relief that the patient was able to return to his home in the interior of the State. The abscess cavity rapidly refilled, and he returned to the hospital, when we decided to operate by the method of Dr. Ransohoff, of Cincinnati; making an incision through the abdominal wall, five inches in length, at the outer edge of the right rectus muscle, permitting it to gap, fastening the edges of the wound by sutures to the liver, and when firm adhesions had taken place, opening the liver by the galvanic knife. When adhesions were found to have formed, and I attempted to divide the tissues of the liver with the galvanic knife it did not act well; at first, while white-hot, it would cut readily, but the resulting very free bleeding, quickly short-circuited the current and the knife became instantly cold. After repeated trials it still proved so unsatisfactory that an ordinary scalpel was substituted, with which the pus cavity was reached. An attempt to check the bleeding from the margins of the incision, by the cautery knife, was also unsuccessful, and it was only by filling the wound with a number of rubber catheters, which happened to be at hand, that the hemorrhage was controlled.

The abscess cavity was washed out daily with various antiseptics; it gradually closed, and the patient was discharged cured. When Dr. Neff saw him the following December, his weight was one hundred and fifty-six pounds, his pulse beat eighty to the minute, and he had no evidence of hepatic disease.

From: Phila. Med. Times, 1887-8, XVIII.

SURGEON GEN'L'S OFFICE LIBRARY

345 Box

Epithelioma of the œsophagus; gastrostomy; death.—John T., aged forty-two years, a patient of Dr. Joseph Lopez, of Philadelphia, was admitted to the Jefferson Medical College Hospital, December 5, 1884. He had suffered with difficulty in swallowing for one year, which had gradually increased until, at the time of admission, he had taken no nourishment whatever into his stomach for a week, and but little for the last two months. He was greatly emaciated. He could drink as much as three ounces of fluid, which would be immediately ejected with great force. A bougie could be passed readily to within four inches of the cardiac orifice of the stomach, when it was suddenly arrested.

I performed gastrostomy December 9, assisted by Drs. S. W. Gross, Brinton, Pancoast, Hearn, and others. An incision two and a half inches long was made parallel to the margin of the ribs on the left side, and about one finger-breadth from them, beginning at the outer edge of the rectus muscle. As soon as the peritoneum was opened, the stomach appeared and its identity was verified by those present; six sutures were used to bring the viscus in contact with the abdominal opening, two at each side and one at each end. Each suture was made by placing two needles upon a fine silk thread; one of them was carried between the muscular and mucous coats of the stomach for about one-third of an inch and brought out, both needles were then carried through the abdominal walls about one-third of an inch apart. Traction upon these sutures brought the walls of the stomach in close contact with the parietal peritoneum. None was tied until all the sutures were in in place. A silver wire suture was introduced through the outer coats of the stomach about the centre of the portion exposed, to serve as a guide when the stomach should be opened some days later.

The patient suffered no pain or other inconvenience from the operation, and had no evidence of peritoneal inflammation, but notwithstanding that the nourishment by rectum was continued and well retained, he lost ground so rapidly and his exhaustion was so great, that we opened the stomach on the second day instead of waiting for the fourth or fifth day as is customary. Immediately on opening the stomach a rubber drainage-tube was introduced and, by a funnel inserted into the tube, several ounces of warm milk were at once given, and though this was repeated every few hours he continued to sink and died two days later, or four after the operation.

Large uterine fibroid. Exploratory incision; universal adhesions preventing removal of uterus or of ovaries; recovery.—Miss Mary A., aged thirty-six years, school teacher, was sent to

me by Dr. James Graham, in February, 1885. She had a large submucous fibroid, causing the uterus to rise above the umbilicus. The increase in size was first noticed one year ago. She formerly had some irritability of the bladder, which had now ceased. Her menstrual periods usually lasted about ten days. The ergot which Dr. Graham had prescribed for her was continued, and operation not advised. The hemorrhage, however, gradually increased, until by the latter part of April, when I again saw her, she had been obliged to abandon her occupation, and had been unable to leave her house for a month.

April 27, 1885, assisted by Drs. Da Costa, Edward and Percy Graham, and Dr. Koons, I made an exploratory incision in the median line, between six and seven inches in length. The bladder was found entirely above the symphysis, and in the line of the incision. By pushing it downward and increasing the incision upward, I was able to gain access to the pelvis.

The uterus was greatly and irregularly enlarged and everywhere adherent to the surrounding structures. The intestines were so firmly fastened together that we were unable to find or remove the ovaries. The abdomen was closed with silk in the usual manner. The patient made an uninterrupted recovery. Full antiseptic precautions had been taken.

There are some points of interest connected with the subsequent history of this case. Though previous to the operation she almost invariably bled for ten days at each menstrual epoch, and at least twice between the menstrual flows, immediately after the operation the excessive bleeding ceased, and for nearly two years she regularly menstruated but three or four days; she did not lose more than the one-fourth of the quantity each day that she had prior to the operation and there was no bleeding whatever between the menstrual periods.

Her menstrual periods have gradually and irregularly increased until now, nearly three years after the operation, I find in my last note made this year, "No bleeding between menstrual periods, menstruation lasts from three to ten days, when the latter the bleeding is slight most of the time."

Her pains have ceased since the operation, her general health has greatly improved, and she looks much younger. Ever since the operation she has been, and is now, following her occupation as a school teacher. Nothing was done at the operation to account for this improvement, which is great enough to have been considered quite a success, if the ovaries had been removed.

The tumor is gradually increasing in size, and is now beginning to interfere with respiration.

The next case is one of so much interest that I am anxious to have it on record, though the principal part of the operative treatment was not performed by myself. The laparotomy was performed by my colleague, when I was a member of the staff of the German Hospital, Dr. F. H. Gross, during his term of service; the herniotomy by myself, during my term, though we were both present and took active part in both operations. I am indebted to Dr. Gross for permission to report this case.

Strangulated hernia. Operation; loss of nine inches of intestine; subsequent laparotomy; several feet of bowel found obstructed by inflammatory deposits; bowel above the obstruction joined to bowel below the obstruction; recovery.—Frank F., aged eighteen years, was admitted to the German Hospital on the evening of March 3, 1884, with a strangulated right inguinal hernia of eighteen hours' duration. On opening the sac of the hernia nine inches of the bowel were found to be in a sloughing condition. The ring was nicked, the healthy ends of the bowel made to protrude, and the gangrenous portion incised. We proposed, on the next day, to freshen the edges of the healthy bowel and bring them together. By the following morning the patient had developed an intense peritonitis with a temperature of 104°, and the operation was postponed. After a week of severe illness he recovered, the sloughing bowel having separated in the meantime.

Some weeks later, as he was slowly emaciating, and the discharges looked as though the artificial anus was high up the bowel, operative interference was decided upon. The wound was enlarged directly upward, at first slightly, but ultimately to the extent of several inches, for the purpose of joining the divided ends of the bowel.

In the neighborhood of the artificial anus, a portion, to an extent of two or three feet, of the intestine was found strongly matted together by inflammatory deposits; small projecting loops of a few inches in length were found free with both ends terminating in the mass. The lower end of the bowel, from which the slough had separated, could not readily be distinguished from any of the other loops; and it soon appeared that it would be useless to join it to the bowel which formed the artificial anus, as it was completely obstructed at many points. As the colon was free, and a few inches of the ileum, at the suggestion of Dr. Weed, then one of the resident physicians, it was decided to join the bowel forming the artificial anus to the colon. For this purpose a small opening

was made in the cæcum, and one blade of Dupuytren's enterotome introduced, the other being carried into the bowel forming the artificial anus, and the two blades clamped together. A temporary ligature was placed around both intestines while the toilette of the peritoneum was made; they were then fastened in position, and the wound, about six inches in length, closed.

The patient did well after the operation, though it was found necessary to reapply the enterotome twice before a satisfactory opening was obtained, three times in all. The fecal fistula rapidly contracted, and when I last saw him he was able to wear a pad over it for a week without removal; his bowels acted naturally, he was free from pain, gaining flesh, and was working as elevator boy at the hospital.

I heard afterward that another surgeon had attempted, though unsuccessfully, to close the fistula.

Ruptured ovarian cyst. Ovariotomy; death on the fourth day.—Mrs. D., aged fifty-four years, a patient of Dr. Hogue, of Houtzdale, Clearfield Co., Pa., had suffered for some years with a large ovarian tumor, and though she had been advised by many physicians to have an operation performed, she refused until symptoms of suffocation appeared, when I was hurriedly summoned to come and operate.

The abdomen was enormously distended, but did not present the typical diagnostic points which usually accompany ovarian tumor.

Dr. Hogue, of Houtzdale, his brother, Dr. Hogue, of Utahville, and two of their office students were present and assisted at the operation. On incising the peritoneum, at once the contents of the ruptured cyst appeared in the wound. This material would not flow through a canula, and it was not until the incision had been increased to six inches that I was able to draw the glucose-like mass out; even then it would not run, but had to be lifted and drawn out by the hand. Of this substance there were in all about sixty pints. The abdomen was cleaned with great difficulty, the material was adherent to everything and had penetrated to all portions of the cavity. Both visceral and parietal layers of peritoneum were thickened, roughened and nodular. The cyst was ruptured in many places, and had probably been ruptured for a long time. It had but few adhesions and these to the omentum, its pedicle was long and had the operation been performed before rupture it would have been quite a favorable case. The pedicle was tied with silk, dropped, and the abdomen closed. The patient scarcely suffered from shock, though the operation was quite prolonged. After the operation

she did well for two days, some of the cyst contents passing through the drain, but she perished on the fourth day, probably with septic peritonitis.

Encysted pelvic abscess. Abdominal and visceral peritoneum stitched together, abscess emptied and drained; recovery.—Morris S., aged thirty-one years, was admitted to the Jefferson Medical College Hospital, June 17, 1886. He had a tumor about the size of the adult fist, deep in the right iliac fossa, just to the right of the median line. It was regular in its outline, not very painful, though tender on deep pressure, and it was covered by the intestines.

He stated that he had noticed it for two years, and that it was nearly its present size when first discovered. He had lost flesh, but was still in quite fair health. No pulsation and no murmur could be detected. His temperature, though normal in the morning, ran up to 102° each evening. It was now considered as probably an encysted, purulent collection, although there were no evidences of any disease of the spine or kidneys.

With the assistance of my colleague, Dr. O. H. Allis, and the house staff, I made an incision four inches in length, beginning one inch above and one inch to the left of the anterior superior spinous process, then carried it downward and inward parallel to Poupart's ligament; about the same incision as is used for the ligation of the iliac arteries. After the muscles were divided, the transversalis fascia was separated until we were close to the growth, when fluctuation was readily detected. Carrying our incision toward the mass it was found that the parietal layer of peritoneum and that covering the abscess, though in contact, were not adherent. A series of catgut sutures and some silk ones were introduced, fastening the two layers of peritoneum together and surrounding the proposed point of incision. After verifying our diagnosis by the exploring needle, a free incision was made giving exit to about eight ounces of healthy, odorless pus. A finger introduced into the abscess cavity failed to discover the cause of the collection. A large drainage-tube was introduced, by means of which the cavity was daily irrigated with antiseptic solutions, the discharge gradually ceased, and he was sent out cured, July 26, 1886.

Double ovariotomy; multilocular cysts about forty pounds in weight; recovery.—Mrs. Sarah McC. was sent to me by Dr. James Graham. She was twenty-eight years of age, married, no children, and no miscarriages. She always menstruated regularly previous to this year; during this year she had bled two or three times each month. After postponing the operation once or twice in consequence of unexpected bleeding, the third time it was performed;

though she bled on the night before and was bleeding during the operation. She had had no leucorrhœa, but little difficulty in micturition, no œdema in limbs or abdomen, no nausea and no vomiting. She first noticed the tumor one year ago in the right iliac fossa, the abdominal enlargement was characteristic, the veins were enlarged, the wave was well transmitted, the uterus was small and anteverted.

Operation October 18, 1886; present Drs. J. C. Da Costa, Fisher, Graham, Koons, and Gardner. The abdomen had been prepared the day before with turpentine and mercury, the latter being still on. A two per cent. solution of carbolic acid was used on the sponges and instruments. The incision was four inches in length, there was some ascitic fluid in the abdominal cavity, the cyst was multilocular and had no adhesions. Its contents were quite gummy, preventing the use of the canula, the pedicle was short and belonged to the left ovary, it was tied with silk, severed and dropped.

Another cyst, springing from the right ovary and about eight inches in diameter, was found lying posterior to the first, it was also without adhesion and was removed in the same manner. The abdomen was cleansed with carbolic acid sponges and closed with silk as usual.

The stitches were removed on the fifth and sixth days, the bowels were moved by enema on the eighth day. Her recovery was uninterrupted, the temperature never rising above 100° after the evening of the operation. The two cysts and their contents weighed about forty pounds.

The patient was able to walk about her room at the end of three weeks.

Large fibroma of the uterus. Removal of uterus and ovaries by abdominal section; death on the fourth day.—Mrs. S., aged thirty-two years, a patient of Drs. Skilling and MacOscar, of this city, had been ill for two years and had been bleeding for sixteen months. During the last six months she had never been free from bleeding more than a week at any one time, and during the last ten weeks, she stated, she had bled daily from two to sixteen ounces, the latter amount only after exertion; this confined her constantly to her bed or lounge. She had a good appetite, good digestion, and was well nourished though exceedingly blanched.

The diagnosis of large submucous fibroid was made when I first saw her, six months before, and full doses of ergot had been taken constantly during all that time, without effect.

At the time of operation, the enlarged uterus reached above

the umbilicus, was perfectly smooth and regular in its outline and quite movable.

On December 9, 1886, with the assistance of Drs. J. C. Da Costa, Porter, Skilling and Fisher, the operation was performed. I made a long median incision from the pubes to some inches above the umbilicus; there were no adhesions. The uterus was readily elevated and a short "Thomas" clamp placed upon its neck.

After the broad ligaments had been tied and divided, the body of the uterus was removed about an inch above the clamp.

As the abdomen was quite deep and its walls quite thick, it was utterly impossible to bring the pedicle outside, a strong silk ligature was passed through the neck, below the clamp, and tied on each side.

When the clamp was removed the parts above the ligature were found to consist of uterine wall, enclosing a section of the tumor; on removing the latter the uterine walls required but little attention to make very perfect flaps, they came together without tension and were held in position, with their peritoneal surfaces in close contact, by a continuous catgut suture. The toilette of the peritoneum was carefully made and the abdomen closed.

The uterus removed was about seven inches in diameter, and contained a submucous fibroid, attached to nearly the entire inner wall; in size and attachments it is nearly identical with one, also removed by abdominal section, which I presented to this Society some years ago.

The patient rallied well from the shock of the operation, and by the following day was quite cheerful, with good pulse and temperature, but she had secreted very little urine. On the third day some regurgitation of bloody fluid occurred from the stomach, the temperature increased and the urine was still scanty. There was no abdominal tenderness or distention. By evening delirium occurred, and death ensued the following day. The nurse assured me that only three ounces of urine had been secreted during the four days.

On post-mortem examination there were no evidences of peritonitis except slight adhesions of the bowel lying in contact with the uterine stump. The ureters and the bladder were uninjured, no bleeding had occurred, the uterine stump had remained well closed. The uterine wound was quite clean, no decomposing or offensive fluids were present. Some small portions of the very edges of the flaps looked as though they were beginning to slough, though very much less than I feared would happen when I ligated the neck. I think, in future, I shall content myself with

ligating the arteries of supply and omit the ligation of the uterine neck.

Stricture of the ileo-cæcal valve; chronic obstruction of the bowels. Laparotomy; digital dilatation of the stricture; recovery. —Mrs. Ann H., aged thirty-seven years, a patient of Dr. D. S. Jones, of Plymouth, Pennsylvania, was admitted to the Jefferson Medical College Hospital in April, 1887. She had been in good health until the birth of a child in May, 1886. Since then she had had repeated and increasing attacks of obstruction of the bowels, during which there were entire loss of appetite, obstinate constipation, constant vomiting, great abdominal pain and tenesmus, similar, she stated, to labor pains. Lately there had appeared at these times a tumor in the lower part of the abdomen, about the size of the adult fist; these attacks occurred about once a month, and as they lasted three weeks she had but a short interval of comfort between them. When free from the attack, she stated, that the tumor returned to the right iliac fossa, where she thought she could distinguish it by palpation and its tenderness on pressure. I was unable, however, to recognise, at this time, any unusual mass in this situation.

I kept her under observation until an attack should occur. On May 1 an attack began, and her sufferings fully verified her statements. The tumor appeared between the umbilicus and the pubes; it was about the size and very nearly the shape of the adult kidney.

On May 2, 1887, in the presence of Professors Gross, Parvin, Brinton and several other physicians, I made a median incision about four inches in length and exposed the mass; it proved to be an intussusception of the ileum into the colon with a thickened and contracted ileo-cæcal valve forming the apex of the intussusceptum.

There was slight adhesions between the contiguous layers of peritoneum covering the bowel, which were readily broken up, and the intussusception reduced.

On examining the ileo-cæcal valve by a finger invaginating a fold of the colon, it was found to be hard and contracted. A longitudinal incision was made in the colon about one inch in length, and three from the valve, through which I passed my finger and found the valve contracted to about the size of a crow's quill (one-fifth of an inch). It was slightly thickened, quite hard, white in color, and did not bleed during the examination or subsequent manipulations. It was considered by all present to be a case of cicatricial stenosis, due to some previous inflammatory action, and certainly not malignant. It was dilated, with considerable difficulty, by the introduction of the little finger, the index finger was then carried through its entire length.

The wound in the bowel was closed by a double line of sutures, the first being a continuous silk suture, including only the mucous membrane; the second was a continuous silk Lembert suture, bringing the peritoneal coats in apposition.

All the operative procedures upon the bowel were performed outside of the abdominal cavity, the abdominal wound being kept closed by sponges. The portion of bowel outside was thoroughly washed and returned, and the abdominal wound closed in the usual manner.

There was some vomiting after the operation, the patient was kept slightly under the influence of morphia for a few days, and on a milk and broth diet. The bowels opened naturally on the eighth day, the stitches were removed on the fifth and sixth days; the temperature never rose above 100°. She returned to her home entirely free from all her previous symptoms, and remained free for several months.

[Her subsequent history appears later in this paper.]

Obstruction of the pylorus. Digital dilatation by Loreta's method; death from exhaustion.—George H., german, aged fifty-eight years, a blacksmith. His health had always been good until the last year. At the time he came under my care he had the typical symptoms of complete pyloric obstruction, with a well-marked tumor at the usual situation; it was not very large nor hard, had no marked outlines, and presented the characters of pyloric thickening more than those of a malignant growth. The microscopical examination of the matters vomited gave no evidence of malignancy, and no vomiting of blood had occurred. He was greatly emaciated, and so feeble that at first I refused any operative interference; the operation had, however, been explained to him, and its performance promised before he came under my care, and he insisted so strongly on having a chance for prolonging his life that I consented.

The operation was performed at Jefferson Medical College Hospital, May 22, 1887, in the presence and with the assistance of Professor Brinton, Dr. Wirgman, and quite a number of others.

As the patient's condition warranted no further interference than mere dilatation of the pyloric orifice, and as the usual incision to the right of the median line would have exposed the stomach nearer to the pyloric orifice (as shown by the position of the tumor) than I desired, I made the incision directly in the median line, and about three inches in length, beginning an inch and a half below the ensiform cartilage.

The stomach was readily exposed three inches from the pylorus. The examination of its exterior threw no new light on the character

of the growth, though the stomach at this point was found to be slightly adherent to the structures beneath. An incision, a little over one inch in length and three inches from the pyloric orifice, was made in the stomach, parallel to and directly beneath the abdominal incision. The coats of the stomach were much thickened. Complete stenosis of the pyloric orifice was found when the finger was introduced, this was readily dilated with the little finger, while the tumor was supported outside the abdominal walls with the left hand. The orifice was then further dilated by the index finger.

The thickening and infiltration of the walls of the stomach at the point of incision, prevented the use of the Lembert suture, their softened condition evidently required the suture to pass through all the coats. As the abdominal wound was directly over that in the stomach, the latter was closed and brought in contact with the abdominal wound, so that the visceral and parietal peritoneum might adhere, and if any of the contents of the stomach should escape or any pus form, they might readily drain outside and not into the general peritoneal cavity. Fine silk with two needles were used, these were carried from within outward through all the coats of the stomach, one needle through each lip, then crossed and one brought through each lip of the abdominal wound, a few were carried directly without crossing. Before these were tied the rest of the abdominal wound was closed. The sutures passing through both stomach and abdominal wound were brought together but lightly.

Nothing was given for the first twenty-four hours by the stomach, the rectal nourishment upon which he had relied previous to the operation being continued. No vomiting occurred during the four days that he lived. On the second day milk and hot water were given in small doses at regular intervals, and as they were well borne they were increased in quantity and frequency. Notwithstanding the fact that he took over a quart of milk per day, besides rectal nourishment, he sank and died exhausted on the fourth day after the operation. There had been no elevation of temperature.

At the autopsy the stomach was found firmly fastened to the abdominal wall; there was no evidence of any peritonitis. In the interior of the stomach it was difficult to find the point at which the incision had been made, the sutures being completely buried in the folds of the mucous membrane. The pyloric thickening was inflammatory in character, and not due to any malignant growth.

There was complete obstruction previous to the operation, there was none after, and had the patient been subjected to operative interference earlier there is no reason why his life might not have been greatly prolonged.

Ovarian tumor. Removal; recovery.—Miss A., aged thirty-eight years, had noticed a painless abdominal enlargement for a few months. On examination I found a small ovarian cyst, lying in the median line and rising slightly above the umbilicus. On May 23, 1887, with the assistance of Drs. Da Costa, Edward Graham, Sweet and Fisher it was removed. The incision was about three inches in length, the tumor was non-adherent. It was tapped, drained, and removed in the usual manner; its pedicle was tied with silk and dropped.

The peritoneum was brought together with chromicized catgut, the interrupted silk suture being used for the other tissues. The patient made an uninterrupted recovery, her temperature never rising above 99°. The tumor weighed about fifteen pounds.

Two penetrating stab wounds, one puncturing the liver and one the transverse colon. Laparotomy; recovery.—Michael H., aged twenty-five years, was admitted to the Jefferson Medical College Hospital at 3 P.M., of September 9, 1887. About three hours previously he had been stabbed twice with a small and pointed amputating knife, during a quarrel in a house of ill-fame.

There were two wounds, both penetrating the abdominal cavity, both at the outer edge of the right rectus muscle and both running diagonally toward the median line, and penetrating the peritoneum at that point. The upper was one and a quarter inches long and was just below the edge of the ribs, it terminated in the left lobe of the liver. From it there was free venous bleeding.

The lower wound was three-quarters of an inch long; it was three inches below the upper and just above the level of the umbilicus. After hurried antiseptic preparations, I opened the abdomen in the median line from the ensiform cartilage to the umbilicus, and found an opening about five-eighths of an inch in length in the transverse colon parallel to its length and near its mesenteric attachment; this was closed by the continuous silk Lembert suture. The suture failed to control a small artery in this wound, but a separate stitch carried under it and tied secured it.

The wound in the liver was small, it had ceased oozing, and as its lips were in fair contact no suture was used. The abdomen was cleansed, the wound closed and dressed in the usual manner.

The following morning his temperature was 101° and in the evening 100°; after that, though it kept quite low, varying from 98½° to 99½°, he had a sharp attack of peritonitis, lasting three days, during which time there was constant regurgitation of bloody fluid. The abdomen was painful and greatly distended with gas, requiring the constant use of the long rectal tube to relieve him.

The stitches were removed on the fourth and fifth days, and the abdomen supported by adhesive plaster. He was discharged, cured, on September 29, having been in the hospital twenty days.

Epithelioma of the ileo-cæcal valve. Resection of three inches of intestine; recovery.—Mrs. H., aged thirty-eight years, the same patient whose ileo-cæcal valve was dilated seven months before (see preceding page), came complaining of a return of her former symptoms, her sufferings were slight, but were evidently of the same character as before the first operation.

November 1, 1887, with the assistance of Drs. Allis, Kendig, Stillwell, and the resident staff, I again opened the abdomen. A straight incision parallel to the median line was made. It was three inches in length, terminating at a point one inch outside the middle of Poupart's ligament. The incision was made at this point as the nearest to the portion of bowel I wished to attack, because I feared adhesions might have formed after the last operation, rendering it inaccessible from any distant incision; and, further, if it became necessary to form an artificial anus, it would be a convenient point.

I had decided that if it should prove to be a recontraction of the stricture, to make a longitudinal incision about two inches in length carried through ileum, ileo-cæcal valve and cæcum, bringing the two ends of the wound together and sewing it up transversely; this would best be made on what would be the under surface of the bowel when the patient stands erect. I tried this on the cadaver and found it practicable, and that it increased the circumference of the bowel, at that point, about two inches.

The head of the colon was readily found, there was no return of the intussusception, no adhesions had formed, though in reducing the intestine at the first operation there had been slight bleeding at a number of points where adhesions were torn. The scar of the original intestinal incision was scarcely perceptible. At the ileo-cæcal valve, however, there was now a decided tumor, and it was now evidently epitheliomatous.

An incision was carried into the mass, verifying the diagnosis. The entire valve had become an irregular mass of epitheliomatous tissue varying in thickness from half an inch to an inch, entirely obstructing the gut except an aperture in the centre, about one-third of an inch in diameter. The circumference of the valve was less thickened by the disease than the centre.

The abominal wound was now closed by sponges, leaving the diseased parts outside; three inches of the bowel, including the

disease, were removed, no clamps were used, the bowels being held in the hands of an assistant; a few vessels were tied.

As the mortality is very high when the separated ends of the bowel, in these operations, are sewed together and returned, I had decided if it became necessary to excise, to establish a temporary artificial anus and begin at once the proceedings for its cure. With this end in view, immediately after the removal of the diseased bowel and the ligation of the bleeding vessels, one blade of Dupuytren's enterotome was introduced into each portion of bowel, viz., one into the ileum and one into the colon, the two blades were brought together and the screw run down firmly. A strong ligature was placed on the ends of the bowel, including the enterotome, to prevent the escape of feces during the subsequent manipulations. The bowel was washed, placed in position at the lower angle of the wound and fastened there with a continuous silk suture. The abdominal wound was closed, covered with cheese cloth saturated with mercurial solution, and this in turn with patent lint soaked in sweet oil. This is the best method that I have found to protect abdominal wounds close to an artificial anus.

The heavy ligature around the ends of the bowel was now removed. A ring of cotton soaked in oil was placed around the artificial anus, the outer extremity of the enterotome supported by oakum, and a wide bandage pinned over it.

Morphine was used hypodermically during the first forty-eight hours and then discontinued; vomiting occurred during the first two days and then ceased. Some feces appeared on the evening of the operation, and full quantities two days later.

On the eighth day the enterotome was found loose, and was removed; its removal was preceded by a passage of feces from the natural outlet. The stitches were removed on the third and fourth days, and the wound supported by adhesive plaster. After the removal of the clamp the patient was permitted to rise, and all restrictions removed from her diet.

The bowels acted naturally for a few times, when all the feces came again from the artificial anus. The clamp was again applied on the 17th, and came away on the 25th. Its removal was again followed by a few natural passages. As these ceased in a few days the clamp was applied for the third time with a precisely similar result.

As this had proved ineffectual, the method of Mr. Banks, of Liverpool, was used. A strong ligature was fastened to the middle of a heavy piece of rubber gas-tubing about six inches in length, one end of the tube was passed into one bowel, the other end of the tube into the other bowel, the middle of the tube pressing against the spur. The position of the bowel in this case was such that the rubber tube was retained with difficulty. After trying it for ten days without success, I substituted the apparatus which I here show, consisting of two pieces of very heavy rubber gas-tubing joined together like the letter T. The upper part of the T is about one and a half inches long, and presses directly against the spur; the other tube is three inches long, and merely serves to keep the first in position. The large base is circular, is three inches in diameter, and serves as a pad to prevent the escape of

feces from the artificial anus. The three pieces of rubber are joined firmly by a strong wire running from the first to the last piece, and twisted tight. This method proved at once satisfactory, and a large proportion of the feces began at once to pass by the natural outlet, and continued to do so. The patient is now in the hospital, but I shall make no attempt to close the fistula until it is seen if the bowels will continue to act naturally.

During the prolonged treatment, fearing that the colon, from disuse, might contract, I directed that she should be given an injection of a quart of water daily, and I was surprised to hear that when a pint had been given it appeared at the artificial anus. By continuing these injections the capacity of the colon was rapidly increased, and when last tried it held three pints; of course when the bowels began to act naturally this was discontinued.

Chronic obstruction of the bowels by encephaloid tumor. Exploratory laparotomy; artificial anus established; recovery from the operation; death fourteen days later from obstructive peritonitis arising from tumor.—Francis O. B., aged thirty-eight years, Irish, carpet porter, a patient of Dr. James Robinson, with whom I saw him January 18, 1888. He was in perfect health until June, 1887, when he began to have slight cramps, once or twice daily, and occasionally at night, in the left iliac fossa. He continued working until December 24, 1887, and had been confined to bed since. His attacks had not increased greatly in severity, but he was getting much weaker. He had lost fifty pounds in weight; he vomited once or twice a week; it was not stercoraceous. He suffered greatly with tenesmus, which produced from ten to fifteen passages during the night, each being a small, hard, white mass about the size of a cherry.

The left iliac fossa was slightly tender. The abdomen was distended with gas. The pulse was 104, and the temperature normal. His pain was uninfluenced by food. He had never passed blood by the bowel. The rectum was found empty and unobstructed.

Later I removed him to Jefferson Medical College Hospital, by which time his pain was nearly constant, and he was unable to sleep without large doses of morphine. Some days after admission, his temperature increased to 103°; there was increased abdominal tenderness and other evidences of a slight attack of peritonitis, which disappeared in forty-eight hours. On the 28th he passed wind by the penis, and again on the 30th.

On January 30, 1888, with the assistance of Drs. Allis, Nancrede and Robinson, and the house staff, I opened the abdomen. A median incision about four inches in length was made, and a lobulated tumor the size of an orange was found in the angle between the bladder and the spine. The sigmoid flexure of the colon was tightly adherent to and partly buried in the tumor. The cæcum was carried toward the median line, and was also adherent to the tumor. The lower end of the ileum was closely adherent, and its calibre nearly obliterated.

The colon was contracted and collapsed; the bowels above the point of obstruction in the ileum were greatly distended.

As nothing could be done with the growth, a fold of the ileum

a few inches above the point of obstruction was brought out of the wound and fastened in its lower angle by a few silk sutures, a rubber drain was introduced, as a glass one failed to reach the desired point, and the abdomen closed. The drain was removed about twelve hours later, as I feared to have it remain in such close proximity to the artificial anus. Twenty-four hours after the operation the fold of bowel in the wound was opened, and the artificial anus established.

On the second day the patient was placed upon his usual food, stimulants, etc. The stitches were removed on the fourth and fifth days; the wound healed promptly. It was successfully kept from contamination by the fecal discharges, by the method described in a case reported above.

At the operation a fold of bowel was brought entirely out of the wound; this was adopted as a modification of the method of entirely cutting off the bowel, closing the lower end with sutures, and using the upper to form the artificial anus.

The method here adopted has the advantage of rapidity, and less danger of contaminating the cavity with fecal matter, as the opening of the bowel may be postponed until firm adhesions have formed. It permits any gases or other material that may be imprisoned in the lower bowel to escape, and quite as effectually prevents any material passing the artificial anus into the lower bowel.

The patient was relieved of his pain, the vomiting ceased, and he slept well; had a fair appetite and improved in appearance. All fecal discharges, and they were very copious, came from the artificial anus, and none by the natural outlet after the first twenty-four hours.

On the thirteenth day there was a slight elevation of temperature, and all fecal discharges suddenly ceased, injections of warm water carried some distance above the opening by a soft catheter were without effect; by evening vomiting and other symptoms of acute obstruction occurred, and he died twenty-four hours later, or fourteen days after the operation.

The post-mortem examination was made on the same day. The abdominal wound was solidly healed; the bowel at the artificial anus was firmly attached to the abdominal opening. The abdominal cavity contained quite a quantity of opaque serum; the opacity was greatest near the tumor, and on pressing the tumor, thick, purulent-looking fluid exuded from it. This was probably the origin of the fatal peritonitis. The bowels were but slightly congested, and at one point only, about twelve inches above the artificial anus, were adherent. The bowel at this point was sharply flexed upon itself, and adherent for about three inches, causing complete obstruction. This adhesion was readily broken down by the finger, and it would probably have yielded to an active saline.

The condition of the bowels, as found at the time of the operation, was verified. The tumor was broken down, and had ulcerated into the sigmoid flexure; a large number of secondary nodules were scattered through the liver. The microscopical examination was made by Dr. Longstreth; the tumor and the nodules from the liver were reported by him to be encephaloid.