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A CASE OF BILIARY CALCULUS:

Cholecystotomy; Duodenal Fistula; Recovery.

BY

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A CASE OF BILIARY CALCULUS; CHOLECYSTOTOMY; DUODENAL FISTULA; RECOVERY.[1]

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Mr. B., aged thirty-eight, married, manufacturer, residing at Bridgeport, Conn., consulted me November 22, 1890, and gave the following history:

For ten years past he has suffered from attacks of severe abdominal pain, at intervals varying from two or three weeks to two or three months. The first of these attacks was followed by local peritonitis, since which he has had four other attacks of peritonitis following the pain, which has always been in the region of the gall-bladder.

Two years ago, after an unusually severe attack, he had jaundice for the first time, accompanied with nausea and itching. In three or four weeks the skin resumed its normal color. Since then the attacks of pain have not usually been followed by jaundice.

In August, 1890, while in England on business, he had a severe attack of pain, followed by local peritonitis, but not by jaundice, except a slight yellow tinge of the conjunctiva. He returned home immediately after and suffered on the voyage from constant pain and tenderness. After reaching home he was confined to his bed for ten days with a temperature of 101° to 103°. Since that time the attacks of pain have increased in severity, and have occurred about once in two weeks, relieved only by hypodermic injections of morphia. Jaundice also appeared in September, and has since been persistent and very deep in color.

[1] Read at the quarterly meeting of the Berkshire District Medical Society, July 29, 1891.

Since jaundice appeared each attack has been accompanied with nausea, which had not previously occurred.

There has been constant tenderness over the gall-bladder since the attack in August, and the stools have been white or light clay-colored, as they have always been for a few days after an attack of pain. The urine has been coffee-colored. The patient has lost fifty pounds in weight during the last three months. He is naturally a robust, vigorous, cheerful man. He is now thin, yellow and feeble, with a haggard and dejected expression.

At this time I gave him some general advice, and advised an operation.

The patient came to see me again the last of December. He had had an attack of pain December 17th, since when the jaundice was diminished and he had felt generally better.

On December 30th I went with him to see Dr. William W. Seymour, of Troy, who had himself submitted to the operation of cholecystotomy in December, 1889, at the hands of Mr. Lawson Tait, and had reported his case in very attractive style in the *Medical Record* for December 6, 1890. Dr. Seymour gave us a detailed account of his former sufferings, of the operation, and of the completeness of the cure; showed us his cicatrix and phial containing his one hundred and fourteen calculi. We saw in him a big, active, athletic man, a monument to the success of cholecystotomy. Mr. B. was very favorably impressed, and made up his mind that he would submit to the same operation if the attacks continued. But, as he then thought himself much better, he preferred to wait a little.

The next day, December 31st, while on his way to Bridgeport, he had one of his severest attacks, and during the next three weeks he had one severe attack and three milder ones.

On January 24th he came to Pittsfield by way of Boston. Just before leaving Boston pain came on again and caused him intense suffering during the journey. There was no hypodermic syringe at hand, and he felt only slight relief from the inhalation of chloroform. Soon after his arrival he was relieved by morphia, but the pain returned and continued for more than twenty-four hours, requiring morphia again on the following day. On that day the temperature was normal and pulse 80 to 100. There was tenderness over the region of the gall-bladder and pain there, and also below the right scapula. No increased dulness or other indication of a distended gall-bladder, and no enlargement of the liver; urine very dark brown; skin deeply jaundiced.

On the third day the pain was less, but the temperature rose to 101.5°, and pulse to 108. On the fourth day, a sharp attack of pain came on with nausea and vomiting. He was again relieved by morphia. After this there was no more severe pain, but tenderness was great for three days longer. During the week he had taken almost no food, and for a week after he took only liquid food in small quantities.

The patient was now told that surgical interference could no longer be deferred with safety, and readily consented to the operation. It was decided that this should be performed by Dr. William T. Bull, of New York, at the House of Mercy, in Pittsfield, on the 15th of February.

On the morning of the 13th he took a dose of Carlsbad salts which caused two dejections, soon after which he was again seized with pain which lasted all day, with excessive tenderness and vomiting. The next day he was free from pain, but had slight tenderness and occasional nausea. Pulse and temperature normal.

On Sunday morning, February 15th, he went to the

House of Mercy, where cholecystotomy was performed by Dr. Bull, who has kindly furnished me the following description of the operation :

"A four-inch vertical incision over the cartilage of the ninth rib exposed the abdominal cavity. The gall-bladder was not prominent, but was easily brought into view by wedging the adjacent intestine out of the way with flat sponges. It appeared to be constricted about its middle. The fundus was aspirated and two drachms of bile removed. It was then opened, the wound held apart with artery clamps; a soft bougie and also a probe was passed through the constricted body, and was arrested by a calculus which could be distinctly felt with the finger. It could be moved to and fro, a distance of two inches, apparently in the dilated cystic and common duct. The structure was overhung by the duodenum, and united to it by such firm adhesions that I could not separate them without fear of tearing the wall of the intestine. In consequence of this adhesion, the finger felt the calculus *through* the wall of the duodenum, when it was pushed in the lowest position it would occupy. When it was forced into its highest position it was close against the under surface of the liver, and the part of the duct it occupied appeared to be free from the duodenum. It was difficult in the field of operation to determine the precise limits of the duodenal wall. In making the incision to remove the calculus the wall of the gut was incised for a distance of half an inch where it lay over the duct. The wound was closed with a continuous catgut suture through the mucous coat, and outside this interrupted Lembert sutures.

"The incision in the wall of the duct was left open, a rubber drain inserted in it, and the edges of the incised gall-bladder sutured with catgut to the parietal peritoneum. The viscus was not long enough to per-

mit the skin to be included in this suture. The drain was surrounded with tampons of iodoform gauze and the abdominal wound closed by silk sutures about them and the tube."

Duration of operation two and one-half hours: chloroform was the anæsthetic.

The calculus was oval, of the size and shape of a nutmeg, and weighed 55 grains. Its longer diameter is $1\frac{1}{16}$ inch and its shorter diameter $\frac{3}{4}$ inch.

This operation was beset with unusual difficulties, for the following reasons:

(1) The gall-bladder was hidden behind the intestines and liver, and when found was contracted and contained no calculus.

(2) The calculus was in the dilated duct, was hidden behind the duodenum, and united by firm adhesions to the surrounding structures.

(3) The operation was protracted by the necessity of sewing up the incised duodenum.

(4) Owing to the deep position of the gall-bladder and duct and to the adhesions which held it there, the incised edges could not be accurately stitched to the abdominal wall, as is usually done, and the danger of the escape of bile into the peritoneal cavity was great.

After the operation the patient was greatly prostrated. In the evening he had a pulse of 108, temperature 98° and respiration 36. For four days following, the pulse, which was feeble, ranged from 120 to 150. Temperature 100.4° the second day, and 100.2° the third day, after which it was nearly normal. On the second day the urine contained albumen one-tenth of its volume, but this disappeared on the third day and did not return. He suffered from severe pain in the wound and whole of right side, and required hypodermic injections of morphia during the first few days. For forty-eight hours he took nothing by the

mouth. On the third day he took champagne and on the fourth day he began to take peptonized milk. From the first he had enemata of peptonized milk, afterwards alternated with beef-juice.

The bile was discharged very copiously. For three days it was very watery and pale, being mixed with serum. After this it was thicker and bright yellow. The dressings were changed at first twice a day, but it was soon necessary to change them every eight hours and afterwards more frequently, sometimes every two hours. Great masses of absorbent cotton were completely saturated, as well as the bandage, clothing and bedding. This inflamed and excoriated the skin and caused great suffering. It caused him such pain to be moved that the dressing became a very difficult matter. The bile escaped around the tampon and not through the tube.

On the eighth day the sutures were removed. The wound had then healed, except where kept open by the tampons. The bile flowed chiefly from the lower angle of the wound and not through the tube. It was yellow and green, with much watery fluid, and the skin was inflamed wherever touched by the wet dressings and clothing.

With the discharge appeared a few white specks which, on examination, proved to be milk-curd. It was therefore evident that the wound in the duodenum was not united, and that its contents were escaping.

The three tampons surrounding the tube were removed on the eleventh, twelfth and thirteenth day. A cavity was then left, two inches in diameter and two inches deep, lined with healthy granulations. The tube was removed and found to penetrate one inch deeper than the bottom of this cavity. The tube was not obstructed. It was cleansed and replaced and surrounded with tampons. The bile, however, continued to flow out around the tube until March 7th,

the twenty-first day, when additional fenestræ were cut close to the inner end of the tube and the cavity packed very tightly with wool. After this the discharge came chiefly through the tube.

The discharge from the duodenal fistula continued till March 14th, four weeks after the operation. For one week longer, bubbles of gas escaped during the dressing, and after this the fistula remained closed.

As long as nothing but milk and liquids were taken by the mouth, the discharge from the fistula was very watery. It was at first acid in reaction, but afterwards neutral; but it was excessively irritating, and excoriated the whole side and back. It never contained more than a few small particles of curd, though very large quantities of milk were taken. The caseous mass passed onward through the duodenum, while the watery portion poured freely out from the fistula. When solid food was taken the discharge from the fistula was genuine chyme.

When the tampons were removed, as they were daily, the cavity surrounding the tube would immediately fill with half an ounce or more of bile and food. The bile came from the right side of the tube, and the food from the small orifice at its left side. As soon as this was withdrawn by a syringe it would well up again from the bottom. The amount of bile was amazing, but it could not be measured.

The wound granulated rapidly, and on March 26th, five and a half weeks after the operation, had closed firmly about the drainage-tube. This was then removed and a smaller one substituted, which was kept in for two weeks longer. On April 4th, seven weeks after the operation, the discharge of bile ceased for a time, and bile was then first seen in the stools. Bile was occasionally discharged from the tube, however, until April 18th, after which no more was seen. This

was nine weeks after the operation. When the flow of bile was first checked, pains would be felt like the premonitory pains of of his former colics. When bile reappeared at the wound, the pain ceased. A slight serous oozing continued till May 13th, since when there has been no discharge of any kind.

The stick of nitrate of silver was occasionally used to facilitate the closure of the sinus. The granulating surface was liberally dusted over daily with aristol, which acted admirably. For the protection of the skin, ointments were at first used, such as lanoline and zinc ointment; but the dry application of bismuth was found more comforting and healing. Tampons of wool were found better than cotton or gauze, as by their elasticity they kept the bile out of the wound and forced it to flow through the tube.

The bowels were at first obstinately constipated. Repeated enemata were given, as well as salines by the mouth; but nothing came away except the débris of the nutrient enemata until the twelfth day, after which the stools were liquid and dark-colored until the twenty-first day, when the first milk-curd appeared in the stools. These were colored till the twenty-sixth day, after which they were nearly white in color and very copious till the forty-ninth day, when the normal color returned. There was therefore no movement from the upper portion of the bowels for three weeks, owing in part, no doubt, to the escape of the liquid portion of the food, as well as to the morphia which had to be given to a greater or less extent during that period.

No periodicity could be discovered in the discharge of bile; but the duodenal discharge varied with the feeding. It was constant as long as liquid food was taken at short intervals; but when regular meals were taken, it came in floods about an hour after meals.

For the first two weeks the patient was unable to turn himself in bed. At the end of four weeks he sat up in bed, and at the end of six weeks was walking about the hospital. He became greatly emaciated during the first four weeks, while the duodenal fistula was open, but began to gain flesh as soon as this was closed.

The jaundice began to fade immediately after the operation, and at the end of six weeks had all disappeared except a slight yellow tinge upon the abdomen.

I went out of town on the 1st of April, six and a half weeks after the operation. He was then wearing the small tube, but was up and dressed. Dr. F. K. Paddock took charge of him during my absence. On my return on the 13th of May, Mr. B. met me at the station, looking well and very happy. Since then he has been well, though not very strong. He has had regular bilious stools, no pain, no jaundice and has gained flesh.

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