Cholecystotomy for the removal of gall-stones in dropsy of the gall-bladder / by J. Marion Sims.

CHOLECYSTOTOMY

FOR THE

REMOVAL OF GALL-STONES

IN

DROPSY OF THE GALL-BLADDER.

BY

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CHOLECYSTOTOMY IN DROPSY OF THE GALL-BLADDER.

AN American lady, aged 45, living in Paris, was married at twenty-three, and had one child, now nineteen years old. She had change of life at forty-three, without any constitutional disturbance. A woman of fine intellect and fine appearance, weighing one hundred and sixty pounds, she had enjoyed uninterrupted good health all her life. Her family history was excellent, and her regular habits of living were such that she had not consulted a physician for the most trifling ailment in the last twenty-five years. Besides all this, she was most happily married and enjoyed every comfort and luxury of life that wealth, friends, and a loving husband could bestow. But at last a great sorrow fell upon her, and her husband wisely suggested change of scene, and she spent the months of August and September 1877 in Switzerland. While there, she complained of the cold, and occasionally of pain in the right lumbar region, high up under the false ribs. For the last twelve months, she had now and then complained of pain in the right hypochondrium, when she stooped over to button her shoes, but not under any other circumstances. She returned home in October, not much improved in health; and, in the later part of November, she became suddenly jaundiced. In two or three days, the jaundice was of a *deep mahogany colour*. She complained of languor and debility, but of no pain. Her husband and friends wished her to consult a physician, but she refused, saying she was not at all ill, and she supposed the jaundice would disappear spontaneously, as it was not attended with physical suffering. The jaundiced tint became deeper, and at last she agreed to see a physician, and Dr. Félix Brémond was called on December 5th, 1877. He prescribed the usual remedies under such circumstances, but with no marked improvement. On December 30th, Dr. Moissenet and Dr. Paquelin saw her with Dr. Brémond, and they discovered some unnatural swelling about the lower border of the liver.

They saw her again with Dr. Brémond on January 7th, 1878. On January 8th, on going to stool, she had a sudden discharge of clear uncoagulated blood from the rectum. The discharge of blood was preceded by a griping pain around the umbilicus. She had passed a mass of coagulated blood from the bowels some days before ; and for several days since then she had been passing small quantities of blood, which were always preceded by a griping pain about the umbilicus, but she attached no importance to it and said nothing about it. Dr. Brémond, supposing that the blood came from the hæmorrhoidal vessels, at first tried astringent injections, but without effect. He then prescribed perchloride of iron, which appeared to control the bleeding ; for on the 10th and 11th it was less, but on the 12th and 13th it was more profuse. The dose of the perchloride was then increased, and the bleeding ceased on the 17th. But it appeared again on the 18th, on the 21st, and occasionally up to January 30th, when it ceased entirely. During all this time, she took the perchloride of iron. On December 6th, about a week after the jaundice set in, she began to suffer from intense itching and burning of the skin, which were almost unbearable, and she occasionally had lancinating pains darting like electric shocks through the joints. The itching and burning were so severe that they prevented her from sleeping. They were always worse in the afternoon and evening. Dr. Brémond tried emollients, baths, anodynes, and nervines, with no permanent effect. The heat of the bed seemed to aggravate the itching, and then, if her arms and legs were uncovered, the exposure to the air made it still worse. It was most painful to witness sufferings that could not be relieved. She would often rest for hours on her knees and elbows to save her body from contact with the bed ; and again, she would spend the night walking the floor, scratching, and crying like a child. Ordinarily she had great moral courage, but she lost it all under this uncontrollable itching and scratching. Every part of the body was the seat of itching, the scalp, and even the inside of the eyelids. She was never clear of it, but it was always worse in the afternoon, especially towards five or six o'clock. About the middle of February, it became less in the lower extremities, but the upper extremities and the body suffered as usual. In addition to the itching and burning, there was great hyperæsthesia of the skin. Sometimes, when one hand accidentally touched the other, she would suddenly jerk and quiver as if an electric spark had passed between them. The hyperæsthesia was occasionally so aggravated that she could not bear the weight of the bedclothes, or a gentle touch ; while

again, the itching was so intolerable that she was compelled to scratch with great violence. She was never clear of the itching and burning sensation in the skin, which was occasionally attended with what is known as "goose-flesh" roughness, with a sense of internal chilliness, but she never had distinct rigors. She passed whole nights without sleeping, simply because of the itching and scratching. No remedy, internal or external, produced any permanent benefit.

On January 15th, 1878, Dr. Noël Gueneau de Mussy saw her in consultation with Dr. Brémond. The swelling in the right hypochondrium had increased, and was now easily recognised as a distinct tumour. For some time, she had complained of constant aching pain and weight in the tumour, extending back to the right lumbar region, with occasional pain under the right shoulder-blade. The pain in the tumour was sometimes lancinating, and, when she turned in bed, she was always conscious of the movement and pressure of the tumour. From this time, Dr. Brémond could see that the tumour grew from day to day. She had had nausea and vomiting from time to time, but now she vomited almost daily. From the inception of the jaundice, her stools had always been clay-coloured, except when they were bloody, and their odour was very offensive.

On February 7th, Dr. Labbé was called in consultation with Dr. Brémond and Dr. Gueneau de Mussy; but, in spite of their best efforts, there was no amelioration of suffering. The previous loss of blood and loss of sleep from itching, the continued enlargement of the tumour and the constant pain, the inability to take food in sufficient quantities and the daily vomiting, all conspired to produce a physical and moral depression that created great anxiety. It is useless to give a daily report of the progress of the case. All days were bad and all more or less alike. The same itching and burning, the same sleepless nights, the same offensive clay-coloured stools, the same pain in the tumour, in the right lumbar region, and under the right shoulder-blade, with occasional vomiting, were suffered every day. Our patient, from being a stout handsome woman, became thin and emaciated; and was jaundiced, from the second day after her first attack, of a deep-brown mahogany colour. The urine was always scanty, intensely high coloured, and gave a bile tinge to the sides of the vessel when shaken. Besides Dr. Moissenet, Dr. Gueneau de Mussy, and Dr. Labbé, she was seen by Dr. Péan, Dr. Bouchut, Dr. Paquelin, and Dr. Dusseris.

I saw the patient with Dr. Brémond on March 30th, and obtained the history already given. The tumour, which was continuous with the

liver, filled up the right hypochondrium, reaching far below the umbilicus; and Dr. Brémond showed me two diagrams, one made on March 6th and the other on the 16th, which plainly demonstrated the size of the tumour and the rapidity of its growth.

On March 6th, it extended eleven *centimètres* (four inches and a quarter) below the umbilicus, and it was eleven *centimètres* in its transverse diameter.

On March 16th, it extended fourteen *centimètres* (five inches and a half) below the umbilicus, and it had the same transverse diameter, measuring from the linea alba toward the false ribs. To the sight, the right hypochondrium was much larger than the left. The tumour was oblong, rounded, and slightly movable laterally. To the touch, it was sensitive and hard, or tense. The tension was so great as to mask fluctuation; still, I detected fluctuation, and gave it as my opinion, that it was a cyst connected with the liver, but whether hydatid or dropsy of the gall-bladder I could not say. But I advised aspiration as a diagnostic means to guide subsequent treatment. Dr. Brémond at once agreed to this course. Accordingly, on the following day, assisted by Dr. Brémond and Dr. Pratt, the tumour was aspirated, and thirty-two ounces of a dark-brown fluid were evacuated. From the colour of the fluid, I supposed it was bile. But an analysis showed that there was no bile in it and no hydatid hooks. The immediate effect of emptying the tumour was greatly encouraging. She was relieved of all pain in the region of the tumour and liver. She slept all night and a good deal during the following day. There was no vomiting, and she had no itching for two days. She was able to take fluid nourishment, and the pulse and temperature were normal. But the urine was scanty (eighteen to twenty-four ounces a day) and very high coloured. These favourable symptoms did not last long. Two days after the aspiration, she complained of itching again in the upper extremities, of pain in the right lumbar region and under the right shoulder-blade, and of nausea. Her stools had the same fearful odour, and were always whitish or clay-coloured. She gradually became weaker, sleeping but little, worn out with itching, and prostrated for want of nourishment. On April 8th, nine days after the puncture, she had a slight bleeding from the nose.

April 9th. She was very nervous, and crying from the pain of itching, and felt sore all over from scratching; nauseated; exceedingly feeble; she fell into a sort of stupor, which was afterwards ascertained to be syncope. She had several of these attacks of syncope, with nausea and exhaustion, and Dr. Brémond was obliged to remain with her nearly all night.

With the syncope, she had pain in the stomach, also about the umbilicus, and a sense of coldness; and towards morning she had hiccough, cold hands and feet, and vomiting, with complete prostration, the pulse being frequent and feeble. This state of prostration passed off in about twenty-four hours, when the skin became warm and the pulse normal. She passed no urine during all this time. Having been called from the city, I did not see our patient after the aspiration till April 13th, just a fortnight. I found her much weaker, and suffering as usual with itching, nausea, vomiting, and having stools of the same colour and odour as before; and she complained very much of the tumour, which was now nearly as large as before the puncture. It was heavy, and dragged as she lay or turned in bed. It was more sensitive on pressure than ever before; indeed, there was such a degree of sensitiveness that she could hardly bear to be touched. There was considerable tympanites, and a deep breath greatly aggravated the pain in the tumour. She also complained of the same old pain extending from the shoulder-blade down the right lumbar region. The pain in the tumour was so much worse —there was so much tenderness on pressure—such evidence of inflammatory action, with such a degree of prostration—that Dr. Brémond and myself, looking upon the case now as hopeless, agreed to cut down on the tumour, freely open it, empty its contents, and, if it proved to be the gall-bladder, to attach its incised border to the edges of the abdominal incision, and thus to make a fistulous opening that would insure against its refilling. We were encouraged to make a permanent fistulous opening, because, first, we saw such improvement in all her symptoms follow the temporary removal of the fluid by aspiration; second, it would be in imitation of the efforts of nature in all similar cases where recovery has taken place; and third, speedy death was inevitable if we did nothing.

Operation.—April 18th, 10 A.M. There was great tenderness and pain in the region of the tumour, aggravated by pressure. For the last three or four days, there was marked tympanites. The pulse had risen from 75 up to 110 and the temperature to 100 deg. Her sufferings were altogether so much worse than they had ever been before, that she implored us to lose no time in giving her the relief she expected from the operation. Dr. Hayden gave ether, and Dr. Brémond and Dr. Pratt assisted me. The operation was performed under proper antiseptic precautions, with carbolic spray, and carbolic lotion for hands, sponges, and instruments. It took an unusually long time (twenty-four minutes) to get the patient under the influence of the ether. An incision, three

inches long, parallel with the linea alba, was made over the most prominent part of the tumour, about three inches to the right of the umbilicus. It was begun an inch above the level of the umbilicus, and extended two inches below it. The peritoneal membrane was soon reached, but was not opened till all bleeding from divided vessels was controlled. As there was such a hæmorrhagic tendency, this required six artery forceps on each side of the incision. When the peritoneum was opened, several ounces of pinkish serum (perhaps six or eight) were discharged. I am somewhat in doubt whether the pinkish colour of the serum was due to the rupture of recent adhesions between the cyst and the parietal peritoneum, or to osmosis from the peritoneum. But I think it was from the latter cause ; for I did not, by sense of touch, discover the adhesions, if any existed. A Dieulafoy's trocar of the largest size was thrust into the tumour, and twenty-four ounces of a dark-brown fluid withdrawn, which I supposed to be bile. As soon as the cyst was emptied, it was hooked up with a tenaculum and pulled to the outer edge of the incision, where it was seized with forceps and drawn out for about two inches. It was there held while the finger was passed into the peritoneal cavity, along its under and upper surfaces, when it was ascertained, by its attachments to the liver, to be the gall-bladder. Dr. Brémond, Dr. Pratt, and myself each thoroughly explored the sac by touch, and satisfied ourselves that it was the gall-bladder. This multiple manual investigation would have been unjustifiable and hazardous without antisepticism. The gall-bladder was then incised with scissors, to the extent of about two inches, and was thoroughly cleaned out with sponge-probangs passed to the bottom of the sac, which, on measurement, was found to be eight inches deep. At first, there were removed about two ounces of a dark-brown fluid, much thicker (containing more mucus) than that already drawn off ; and then there were drawn out with the probang a half-dozen or more gall-stones. One probang after another was then passed in, and swept around, till sixty gall-stones were removed.

Having emptied the gall-bladder, it now only remained to secure its open border to the upper angle of the abdominal incision to insure a fistulous outlet. As it was already drawn out through the incision to a considerable extent, I resolved to amputate the projecting portion, which was a mistake. Its walls were greatly thickened, and bled when cut, so as to require the use of several artery-forceps. The puckered mouth of the amputated cyst was then crowded into the upper angle of the abdominal incision, and there secured with eight fine carbo-

lised silk sutures, taking good care to pass each suture through the whole thickness of the abdominal walls, including the peritoneum. After this process was finished, we waited several minutes with small carbolised sponges (on probangs) resting just within the cavity of the peritoneum, to be sure that there was no bleeding from the needle-punctures. When we were satisfied on this point, the lower portion of the abdominal incision was closed with fine carbolised silk sutures, including the peritoneum. The whole wound was then covered with some cotton-wool saturated with carbolised oil, over which was placed a large compress of fine cotton-wool secured with adhesive strips and a flannel binder. When the wound was closed, there still remained a considerable quantity of pinkish serum in the peritoneal cavity, such as I formerly thought to justify the use of a drainage-tube. But the experience of Bantock and Thornton at the Samaritan Hospital proves pretty conclusively that drainage is not always necessary under Listerism, because it prevents putrefaction, and the reddish serum is absorbed without producing septic symptoms.

The operation lasted one hour and sixteen minutes, exclusive of the time consumed in getting the patient etherised. The most tedious part of it was in securing the cyst in the incision and closing up the wound. This took up all of thirty-five minutes. The patient recovered from the anæsthesia half an hour after the operation, and vomited once from its effects, and then lay quiet and comfortable, sleeping a good deal during the afternoon; and she slept all night.

April 19th, first day after operation.—The pulse and temperature were normal; there was no pain and no fever. Dr. Hayden remained all night, but was not called up. She took nourishment at stated intervals in sufficient quantities. She was free from pain; her pulse and temperature were good. She slept; had no nausea or vomiting. She had passed twenty-five ounces of dark brown urine in the twenty-four hours, which gave the tint of bile to the sides of the vessel when shaken; and the stools even became natural in appearance and odour, looking as if they might have been passed by a child. Taken altogether, her condition was good.

April 20th, second day.—There was a slight discharge of brownish fluid from the wound, or rather from the gall-bladder.

April 21st, third day.—She had passed a good night, sleeping and resting well. Her mind was clear, her memory good, and she was very bright and hopeful. She reminded her husband this morning that this was his birthday. There was no itching.—9 A.M. A little

brownish fluid was passing from the wound.—5 P.M. The wound was dressed for the first time, and under carbolic spray. It had healed perfectly. The edges of the sac adhering to the upper angle of the incision looked greyish, as if the circulation had been obstructed by constriction. In the last twenty-four hours, she had passed but fourteen ounces of high-coloured brownish urine.

April 22nd, fourth day.—Her condition was satisfactory; she had slept well. She had passed nine ounces of urine during the night of the same deep brown colour. She complained of dryness of the mouth.

April 23rd, fifth day.—She had had a good night's sleep. Her pulse and skin were natural. She felt stronger. She had a natural stool.—5 P.M. Pulse 80, temperature 100. She had passed seventeen ounces of urine in the last twelve hours.—9 P.M. The tongue was red and dry, and blood was oozing from the gums and tongue. Six ounces of urine had been passed.

April 24th, sixth day, 8.30 A.M. — The nurse said she had a bad night.—8.45 A.M. The discharge from the wound was mixed with blood. — 9 A.M. The wound was dressed. The abdominal incision below the fistula of the gall-bladder was perfectly healed. There was no pus about the sutures, which were allowed to remain. There was a little oozing of blood from the edges of the gall-bladder. Some cotton-wool charged with iron was placed over this point, and pressed down with a sponge held in position with strips of adhesive plaster. The oozing of blood from the gums increased.

April 25th, seventh day, 3 P.M.—Again there was oozing of blood and dark brown fluid from the wound, and it was again dressed with iron cotton-wool and a sponge-compress. Ergot was ordered to be injected hypodermically every four or five hours, with the hope of controlling the exudation of blood from the mucous membrane. Up to this time, I expected our patient to recover; but when I saw the blood exuding continually from the mouth, I told the husband it was a serious symptom, and that in all probability the same thing would take place in the stomach, and that death would occur from black vomit, just as it does in yellow fever. The ergot was continued for twenty-four hours, and then we resorted to the hypodermic injection of dialysed iron, but without any amelioration of the bloody discharge from the gums.—5.30 P.M. Pulse 98; temperature 100.2.

April 26th, eighth day, 7.30 A.M.—She vomited six ounces of a dark coffee-grounds fluid, having all the appearances of black vomit of yellow fever.—9.15 A.M. She vomited again one ounce and a half of

black vomit, in which blood was plainly visible. Pulse 100, feeble; respiration 26; temperature 99.6. From this time, she gradually sank, and died at 4.25 P.M. on April 26th, eight days and six hours after the operation.

Saturday, April 27th, 6 P.M.—Embalmment and partial necropsy by M. Ganal, twenty-six hours after death. Besides M. Ganal and his assistants, there were present the Commissaire of Police, Dr. Brémond, Dr. Hayden, and myself. The body was much emaciated. Rigor mortis was well marked. The skin was everywhere of a deep orange mahogany tint. The abdomen was tympanitic, evidently *post mortem*. On the back, there were several bullæ, varying in size from one to two or three inches in diameter, which, when opened, discharged bloody serum. A fluid similar to black vomit, showing granules of blood, had been running from the nose, and stained the right side of the face.

On removing the dressing from the wound, a dark brown fluid was discharged through the fistulous opening in the gall-bladder. On close examination, the abdominal incision was found to be perfectly united, and there was no pus around the sutures. M. Ganal made an incision from the ensiform cartilage to the pubes, and cut down to the peritoneum. Thinking he had cut through the peritoneum, he began to separate it from the abdominal parietes, saying: "Here is peritonitis with adhesions everywhere." I told him to open the peritoneum, which he did, and found that there was not the slightest evidence of peritonitis. The intestines all had a bloodless pearly appearance, almost diaphanous. M. Ganal then made an incision from the ensiform cartilage at right angles with the longitudinal one, in a direct line across the right hypochondrium, and another incision from about two inches above the pubes, across the right hypogastrium to the spinous process of the ilium. The three-sided rectangular flap of abdominal wall thus made was raised up and turned back over the edges of the false ribs on the right side, showing the gall-bladder firmly adherent to the walls of the abdomen, where it had been attached by the sutures at the time of the operation. M. Ganal then passed a director into the gall-bladder through the external fistulous opening, showing the continuity of the two. After satisfying himself that the operation had been successful in this respect, he cut the gall-bladder loose from the parietes of the abdomen, and then introduced his hand into it, and removed sixteen gall-stones from the size of a pea to that of a pigeon's egg. They were all sacculated, and this was the reason that they were

not removed at the time of the operation. He then removed the gall-bladder entire; it was very large, and its walls were much thickened. After doing this, he was able to pass a probe from the gall-bladder through the ductus communis choledochus into the duodenum. The inner surface of the gall-bladder was very dark-coloured, almost black; but its structure was so firm that it could not be scraped off with a knife. On cutting into the substance of the liver, large quantities of serosity ran out, and its bile-ducts were much enlarged, as plainly seen by the naked eye. The stomach contained a large quantity of dark flocculent coffee-grounds fluid, which in yellow fever is called black vomit, and so did the small intestines. The mucous membrane of the stomach and small intestines was pearly white, with no patches of inflammation or ulceration to account for the exudation of the black bloody fluid. The sigmoid flexure, at its junction with the rectum, contained fæces of natural colour and consistence.

In Douglas's *cul-de-sac*, there was about an ounce of uncoagulated blood, which appeared to have come from a little erythematous patch on the peritoneum, near the lower end of the sigmoid flexure. M. Ganal thought the fluid blood had passed from this point by osmosis. On the inner surface of the bowel, just opposite this elevated point in the peritoneal coat, the mucous membrane, for half an inch in diameter, was thickened, elevated, and had a papillated appearance, and it was supposed that this point might have been the seat of the prolonged bleeding that occurred between the 8th and 30th of January.

The contents of the gall-bladder, a piece of the gall-bladder, and the vomited matter were sent to M. Ranvier, Professor of Histology in the College of France, for examination, and the following is the report.

"Calculous cholécystitis and dropsy of the gall-bladder. Microscopical examination of the gall-bladder, its contents, and of the matter vomited.

A. *Microscopical examination* showed that this membrane was composed of three layers, easily distinguished even when feebly magnified, although they were not distinctly separated from each other.

1. An external connective layer resembling the subperitoneal cellular tissue.

2. A middle fibrous layer intermixed with fasciculi of smooth muscular fibres crossing each other in every direction. This layer was also supplied with vessels, the arteries and veins being quite large.

3. An internal layer, whose deepest parts continued imperceptibly

with the preceding. It consisted of a granulated tissue (Virchow); viz., of embryonic elements, in the middle of which vessels might be seen very much congested and furnished with walls, which were still themselves in an embryonic condition. In many points, the walls of these vessels were ruptured, from which small hæmorrhages had resulted. There existed no trace of epithelial covering at the surface of the layer, nor was there to be seen in its thickness the presence of a single glandular tube.

B. *Liquid contained in the Gall-Bladder.*—This liquid was transparent and slightly tinted with red. After a minute examination, no trace of echinococci could be found, nor any striated membrane. Therefore, it was not from a hydatid cyst. A large number of red corpuscles were seen, which had preserved their natural form and colour. We will see later the importance of this fact from a pathological point of view.

C. *Gall-Stones.*—These were composed, as usual, chiefly of cholesterine.

D. *Vomited Matter.*—The contents of both tubes, although vomited at different intervals, presented under the microscope the same characters. They consisted of a liquid, somewhat viscous and of a green colour, caused by the bile. On examining the deposit, which was abundant and also of a deep green colour, the following elements were observed.

1. Epithelial cells of different forms, the greater number being in the form of prisms of a green olive colour, caused by the biliary pigment. The colouration was uniform.

2. Isolated and conglomerated granulations of the colouring matter of the bile (biliverdin) formed blocks of considerable size.

3. Lymphatic cells infiltrated with little drops of mucus.

4. Vibriones and bacteria of different species: Bacterium punctum, termo, and catenula.

5. A number of red corpuscles very much altered, and well known by their pale circle and double outline.

On adding acetic acid to the liquid, a deposit was formed which had the characteristics of mucin. No sarcinæ ventriculi were found.

Conclusions.—1. The microscopical examination, and also the *post mortem* examination, allow us to conclude that the walls of the cyst-pocket belonged to the gall-bladder. The alteration which it had undergone does not, it is true, permit me to recognise either its villosities or its epithelial lining; but the structure of its middle and external layers is sufficiently characteristic. As to the glands, we know that their

existence outside of the portion near the neck is very uncertain (Kölliker). The alteration which has taken place in the gall-bladder manifests itself on the mucous lining, and is purely of an inflammatory character. It is transformed into a granular tissue similar to that of fungus-granulations, composed of embryonic elements permeated with vessels of a new formation, whose walls are also in an embryonic condition. These lesions are identical with those we find in cases of obliteration of the canal of the gall-bladder (calculous cholécystitis).

2. The liquid contained in the dilated gall-bladder offers an example, not of colourless bile, but of dropsy of the gall-bladder, from which we are able to draw two conclusions.

a. Sometimes the gall-bladder contains a colourless liquid, still having the bitter characteristic of the bile, and in which, by the reaction of Pettenkofer, we are able to recognise the existence of biliary acids.

b. Sometimes, on the contrary, the liquid contained in the gall-bladder, also colourless and viscous, is deprived of the bitter principle of the bile, and a chemical reaction shows not only the absence of the colouring matter, but also of biliary salts. Cases of this kind are not rare. We find them mentioned by Cruveilhier (*Atlas d'Anatomie Pathologique*), who gave them the name of dropsy of the gall-bladder (Frerichs, *Traité des Maladies du Foie;* Moxon, *Pathological Society's Transactions*, 1870, vol. xxiv). They occur in many cases of occlusion of the bile-ducts, whatever may be the cause.

In the case related by Frerichs, the liquid which dilated the gall-bladder and biliary canals was transparent, slightly mucous, and a little alkaline. The reaction of Pettenkofer could not be obtained. Under the microscope, a large number of mucus-corpuscles were found, and, by the addition of acetic acid, a precipitate characteristic of mucin was formed.

It is generally admitted, in order to explain the substitution of this liquid (different from the bile) for the bile, that the bile, for a long time retained and submitted to a considerable and increasing pressure, is absorbed, and a sero-mucous liquid, secreted by the mucous glands and the epithelial covering, takes its place. This is also the opinion of Professor Charcot (*Leçons sur les Maladies du Foie*, 1876).

If we now ask ourselves what is the nature of the liquid under consideration, and which so distended the gall-bladder, notwithstanding the absence of a chemical examination, we will find an answer to our question by the preservation of the red corpuscles in the liquid. Every

one knows, since the researches of Kühne (*Zeitschrift für Wissenschaftlichen Zoologie*, vol. ix, p. 261), that the bile, and particularly the biliary salts, destroy the red corpuscles, which first become pale and then disappear suddenly without leaving a trace. On this fact, which is very easy to verify, Kühne established a theory of malignant jaundice (*ictère grave*), which resulted from the destruction of a large number of red corpuscles by the biliary acids which were absorbed by the mucus of the intestine. Therefore, the presence of red corpuscles intact in this case is a certain proof that, in the liquid which contained them, there was not an appreciable quantity of biliary salts, and consequently it was not itself colourless bile.

(Signed) E. CHAMBARD, Interne des Hôpitaux, Répétiteur au Collége de France."

Like many others who have not given special study to the diseases of the liver, I supposed that dropsy of the gall-bladder meant a gall-bladder distended with bile ; and when the chemist made the analysis, showing that there were no hydatid hooks and no bile in the fluid, I was amazed. So, when the operation of cholécystotomy was performed, I took care to have the highest authority on the subject ; and I have now great satisfaction in submitting Dr. Chambard's report, which not only shows that the distended inflamed gall-bladder contained no bile, but gives the reasons why it did not.

Although this case terminated fatally, I look upon it as a triumph for Listerism ; for the *post mortem* examination proved that there was not the least trace of peritonitis or other untoward complication to be found as the direct result of the operation.

The benefit of the operation was shown in the immediate relief of pain, itching, nausea, vomiting, and in the production of stools natural in colour and odour. Death occurred, as it usually does in all such cases depending upon total occlusion of the bile-ducts, from transudation of blood from the mucous surfaces, *i.e.*, from passive internal hæmorrhage, the result of the poisonous effects of the biliary salts on the blood.

I believe that this operation is unique. Is it justifiable? I think it is, because it is in imitation of the process adopted by nature in all cases in which recovery takes place. Death is absolutely certain in every case where the gall-ducts are mechanically obstructed, unless an outlet be obtained either into the alimentary canal or by a fistulous opening externally through the abdominal walls. All authors have advised against opening the gall-bladder until nature had prepared the

way by forming adhesions between it and the abdominal walls, or till this had been done artificially by caustic potash. But this case proves that it is not necessary to wait for the tedious efforts of nature, on the one hand, or to resort to the clumsy process of caustic, on the other. Dieulafoy's aspirator renders the diagnosis certain, and antisepticism renders the operation of cutting down to the dropsical gall-bladder and establishing a fistulous opening quite as safe as to leave it to the slower process of nature. The propriety of the operation being established, we can hereafter resort to it at an earlier period, before the changes are effected in the blood by the bile-acids which lead to its extravasation from the mucous surfaces. The blood of our patient was already so changed, so impoverished by the toxic action of the bile, that the operation was nugatory in staying the fatal result. Fortunately for progress, the clinical history of the case and the *post mortem* examination establish beyond any question the safety of the operation *per se*.

It is too much the fashion now-a-days to coin new names for old operations. But, as this is a new operation, we must find a name for it. And I think cholécystotomy (χολή, gall; κύστις, bladder; τομή, incision) will answer. It is not necessary to encumber the name with the prefix "laparo", which is now used to designate operations through the walls of the abdomen, as there is no other route by which we could reach the gall-bladder.

Were I called upon to operate again under similar circumstances, I would not procrastinate it a day after the diagnosis was fully established. For it is certain that the longer it is put off the more the blood becomes poisoned by the bile, and the more the chances of recovery are diminished.

I would perform the operation precisely as I did, except in this particular. I would not remove any portion of the gall-bladder; I would draw the gall-bladder, after emptying it, to the surface, open it longitudinally with scissors for an inch or two, seize each side of the incised part with spring-forceps, hold it firmly, then clear it out with sponge-probangs, as I did in this case, or throw in a stream of carbolised warm water through a gum elastic catheter introduced to the deepest part of the cyst. By this means, I would expect to remove the gall-stones by the returning force of the injection with greater ease and with less manipulation than by the sponge-probangs. It is a mistake to pull the gall-bladder through the abdominal incision and amputate any portion of it, because it will be found much thickened, and the removal of a segment of it leaves a large opening to be crowded up into the superior angle of the incision, there to be secured by sutures. It will answer a better

purpose simply to incise the gall-bladder, as before said, than to remove any portion of it.

Since the time of Borrichius in 1676, cases of dropsy of the gall-bladder, complicated with gall-stones, resulting in abscess and a fistulous opening externally, have been frequently observed. In many cases, recovery has taken place even in very old people. In some, death followed often as the result of black vomit; in others, the discharge of bile through the fistula continued for a long time without detriment to the general health. In many, the fistulæ were eventually closed up, and in almost all of them gall-stones, in greater or less numbers, were discharged; some of them small and some of great size. As death so often occurs from impacted gall-stones, the question of surgical interference has more than once been raised. And recently Dr. Handfield Jones has revived the question. In speaking of the passage of gall-stones through the ductus communis choledochus, he says (*Medical Times and Gazette*, March 9th, 1878, p. 247): "I made the proposal, when danger became imminent, to one of my surgical colleagues to open the abdomen, and endeavour by manipulation to force the calculus out of the duct into the bowel. He declined the responsibility of such operative interference, and so the idea was given up. After death, before the necropsy was commenced, I tried to ascertain how far it would have been practicable to execute the proposed manœuvre. I found the calculus in the anticipated situation, but could not positively determine that it was such or an enlarged gland, nor could I press it forward. However, if I should meet with another like case, I should be much disposed to advocate the operation, as it might save life."

Mr. Spencer Wells and other ovariotomists constantly make exploratory incisions into the abdominal cavity to determine the nature of doubtful tumours, and hardly give it a serious thought, as the operation is done with great impunity; and I am sure that, under antiseptic precautions, Dr. Handfield Jones's idea* of opening the abdomen and exploring for gall-stones can be and will be carried out with the same impunity, and with the faith that, if it fail to save life, it will certainly not shorten it.

Given a case of persistent jaundice, with clay-coloured stools, nausea, and itching, we may almost certainly infer that there is mechanical obstruction of the ducts of the gall-bladder. Why, then, should we wait for months for the gall-bladder to become dropsical and to swell up into

* The same idea was suggested to Dr. Daly of Dalston in October 1875 by Mr. Maunder (BRITISH MEDICAL JOURNAL, June 15th, 1878, p. 862).

an enormous tumour filling the right hypochondrium, and extending even to the iliac region? Why not open the abdomen, explore the condition of the liver, and, if we find gall-stones, why not open the gall-bladder, remove the gall-stones, and sew up the incision in the gall-bladder with the same security, the same confidence, that we would stitch up a wound of the intestine? There is no reason why it should not be done, and it will be done; so it will eventually be seen that the operation of cholécystotomy, joined with Dr. Handfield Jones's proposition, will open up a new field in the great domain of abdominal surgery.

I do not know that itchiness of the skin is a common symptom of ordinary accidental jaundice. When I practised medicine in Alabama forty years ago, I frequently saw cases of jaundice; but I do not remember that they were attended with inveterate itching. I had jaundice myself in 1847, as a sequence of yellow fever; but I did not suffer from the peculiar itchiness that belongs to jaundice from mechanical obstruction of the gall-ducts.

Murchison says that itchiness is rarely observed, except in cases where the jaundice is due to the obstruction of the bile-duct. From recent investigations into the literature of the subject, I am led to think that inveterate itchiness, jaundice, and absence of bile from the stools conjoined will be found to be pathognomonic of mechanical obstruction of the bile-ducts. If this could be established as a law, then it would greatly aid us in determining such cases as might be promptly brought under surgical treatment. There is a difference of opinion amongst authors as to the cause of itching. It has been variously conjectured to depend in some way on the bile-pigment or bile-acids deposited in the rete mucosum. If this be the case, then, we ought to find it in ordinary jaundice of a temporary character. In the case I have related, the itchiness was an early symptom, and it became intense, and remained so up to the time the gall-bladder was aspirated on March 30th. The sudden removal of the fluid from the gall-bladder by aspiration took off the pressure, and the itching was relieved for two days; but, when the gall-bladder began to refill, the itching returned, and soon became a troublesome symptom. By the aspiration on March 30th, there were removed thirty-two ounces of fluid; by the operation on April 18th, there were removed twenty-four ounces of fluid; by this operation, all the fluid and all the free gall-stones (sixty) were removed, and a fistulous opening was established through which the dropsical fluid of the gall-bladder could and did escape in certain quantities.

Now, after this operation, the itching never returned, and yet the skin was of the same deep brown mahogany colour that it was before the operation. If this colouration be due to bile-pigment, as we all believe, and if the itching be due to the direct action of the bile on the sensory nerves, why was the itching so modified by aspiration, and so perfectly relieved by the operation of establishing a fistulous opening for the constant discharge of the contents of the gall-bladder? This leads to the inference that the itching is not due to the irritating effects of the bile locally, but is a reflex symptom; that it depends more upon the pressure of distension; for we see, in this instance, that the temporary relief of the pressure and distension was followed by temporary relief of the itching; and that the permanent relief of the pressure and distension was followed by permanent relief of the itching. As death occurs often in this affection from passive hæmorrhages, so clearly the result of cholétoxæmia, it would be fortunate if we could diagnose it in its early stages, so as to resort to a radical treatment before the blood became so poisoned as to preclude the hope of cure.

The history of this case shows that the tumour was discovered on December 30th; that is, about one month after the jaundice set in. It then presented all the characteristics necessary for a complete diagnosis. But all our authors, without a single exception so far as I know, positively forbid any surgical interference until the tumour is found knocking at the abdominal parietes for the exit of its contents. Guided by the highest authority amongst us, we were not justified in performing any operation, except as a *dernier ressort;* and it was then done too late, as our patient died precisely as she would if no operation had been done. But, guided by the experience gained by this case, we may hereafter resort to operative procedures at an earlier day, and with greater prospects of success. No case like this ever gets well, unless nature or art, or both united, establishes a timely fistulous opening to relieve the gall-bladder of its contents, and thereby restore the channel for the bile. Now, what I propose is this. Whenever we have persistent jaundice, with clay-coloured stools, nausea, and intense itching of the skin, we may take it for granted that there is mechanical obstruction of the gall-ducts, and it is our duty to open the abdomen and search for the gall-bladder as soon as we can detect any swelling in the region of the liver. If we find a dropsy of the gall-bladder, we should deal with it as I have already indicated. If we have been mistaken in our diagnosis, then we have made a simple exploratory incision, which,

under antiseptic precautions, is devoid of danger. I would extend the principle of exploratory incisions to other affections of the liver. We know that abscess of the liver is a very dangerous and often fatal disease. It sometimes bursts into the peritoneal cavity, causing rapid death from shock and peritonitis; again, it makes its way into some portion of the alimentary canal, or comes to the surface through the abdominal walls, or passes upwards through the lungs, simulating consumption; while, again, it destroys its victim by pyæmia before it can find an outlet by the slow process of nature. Only three years ago, one of the great statesmen of my own country died of abscess of the liver that made its way through the lung, and it was supposed that he had consumption till a *post mortem* examination revealed the true nature of the disease. And, about twenty-five years ago, one of the most eminent of American surgeons, hardly second to our illustrious Mott, died of pyæmic abscess of the liver, which was discovered only after death. With antisepticism and aspiration, it would now be possible to give relief to such cases when correctly diagnosed.

In cases of suspected abscess of the liver, I propose to make an exploratory incision, to introduce the fore and middle fingers, the hand, if necessary, to examine the liver minutely by the touch above, below, and in all directions; and, if we find fluctuation anywhere, to pass in a Dieulafoy trocar and evacuate the abscess. This I should expect to do with the same ease and the same impunity that belong to the exploratory incisions that we constantly make in doubtful ovarian tumours.

The great lesson that this case teaches is this. In dropsy of the gall-bladder, in hydatid tumours of the liver, in suspected abscess of the liver, and in gall-stones, we should not wait till the patient's strength is exhausted, or till the blood becomes bile-poisoned, producing hæmorrhages, but we should make an early exploratory incision, ascertain the true nature of the disease, and then carry out the surgical treatment that the necessities of the case may demand. If this should be done under antiseptic precautions, I am sure that much suffering will be relieved, and many valuable lives saved that would otherwise be lost. Without Listerism, the operations I here propose would be hazardous; with it I believe them not only feasible, but perfectly justifiable.