Remarks

ON THE

OPERATIVE CURE OF ASCITES DUE TO LIVER CIRRHOSIS.*

BY

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THE first paper published by Dr. Drummond and myself in connexion with this subject appeared in the *BRITISH MEDICAL JOURNAL* of September 19th, 1896.

Not until Dr. Charles Frazier wrote on the operative treatment of hepatic cirrhosis four years later¹ were we aware that any one had a prior claim to our own in respect to the procedure suggested. As Professor Talma's suggestion and case were recorded in a Dutch journal and in the Dutch language, with which neither of us was acquainted, our ignorance will cause no surprise.

The first case, successfully operated upon more than sixteen years ago, was shown by me in the Medical Section at the Annual Meeting of the British Medical Association in Carlisle in July, 1896. The patient, after being tapped four times at intervals of a month, and then operated upon, had recovered her health, and was shown in excellent condition and without any fluid in her abdomen eight months after the operation.

In the first paper² I offered an explanation as to the manner in which the operation was suggested to me. During a visit to the *post-mortem* room Dr. Drummond showed me the body of a man dead from cirrhosis of the liver, and explained that this patient had no ascites because the collateral circulation, chiefly through the enlarged veins of Sappey, had relieved the portal obstruction.

I then suggested that, if his explanation was correct, it might be possible to cure an existing ascites by an operation which would establish a new anastomotic circulation. In the first case on which we tried the operation the ascites was not the result of cirrhosis, and the patient died nineteen months later, unrelieved.

The second and successful case was that of the patient shown at the British Medical Association meeting at Carlisle, previously referred to, and on which the paper³ of Dr. Drummond and myself was based.

In this paper we first referred to the ordinary connexions between the portal and systemic circulations, and then said, "but when adhesions form between the viscera and parietes, innumerable new vessels develop in them and convey blood freely from the portal into the systemic circulation through the subperitoneal plexus of veins." (The proof of this is that when a parietal and visceral adhesion are separated both the visceral and parietal raw surfaces bleed.) "Probably the most important of these new channels can be developed in adhesions between the omentum and parietes."

"A study of Nature's methods suggested that operation might be useful in selected cases, for we were familiar with the enormous newly-formed blood vessels frequently met with in the portion of omentum adherent to rapidly growing abdominal tumours; we had seen adhesions of all sorts in the abdomen develop large vascular channels, and we knew that such vascular adhesions could form with considerable rapidity. On one occasion one of us (Morison) removed an ovarian cyst with twisted pedicle of three days' duration, and already vascular adhesions had fixed the omentum to the tumour."

In a second paper on the same subject,⁴ I reported the subsequent history of our successful case, and also the result of a *post-mortem* examination, as follows:

The patient, a woman, attended the Medical Section at the Annual Meeting of the British Medical Association at Carlisle eight months after the operation, and was then apparently in perfect health. The abdominal scar had yielded to some extent, producing a ventral hernia. This was the result of a cough which had troubled her for some months and of imperfect suturing, but the hernia occasioned no inconvenience and was kept in place by an abdominal belt. Two years after the operation this patient called on me concerning her ventral hernia. During this time she had felt strong and well, had led an active and happy life, and had performed all the duties of her household.

* Read before the Surgical Section of the Royal Society of Medicine.

Latterly a troublesome cough had led to a marked increase in the size of the hernia, and her belt had ceased to be a sufficient support. She was anxious to have the hernia radically cured, and, considering the trouble it was causing, the certainty that it would get worse, and the good condition she was in, I could not refuse to undertake the operation. (This was performed on October 5th, 1897.) The only peculiarity observed was that the subperitoneal vessels were large and bled freely. She recovered in an hour from the immediate effects of the operation, but towards evening became restless and complained of pricking pains and numbness in her arms and legs. Next morning, after a restless night, I found her distinctly jaundiced and complaining still more of the numbness and pain in her arms and legs, which were very tender when touched. The jaundice and restlessness increased, and on the second day after the operation she became comatose, and died at night, deeply jaundiced.

At the necropsy Mr. W. G. Richardson removed the whole of the abdominal viscera and the parietes, excepting the skin, *en masse*. He then injected the whole from the trunk of the portal vein. I showed the specimen at a meeting of the Northumberland and Durham Medical Society on November 11th, 1897, and in demonstrating it said: "The liver, the spleen, and the intestines are seen to be attached to the parietes chiefly by dense band-like adhesions. (Many of these seemed to contain little except a blood vessel, and in several of them such vessel was 4 in. in length.) The omentum, also, is firmly adherent over the anterior abdominal wall by strong bands. In all of these adhesions innumerable injected vessels are readily seen, passing from the viscera to the parietes. Many of them are fully the size of a normal radial artery. The subperitoneal plexus of vessels forms a dense large network. . . ."

Dr. Bolan reported as to the microscopical condition of the liver: "Typical cirrhosis, with much fatty degeneration. Fibrous tissues well formed. . . . So-called new bile ducts present in numbers, liver cells showing extreme fatty degeneration in all zones, and normal cells few and situated in central portion of lobule."

This patient had a definite alcoholic history.

My second successful case, published in the same paper,⁵ was that of a temperate man, aged 42, operated upon on January 12th, 1897. His abdomen was much swollen and tense with fluid.

The abdomen was opened . . . between the umbilicus and ensiform cartilage, sufficiently to admit my index finger for exploratory purposes. The characteristic hard, hobnail surface, which was felt on reaching the liver, left no further doubt as to the diagnosis, and the parietal incision was extended from the ensiform cartilage to the umbilicus. . . . The general recovery of the patient requires no note. From the surgical point of view it was straightforward. It was, however, evident, during the last few days of his stay in Newcastle, that he was much depressed mentally, and after his return home the depression increased, and for three weeks he was alternately depressed and excited. This feature seems to be deserving of more attention than would have been given to the same in an ordinary case, for it may possibly be one of the special risks of this operation. Dr. Drummond has brought before the Northumberland and Durham Medical Society at various times cases of liver cirrhosis complicated by peculiar nervous symptoms, and in one patient who died he was unable to find any change in the nervous system to account for the symptoms. In that case the liver was in an advanced stage of cirrhosis; there was no ascites, and there was a very large vein of Sappey connecting the portal with the systemic circulation. The explanation given by Dr. Drummond of the attacks—namely, that they were due to intestinal products finding their way directly into the systemic circulation without any liver influence being brought to bear on them, is in accordance with the fact that this patient was on several occasions rescued from an apparently hopeless coma by the administration of a brisk purgative, and also with the results of experiments on the liver functions.

Subsequent History.

Ten months after the operation my patient was shown at a meeting of the Northumberland and Durham Medical Society. He appeared then to be in excellent health, and said that he felt perfectly well. . . . I next heard definitely of him in January, 1899. A well-known insurance office wrote asking me to report on the nature of the operation performed two years previously. He had been passed by the medical adviser of the company as a first-class life, but before completing the insurance I was consulted.

This patient got pneumonia—of which he had previously three attacks—in the spring of 1903, never satisfactorily recovered, and died of heart and kidney disease, with general dropsy and ascites, on August 10th, 1903. The *post-mortem* examination showed liver cirrhosis. For six years he was quite well.

Tempted by this success I shortly afterwards operated upon an alcoholic man with cirrhosis and ascites who had never been tapped. He died three days after the operation comatose and jaundiced.

The only other death I have had due to the operation occurred in a young woman on whom I operated in 1910. She had cirrhosis of the liver consequent on acute yellow atrophy, and had been tapped several times for ascites.

She died three days after the operation comatose and jaundiced, as the two previous cases had.

My third successful case was published in the *Annals of Surgery*, September, 1903.

Fig. 1.—R. P., three and one-half years after operation. Shows the enlargement of the epigastric vein on the right side. The wearing of a truss has prevented the enlargement of the corresponding vein on the left side.

The patient was a man 52 years of age, a heavy drinker, who had been tapped before operation (fourteen times for ascites) at intervals varying from six to twenty days.

The operation was performed on August 29th, 1899. The liver was firm, finely granular on the surface, and of about normal size. The spleen was hard, and enlarged to at least double the normal size.

In July, 1903 (four years later), the report on his condition by the surgical registrar, Mr. G. Grey Turner, was: "He is very well; never looked better; is fat and strong, and has a good appetite. There are no signs of fluid in the abdomen. The veins in the abdominal wall are very large. He complains of some dragging pain in the abdomen; the liver can be felt adherent to the abdominal wall."

In July, 1910 (eleven years after operation), this patient was shown to the Society of Clinical Surgeons of America, who visited this country. He had been doing regular work, and was in good health. At the present time, between twelve and thirteen years after the operation, he is still well, and 65 years old.*

In my last paper⁶ I say: "Other factors besides mechanical obstruction of the portal vein doubtless aid the development or retard the arrest of ascites due to cirrhosis; but my cases prove at least that the establishment of an artificial accessory circulation can cure it." Further experience has confirmed this view, but, as I have always been careful to point out, the cases in which operation can be of use are rare and must be carefully selected.

So far as I know, the most suitable are those of alcoholic cirrhosis in patients otherwise sound and whom repeated tapping has failed to cure. None of these cases have, in our experience, been failures. The reason probably is similar to that of the cure of dropsy from heart failure following persistent overstrain. In both the chief predisposing cause of the dropsy can be removed—in the case of the heart by rest, in the case of the liver by abstinence from alcohol. This explanation seems probable, because, though I have operated upon patients in good condition with ascites due to syphilitic cirrhosis, none of them have been cured.

The most unfavourable cases are those which at their commencement simulate an abdominal emergency and suffer from pain and tense tympanites preceding the development of ascites.

The Operation.

The choice of an anaesthetic may be of importance. The great danger in these cases appears to be the development

* The same day my colleague, Mr. Grey Turner, showed a similar case. It is now more than five years since he operated, and the patient is well.

of a condition related to acute yellow atrophy, and chloroform, as is well known, can produce similar changes in the liver, so that some other anaesthetic should be chosen.

My first case taught me that the abdominal incision should be made above the umbilicus to avoid the development of a ventral hernia. With this exception, the operation I do now is the same as that I originally suggested.

The steps are:

1. Open the abdomen from the ensiform cartilage to the umbilicus.
2. Introduce the hand into the abdomen and project a finger against the anterior parietes in the middle line, 3 in. above the pubis.
3. Make a small incision on to the finger tip, and through this introduce a long small glass drainage tube into the recto-vesical or recto-uterine pouch.
4. Dry the abdominal cavity and scrub the peritoneum with mops.
5. Suture the omentum to the anterior parietal peritoneum across the abdominal wall, and close the upper abdominal wound.
6. Apply an antiseptic dressing over the wound and tube, and over this, from above down to the tube, a series of long circular strips of adhesive strapping, with the object of keeping the parietal in contact with the visceral peritoneum.
7. The tube now exposed through the dressings is surrounded with a sheet of dental rubber perforated to grasp it below the collar on it, and the separated tube dressing is wrapped up in the indiarubber sheet.

After-Treatment.

A nurse is engaged to attend to the tube and pump off the fluid sufficiently frequently to keep the dressings dry. If this can be accomplished, the dressings require no change for ten days, after which, as a rule, a small indiarubber tube can be made to take the place of the glass one. I have heard of septic peritonitis resulting from this operation. We in Newcastle have never seen this, and it may be that our free use of antiseptics during the operation and in the dressings is the explanation.

As a rule, the wounds are entirely healed in one month, and no further accumulation of fluid occurs. It need, however, occasion no serious disappointment if the fluid reaccumulates, as some of our most successful cases have required tapping on one or two occasions after their recovery from the operation.

Many successful results have now been recorded from this operation, but I have thought it more fitting to occupy the time you have kindly placed at my disposal in dealing with the general principles involved, than in enlarging upon details which can be better treated by those who may take part in the discussion which I hope will follow.

REFERENCES.

¹ *American Journal of Medical Sciences*, December, 1900. ² *BRITISH MEDICAL JOURNAL*, September 19th, 1896. ³ *Loc. cit.* ⁴ Cure of Ascites due to Liver Cirrhosis by Operation, *Lancet*, May 27th, 1899. ⁵ *Lancet*, May 27th, 1899. ⁶ *Annals of Surgery*, September, 1903.

Fig. 2.—R. P., May 4th, 1910. A striking enlargement of the superficial veins, such as is shown here, may lead to erroneous conclusions. The circulation through them is relatively insignificant compared with that in the subperitoneal vessels. In many cases of cirrhosis the subperitoneal plexus forms a spongy sheet, which bleeds like a naevus when incised. The object of operation is to make extensive communications between this and the visceral vessels. There must be, for this purpose, widespread adhesions. Operations which separate or excise the peritoneum should be avoided, and the omentum must be spread out and fixed under the abdominal wall.

DR. MARIE KJÖLSETH has been awarded a gold medal by the University of Christiania for a dissertation on a pathological subject. She is, we understand, the first woman who has won this distinction.

WE are asked to state that at the meeting of the ninth International Otological Congress, which is to be held in the new buildings of the Medical Department of Harvard University, in Boston, U.S.A., during the week beginning August 12th, 1912, the award of the Lenval, Adam Politzer, and Cozzolino prizes will be made by the International Jury chosen for the purpose. The Lenval and Adam Politzer prizes are offered for the best published work on the anatomy, physiology, and pathology of the organ of hearing; the Cozzolino prize for the best published work on the anatomy and pathology of the organ of hearing, and upon clinical therapeutics. Candidates should communicate with the President of the Jury, Professor Dr. Adam Politzer, 19, Gonzagagasse, Vienna, and should send to him the work offered in competition, at least six months before the date of the opening of the next congress. Should a sufficient number of valuable works be presented in competition, the jury may divide the Lenval Prize and the Politzer prize, thus making five prizes for distribution.