CLINICAL OBSERVATIONS ON THE DISRUPTION OF IMPACTED BILIARY CALCULI, INCLUDING THREE CASES IN WHICH A GALL STONE IN THE COMMON DUCT WAS BROKEN UP BY THE NEEDLE.¹

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THE surgical attack upon distended gall bladder and obstruction of bile ducts by gall stones is so recent that it is easy to trace many of the various steps which have led to the position in which the subject stands at the present day. I well remember one of the earliest operations, being present when the surgeon, I am not sure whether it was Mr. McGill or Mr. Robson, having opened a distended gall bladder and removed therefrom several calculi, discovered to his dismay that there were others lower down in the cystic duct which could not be seized by forceps. After a few minutes' consideration he began to manipulate the obstructing calculi by the fingers in the peritoneal cavity, and to the delight of all present succeeded in pressing them back into the gall bladder, where they could be seized by forceps and removed.

Some little time after, a similar case occurred to myself. A calculus was lying in the commencement of the cystic duct, so that about a fifth of its bare surface could be felt from the gall bladder, but the gall stone itself was too large to pass upwards through the entrance to the gall bladder by any amount of pressure short of actual crushing. Whether I tried to crush it or not I cannot remember, as the crushing of calculi in the ducts was then in its infancy, but this is what I did. Finding that I could, with the nail of the forefinger, break off bit by bit the surface of the calculus, I set to work and removed it piecemeal.

More recently, about two years ago, I dealt with a similar case in a more rapid manner. After removal of several calculi from the gall bladder, I felt the surface of another in the commencement of the cystic duct, which was far too large to be thrust backward into the gall bladder. Having at hand a No. 1 trocar I punctured the exposed surface from the open gall bladder whilst fixing the calculus with the thumb and forefinger in the abdominal cavity, and thus rapidly broke up and extracted the stone. There is no need to detain you with the more generally prevalent practice of crushing the impacted calculus by squeezing by the fingers or by forceps through the wall of the duct. A further method has been for some years suggested, but to what extent it has been put in practice I am not able to say—that is, to break up the calculus by an acupuncture needle traversing the wall of the duct. The structure of most biliary calculi is such that if the calculus be pierced by a needle it breaks or splits up into fragments, which may often then be easily crushed into smaller fragments by the finger and thumb. This was the method adopted in the three cases which follow, two of which recovered, the third ending fatally.

CASE I.—February 10th, 1893. Mr. W., aged 62, a patient of Dr. Dickey, of Colne, "had suffered from jaundice for eight months, having had no previous attack. He had suffered frequent severe paroxysms of pain, which latterly occurred every week, and were accompanied by shivering and rises of temperature to 103° and 104°. Shortly before the operation these attacks were so intense that it was thought he might die in one of them. He himself felt that he could not stand any more, and therefore he decided upon submitting to operation. He was weak and worn to a skeleton."

The operation proved to be difficult. The abdomen was small and shrunken, and the liver was large and thick-edged. The gall bladder was shrivelled and empty, deeply seated behind the thick edge of the liver, and could only be dis-

covered after considerable search. It was clearly impossible to gain anything through the gall bladder. At last, after further careful search in the neighbourhood of the duodenum, the tip of the finger discovered, in what seemed to be the position of the common duct, an oval body of the size of a haricot bean. It could not be grasped by the finger and thumb, nor by forceps. Pressure seemed for a time to make no change in the rounded body; but, after many attempts with the tip of the finger to crush it, it seemed to have a crack in the middle. Then I attempted to break it up with the acupuncture needle, puncturing it many times. At last it seemed to disappear, and could not be recognised either by myself or by Mr. Hartley, who was assisting me. This being the first case I had treated in this way, as a precaution a drainage tube reaching to the subhepatic space was inserted. His progress after the operation was satisfactory. About three weeks after the operation he had an attack of pain and collapse, and about this time bile first appeared in the evacuations, and the jaundice began gradually to fade. Again, seven weeks after the operation, there was a second severe attack of pain, which was relieved by morphine. Dr. Dickey, suspecting that the pain might be from the passing of a portion of gall stone, had the evacuations examined, and about half a gall stone was discovered and seen by him; unfortunately, it was not preserved. From the day of the operation all rigors ceased, and the only attacks of pain were the two which seemed to be associated with passing of fragments. The patient is now stout and well."

CASE II.—January, 1894. Mrs. X., aged 35, a patient of Mr. Bowman and Mr. Green, of Ripon, had been deeply jaundiced for nearly three months, having never had any severe paroxysms of pain. As she was losing condition, and was beginning to suffer from irritation of the skin, it was decided to explore, especially as a lump could be felt in the region of the gall bladder. In this operation I was assisted by Mr. Jessop and Mr. Hartley. The gall bladder was moderately distended, and contained several very hard calculi. On examining further a calculus was detected, about half an inch in diameter, in the early part of the common bile duct. The calculus proved to be extremely hard, of such a degree as I have never observed in a biliary calculus. After ineffectual attempts to crush between the fingers I made attempts to traverse the calculus with a strong acupuncture needle. These were at first unsuccessful because of the stony hardness of the calculus. At last it was transfixed, and then it broke up, so that we were all convinced that it was reduced to several fragments. The gall bladder was stitched to the surface, and a drainage tube was passed down to the seat of acupuncture. After the operation there was a profuse flow of bile through the opened gall bladder. Severe abdominal pain set in early, and she died on the third day. As there was no *post-mortem* examination, I am not able to explain the rapidly fatal result, but I am inclined to attribute it in some way to the difficulty of the manipulations caused by the stony hardness of the calculus.

CASE III.—Mrs. D., aged 40, a patient of Mr. Hillaby, of Pontefract, had suffered from complete jaundice for months, when I visited her in February last. As she was not suffering very acutely, and was not much worn down, it was decided to wait a few weeks, in the hope that, if the cause of the jaundice were a gall stone in the common duct, it might spontaneously escape.

In April there had been no amendment; she had become greatly emaciated, and was suffering intolerably from irritation of the skin, the skin of the legs being covered with small sores and scabs from scratching.

On April 25th, 1894, the abdomen was opened, and from a moderately distended gall bladder several calculi were removed. On searching further we discovered in the common duct a gall stone apparently about half an inch in diameter. This could be easily fixed between the thumb and finger, and after transfixion by the acupuncture needle was felt to break up, the fragments being further broken by crushing by the finger and thumb. After this it was very difficult to detect any lump or swelling in the site of the obstruction. The opening in the gall bladder was stitched to the wound, but no drainage tube was inserted into the abdomen. Her progress, as far as the wound was concerned, was perfectly satisfactory. Bile began to flow from the gall bladder in

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small quantity, 2 or 3 ounces a day. She at once lost the irritation of skin, had good nights, to which she had long been a stranger, enjoyed her food, and gained flesh. The subsequent course of this case is most peculiar and difficult to explain. Two points became clear. She at once lost almost completely the irritation of the skin, and the sores resulting from it rapidly healed. Indeed, the night after the operation was the first restful night she had had for some time. The second point was that she very soon began to thrive and gain flesh. Also within an hour or two after the operation she vomited fluid tinged green, from which we inferred—wrongly as it turned out—that the flow of bile into the bowel was re-established. Notwithstanding all this, the jaundice continued, the urine was generally deeply tinged with bile, and the evacuations continued to be of the tint of pale brown paper, not clearly containing bile. And yet—and this is the curious point— $\frac{3}{4}$ ij or $\frac{3}{4}$ ij of bile daily escaped from the opening in the gall bladder. At the end of a month, by daily syringing of the gall bladder numerous fragments of calculus, evidently portions of the gall stone broken up by the needle, regurgitated from the common duct, were washed out, along with two or three small oval calculi which must have descended from the hepatic ducts. Four facts at this period seem to be clear: (1) That the calculus in the common duct had undergone complete disruption by means of the needle and crushing; (2) that the fragments had failed to escape along the duct into the bowel, but had worked their way backward into the gall bladder; (3) that the passage from the bile tracts into the bowel was not free; (4) that, although there was an escape for bile through the open gall bladder, only a small proportion of the normal quantity of bile made its way through this biliary fistula. The puzzle of the case seemed to be this: Seeing that there is an obvious escape for bile through the established biliary fistula, and that apparently no bile passes into the bowel, why do we not have an escape of 20 or 30 ounces instead of 2 or 3 through the biliary fistula? And seeing that there is a vent for the bile, why does not the jaundice disappear?

At the end of eight weeks I thought it right to reopen the abdomen, in order to make sure that there was no fragment of calculus still impacted in the common duct. A careful search failed to detect a trace of any gall stone or hardness, or suspicion of a fragment, either in the cystic or common duct. And a further examination of the hepatic ducts failed to discover any source of obstruction in them. This second operation was attended with no drawbacks. The jaundice continued, the small flow of bile continued, she was restful, rarely had a trace of the irritation of skin, gained flesh, and, on leaving a month afterwards, was able to walk about.

On January 3rd, 1895, Mr. Hillaby reports "that she can go about and walk a mile. The jaundice, which had almost vanished, had again become marked. At times there is itching of skin, but never so distinct as before the operation. Flow from the fistula, variable. There is always some fine biliary *débris* washed out when the fistula is syringed."

The case remains as much a puzzle as ever.

From the foregoing cases we may fairly infer that the use of the needle is a very valuable addition to our means of dealing with impacted biliary calculi, and may prove to be an important substitute for the crushing forceps. Where the gall stone will yield to the crushing effect of the thumb and forefinger, this is probably the best and safest method. But when the finger crushing fails, then I expect that the needle will prove to be more certain and less dangerous than either the use of crushing forceps or removal of the calculus by incision of the duct.

MEDICAL LEGISLATORS IN BELGIUM.—In the last Belgian Parliament there were two representatives of the medical profession in the Senate in the persons of Professor Crocq, of Brussels, and Dr. Soupart, of Ghent, and three in the Chamber of Representatives, namely, Drs. Thiriar, of Soignies; Heynen, of Neufchâteau; and Delvaux, of Dinart. In the new legislature there are still only two medical senators, namely, Drs. Van den Corput, of Brussels, and Thiriar, of Soignies, but the number of medical members of the lower house has risen to four. These are Drs. Heynen and Delvaux, who have been re-elected, and Drs. Gillard and Rouvaux, of Namur.

ON THE CLINICAL CONFUSION BETWEEN DISTENSION OF THE GALL BLADDER AND MOVABLE KIDNEY.¹

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PERHAPS it does not on first thought seem that there is much resemblance between an enlarged gall bladder and a movable kidney. Yet experience shows that the one is often confused with the other, and that, too, by most capable clinicians. Much more frequently the enlarged gall bladder is mistaken for a movable kidney; but occasionally the opposite error is made. Not rarely the two abnormalities coexist, and then one may be diagnosed and the other overlooked. I have now seen both present in the same person so many times that I have come to the conclusion there is in some instances a causal relationship between them.

If we inquire in which sex gall stones and enlarged gall bladder are generally found the answer is not uncertain; women are much the most frequently affected. A glance at the surgical registrar's (Mr. Leopold Hudson) reports of my own hospital shows that in the four years 1890-93 10 patients suffering from gall stones were under surgical treatment, and of these 9 were females. So also of movable kidney. During the same period there were 19 patients with movable kidney subjected to nephrorrhaphy, and of these 17 were women and 2 men. It is true that a third male patient, making the twentieth case of movable kidney, was also under treatment within this time, but in him the mobility of the kidney had been caused by a large retroperitoneal abscess due to caries of the seventh, eighth, and ninth dorsal vertebræ, and the kidney was pushed forwards by, and moved upon the front of the abscess. Dr. Hare's figures are almost the same as these, for out of 23 cases of movable kidney 20 were in women. Thus we see from these few figures—and a larger number of cases will but confirm the statement—that both enlarged gall bladder and movable kidney are from seven to nine times more frequent in women than in men.²

The question as to which kidney is more frequently movable hardly affects the matter under consideration, but it is pretty certain that the right kidney is nearly thirteen times more often movable than the left.³

We have then these three noticeable facts: (1) That movable kidney and enlarged gall bladder are each much more frequently met with in women than in men. (2) The right kidney is many times more frequently movable than the left; and (3) movable kidney and enlarged gall bladder often occur in the same person. Another point is that though most of the women with movable kidney, and also those with biliary troubles, have borne several children, some of my patients were barren married women, or single women who had never been pregnant.

Now, can we piece these facts together to explain the association of the two states in the same person? I think we find the explanation in tight lacing, or, as no woman ever admits to have tight-laced, I will say in the time honoured fashion of wearing corsets. Lacing, I believe, causes displacement and mobility of the kidney; and it also causes displacement of the liver, kinking of the gall ducts, and the formation of gall stones as the result of obstruction to the ready flow of the bile in the ducts.

I think, too, that whereas the downward pressure of the liver induces mobility of the kidney, the mobility of the kidney in turn reacts upon the gall bladder, and causes its distension by dragging upon the duodenum and the bile ducts, and thus obstructing the passage of the bile. In this way we can understand how it is that women are frequently the subjects at once of distended gall bladder and movable right

¹ A Paper read before the Metropolitan Counties Branch, North London District, January 19th, 1895.

² Landau's tables show 273 women and 41 men out of 314 cases of movable kidney.

³ Of 173 cases, according to Landau, in which the side is noted 152 were right and 12 left kidneys, and in 9 both kidneys were movable.