Since these remarks were written, another case showing the benefit of short-circuiting for carcinoma of transverse colon has reappeared at hospital. I "short-circuited" more than two years ago, and on recovery proposed excision of the cancerous colon. But the poor fellow, aged 31, was obliged to decline, as his business matters were in confusion and required his personal attention then. He only returned three weeks ago looking very well and with regular bowels, but the growth was too far gone to justify removal (*vide Clin. Soc. Trans.*, March, 1905, for details).

REMOVAL OF GALL BLADDER IN A WOMAN AGED 75.

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THE following case may be worth recording on account of the age of the patient, the severity of the symptoms, and the completeness of the recovery.

Mrs. M., aged 74, a widow, had suffered from frequent attacks of pain in the right hypogastric region, accompanied by jaundice. There had been progressive exhaustion and emaciation for eighteen months. I saw her first in consultation with Dr. Muzio Williams in March, 1902. The history was that eighteen months previously she had been suddenly seized with violent pain in the right hypogastric region; vomiting was severe, and the following day all the usual symptoms of jaundice manifested themselves. The stools were pale, the urine was porter-coloured; the skin yellow, and the itching intolerable. This condition lasted for some days, the jaundice never completely disappearing; when in about a month another attack came on. These attacks recurred with increasing frequency, until, at the time I saw her, she was completely bedridden, rarely out of pain, deeply jaundiced, had lost more than 2 st. in weight, and had all the appearance of a woman suffering from malignant disease of the liver. There was a large solid mass reaching from below the right costal margin to the level of the anterior superior iliac spine; percussion over the right chest gave a clear note down to the last rib. There was complete enteroptosis. The lower border of the liver was easily felt below the umbilicus, and in the right iliac fossa a small movable mass was made out.

Dr. Turney had previously seen the patient and advised, in the event of the continuance of the symptoms, that an operation should be attempted. Dr. Muzio Williams agreed with me that, as the patient was markedly losing ground, there was no other course open.

I made an incision as for appendicitis, as that corresponded with the lower edge of the liver and was over the mass which I took to be the gall bladder. That organ was found considerably enlarged, and an incision into it showed it to be greatly thickened; the walls were more than $\frac{1}{2}$ in. thick, and it was filled with a large mass of inspissated bile which readily broke down; there were in addition several large gall stones. After removing the mass and the stones, 6 oz. of normal saline solution were injected into the cystic duct; these were followed by another 3 oz. As none returned, it evidently passed through the *via duodenales* into the duodenum.

I removed the gall bladder and succeeded in getting the neck of the cystic duct into the lower angle of the peritoneal wound. The peritoneum was then closed and the fascia muscles sewn round the orifice of the duct, but the skin was not attached to the stump. The dressing was changed daily for a week, and 3 or 4 oz. of normal saline solution injected into the duct daily for seven days. After that the injections were discontinued. There was a gradually diminishing quantity of bile discharged, and in a month the wound was healed.

From the day following the operation decided improvement in all the symptoms set in; the urine became normal in colour; bile passed freely into the intestine, as evidenced by the colour of the stools; gradually the jaundice disappeared, the pain entirely ceased.

I have just seen the patient, two years after operation; she has put on more than two stone in weight. She takes daily walking exercise of four miles. She has had no pain or return of any of the symptoms, and is quite well, and stronger than she has been for years past. The eminently satisfactory result of operation on this case of severe cholangitis is encouraging.

I am indebted to Mr. Mayo Robson for the suggestion which I found in his book—as to the injection of saline solution—and I cannot help thinking that it was the washing out of the clogged ducts that cured this patient.

NEW METHODS OF STUDYING AFFECTIONS OF THE HEART.

By JAMES MACKENZIE, M.D.,
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IV.—ACTION OF DIGITALIS ON THE HUMAN HEART IN CASES WHERE THE INCEPTION OF THE RHYTHM OF THE HEART IS DUE TO THE VENTRICLE.

I HAVE already endeavoured in two papers in this JOURNAL¹ to demonstrate the fact that the rhythm of the heart may originate with the ventricle. Continued observation has afforded me still stronger proof in favour of this observation. The study of the effect of digitalis on my patients has brought out very striking differences between these cases and those where the rhythm starts at the auricle. No rational idea of the manner in which digitalis acts can ever be obtained unless this change in the heart's action is appreciated. The means whereby one can recognize and demonstrate whether the rhythm of the heart is auricular or ventricular in origin is by the jugular pulse. When a pulse is present in the jugular if the auricle is active it will undoubtedly always produce a wave with its systole, but if the rhythm is ventricular in origin then no wave will appear at the time usually occupied by the auricular systole, but the jugular pulse will be found to be synchronous with the ventricular systole. This change of the jugular pulse from one of the auricular type to one of the ventricular has been illustrated by examples in my previous papers in this JOURNAL and in my book,² and very convincing illustrations will be found in the second case recorded in this paper, and in a paper which Deutsch read at the last German Medical Congress at Leipzig.³

Apart from the scientific interest which this view should evoke, the matter is one of the highest practical importance, as a large number of the cases of heart failure which we are called upon to treat present not only this feature, but the inception of the rhythm by the ventricle is the direct and immediate cause of the heart failure. I have been engaged for some time on a minute inquiry into this subject, and the results obtained so far justify me in stating that they will not only profoundly modify our conception of many forms of heart failure, but will give us a more direct and definite aim in our attempts at treatment.

In my first paper on the ventricular rhythm, I showed that this condition might arise in different ways, one of which was that which occurred in advanced disease of the mitral valves. In this complaint, towards the end of life, the pulse frequently becomes irregular—the well-known "mitral pulse." This is almost invariably the sign that the ventricle has taken on the inception of the rhythm of the heart. If there has previously been present an auricular systolic murmur of the crescendo type it disappears, though a low-toned diastolic murmur may continue; and if there has been a jugular pulse present, it will now be found to be of the ventricular type. If the heart's action is rapid, it may be quite regular with the ventricular rhythm (see Figs. 5 and 8).

There seems to be reasonable ground for assuming that an anatomical basis will be found to account for some varieties of ventricular rhythm. In those cases where the ventricular rhythm arises subsequent to long-standing disease of the mitral valves and great dilatation, I had assumed that the auricle, like an over-distended bladder, became paralysed, temporarily or permanently. Certain signs, however, now lead me to doubt the correctness of this view in all cases, as it would seem that the auricle might contract during the ventricular systole. I mention this, that the term "auricular paralysis" may be understood to apply to those cases of long-standing mitral disease where the rhythm is ventricular in origin, and where no evidence of an auricular contraction occurs. Dr. A. Keith,⁴ in his recent Hunterian lectures, dwelt upon the nature and functions of certain bands of muscle fibres in the heart. In these lectures he analyses the anatomical condition of a number of hearts I sent him, and he brings out in a striking manner the relationship between certain anatomical conditions and the symptoms during life. Thus, in describing the heart from the first case I cite below, he found extreme atrophy of the musculature of the auricle with great elongation and atrophy of the auricular canal, there being also marked stenosis of the mitral and tricuspid orifices (see his Fig. 9). In another heart with mitral and tricuspid stenosis which I