NOTES

ON A

CASE OF CANCER OF THE PYLORUS
IN WHICH PYLORECTOMY WAS
PERFORMED.

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MEDICAL HISTORY OF THE CASE BY DR. MC CALL ANDERSON.

THE following case¹ is worthy of being recorded in connection with the question of operative interference, as it is desirable that unsuccessful, as well as successful, cases should be published.

On January 9th, 1888, on the recommendation of Dr. Samuel Sloan, Mrs. S., aged 48, was admitted into the Western Infirmary complaining of symptoms, referable to the stomach, of four months' duration. Her father died, aged 40, of "chest affection," her mother of "paralysis," at 70; two brothers and two sisters died in infancy, and two sisters, at the ages of 30 and 40, of bronchitis and enlargement of the liver respectively. Her remaining two sisters are alive and well. She herself has had six children, three of whom are dead, one being stillborn, and the other two having died of scarlet fever. Of the remaining three two are well, and the third is at present under my care suffering from chorea. She has always, hitherto, enjoyed good health, and menstruated regularly, but now she seems to be approaching the menopause. She has been a total abstainer all her life.

About four months ago, without obvious cause, she began to complain of flatulence and of "waterbrash," to which symptoms pain in the epigastric region and vomiting were added two months thereafter, and her friends noticed that she was losing colour and getting very thin. The vomiting always occurred two or three minutes after food, and consisted of the ingesta, little altered, and never contained any blood, nor presented the "coffee-grounds" appearance. The pain occurred at first only after taking food, but latterly it has been more continuous, and has often been very severe, although she cannot well describe its character. Since her illness commenced her appetite has been very fitful, and has never been very good, although anorexia is not a prominent feature, but, for the last two months, her bowels have been very constipated, and she has never had a natural motion.

On examination she was found to be very pallid, very weak, and much emaciated, but she had no fever, nor was there any evidence of disease in any organ with the exception of the stomach.

On placing her on her back and exposing the abdomen, inspection at once revealed a very considerable distension in the epigastric and left hypochondriac regions, having quite the shape of a distended stomach. The great curvature of the stomach was very distinctly indicated, extending at its lowest point as far as the umbilicus, and on passing the hand along its course to the right, it was found to terminate in a hard and nodulated tumour about the size of a hen's egg. This tumour, which was only slightly tender on firm pressure, was freely movable in all directions, and fell very much to the left on lying on that side. There was dulness on percussion over the tumour, but over the rest of the distended stomach the note was tympanitic, and even after fasting for sixteen hours succussion was easily made out.

On January 10th treatment was commenced. She was allowed nothing by the mouth except a small piece of ice when she was thirsty, and a teaspoonful of Carnrick's beef peptonoids thrice daily; but a milk suppository was inserted into the rectum every two hours, and at the alternate hours she had an enema of Carnrick's peptonoids (3 drachms in 3 ounces of warm water). Her bowels were regulated alternately with a simple aperient pill and a warm water enema.

On examination, on January 23rd, it was found that under this treatment the symptoms of dilatation of the stomach had entirely

disappeared, and the tumour was now felt immediately to the right of the left edge of the ribs, and extending nearly to the middle line. On sitting up, however, it descended about a couple of inches. Under the treatment just mentioned she felt very much more comfortable in every respect, and did not seem to be any weaker than at the time of admission.

The symptoms presented in this case led to the conclusion that she was suffering from a cancerous obstruction at the pyloric orifice of the stomach, while the small size of the tumour and its remarkable mobility—which pointed to its being non-adherent—along with the absence of any evidence of implication of other organs, led me to think that it might be a suitable case for resection of the pylorus. Accordingly, after consultation with my colleagues, it was decided to place the whole matter before the patient and her friends, without concealing in any way the great danger of operative interference, and, as they were unanimous in their desire to have it done, she was transferred to the service of my colleague, Professor George Buchanan.

DESCRIPTION OF THE OPERATION, WITH REMARKS THEREON BY
PROFESSOR GEORGE BUCHANAN.

The patient referred to in the report by Dr. Anderson was placed under my care on January 24th, 1888. The danger of the operation was fully represented to her and her husband by me in such form that, so far from recommending or even biasing, I told them that their acquiescence must take the form almost of a request rather than a consent. But they had well weighed Dr. Anderson's words, and quite resolved to have it done.

The operation was done after the manner of Billroth, as detailed in Wüller's monogram and in Butlin's *Operative Surgery of Malignant Disease*, with one or two slight modifications.

I did not adopt the recommendation that the stomach should be washed out with tepid water for a few days previously to, and also two hours before, the operation. I am confident that if the stomach could be by any treatment put into the state of Mrs. S.'s, such manipulation, a most harassing thing for the patient, would not be required. In her case the stomach was practically empty for days, and on the morning of the operation was so, as was proved at the operation. Such strength as remained to her was not, therefore, taxed in the morning by any such disagreeable process.

She was placed on the table at 11.30 A.M., and was put back to bed at 2.30 P.M. From the commencement of the giving the anæsthetic till the bandaging up of the wound occupied two hours and a half.

There were present, besides others, Sir G. Macleod, Dr. Patterson, Dr. Cameron, and Mr. Maylard who had himself done an operation of the kind two years ago, and as he offered to devote the whole day to be present, he afforded the most valuable assistance in the most trying part of the proceeding, namely, holding up and coapting and assisting in passing the needles through the cut orifices of the stomach and duodenum. Ether was administered by Dr. J. L. Steven with most excellent effect.

I made a vertical incision from the umbilicus to the ensiform cartilage, and without any hæmorrhage cut through the linea alba into the peritoneum. I put my hand into the abdomen and felt nearly opposite the incision, a little to the right side, the end of the stomach with a smooth tumour the size of a large hen's egg surrounding the proximal end of the pylorus. Its right limit was sharply defined at the pylorus, and an almost as clearly defined extremity to the left marked the extent of the stomach invaded. It was freely movable, and there were no adhesions, so that without trouble it could be lifted up to the abdominal wound, and the thin diaphanous webs of the lesser and greater omentum examined. The process of separating the lesser omentum from the upper and the greater omentum from the lower curvature of the stomach is very tedious, as every half-inch has to be secured with a double ligature, and snipped between. When this was accomplished Mr. Maylard used the forefinger and thumb of both hands as a clamp on the proximal part, a flat sponge was placed underneath the stomach and duodenum now drawn up to the wound, and the stomach was cut through. Scissors were used, and the section proved most satisfactory. Not a particle of fluid flowed out, and so far as one could judge the gastric wall, where divided, seemed beyond the tumour.

It is unnecessary to detail all the manipulations with needles and the different modes of introducing them which are necessary, according as one deals with the sewing from within or from outside the viscera. The really critical and difficult part of the

¹ Reported by William MacLennan, M.B., Resident Physician.

operation, viewing it as a piece of skilful manipulation, is where the upper point of the cut duodenum is joined to the lower point of the upper curvature of the stomach, where it has been stitched to close in the upper two-thirds of the gap left by the piece cut off with the tumour.

To do this the assistant must have the stomach end in one forefinger and thumb, and the duodenum end in the other forefinger and thumb, and hold the points in absolute contact; but, besides, must elevate and depress them synchronously with the movements of the surgeon's curved needle, so that the action, to be completed satisfactorily, is composed of the harmonious motion of four hands. So much was I impressed with this, that I can easily conceive that Billroth and his assistants, who have together done the operation many times, ought to accomplish it far more rapidly than the most skilled operator doing it for the first time; and, as the shortening of the time occupied is one of the most necessary desiderata, it is not improbable that increased experience and modification in manipulation may have this effect, and so lessen the primary mortality of the operation. In all, over forty stitches were introduced, besides those used to close the abdominal wound.

When the stomach and duodenum were joined, and just before the abdomen was closed, the parts seemed to fit each other so exactly that it was difficult to realise that four or five inches had been cut away. Also it was satisfactory to notice that neither blood-clot nor any of the contents of the stomach or duodenum had gained admission to the abdomen, though a small vessel in the cut edge of the duodenum had to be ligatured with a fine silk thread.

During the first two hours the patient, who was completely under the effects of ether, was fairly well, but about this time began to show signs of exhaustion, getting very pale, with feeble pulse. Stimulants were carefully administered by subcutaneous injections of ether, enemata of brandy, and small quantities of brandy rubbed inside of the cheeks. But by the time the operation was completed she was in a state bordering on collapse, almost pulseless, cold and white.

She was placed in bed, warmth was applied to the surface, and small quantities of brandy given.

I saw her again at 6 P.M., and by this time the heat was restored and the pulse was fairly good. There was no vomiting, and she declared she felt neither pain nor sickness, but very weak. This rallying went on till midnight, when signs of depression again came on, and she gradually sank till 8 A.M., when she died.

Post-mortem Examination.—On removing the stitches from the abdominal wound the coapted surfaces of the peritoneum were found closely applied, seemingly even partly glued together. The abdominal cavity was freely opened in such a way as to obviate the slightest displacement of its contents. They were found precisely as they had been placed at the operation, and not a particle of blood or other fluid had escaped from the line of union. The cut end of the duodenum was lying on the surface of the pancreas, and seemed already to be partly adhering to its peritoneal covering. The stomach and duodenum were carefully removed and laid on a slab, and the stitches kept the parts so well in position that they could be moved about without disturbing the union. The weakest point of union was at the posterior wall of the duodenum, where the stitches were closely placed by interrupted suture, and here, with a little pressure, the point of a probe could be made to pass through the line of union. Here, however, the line of suture while *in situ* was resting on the pancreas, and if the patient had lived adhesion between the peritoneal surface of the bowel and that of the pancreas would have occurred, in fact, had already begun. So far as the anatomical manipulation was concerned, the examination was evidence that the result was just what was desired. The stomach contained about two ounces of brownish fluid. Examination of the seat of the incision showed that the diseased structure had been completely removed. The structure of the tumour removed was cancer of the colloid variety. A small gland in the lesser omentum, seen at the *post-mortem*, was removed, and on microscopic examination proved to be infiltrated with a material somewhat resembling the primary tumour.

REMARKS.—The conclusions I have drawn from the experience of this case, and from a study of the subject² are: 1. That if pylor-

rectomy is to be undertaken with any prospect of success the patient must be urged to submit to it long before he is reduced to a state of approaching inanition by starvation. 2. The success or fatality of the operation itself will be greatly affected by the length of time the abdominal cavity is kept open. 3. The freedom of the tumour from complications, as adhesions and secondary infiltrations, is necessary, but sometimes can only be ascertained during the operation. Meanwhile, as the number of operations performed is still very limited, the question, "Is pylor-rectomy justifiable or not?" may be disposed of by quoting the two following opinions, one by Mr. Butlin, who has made the question the subject of very extensive study from the history of all the recorded cases; the other from Professor Billroth, the contriver of the operation and the most extensive and successful operator.

Butlin: "The excessive mortality due to the operation, the rapidity of recurrence in what have appeared to be most favourable cases for operation, the return of the symptoms of obstruction in some if not many of the cases, and the fact that there does not appear to be one case which can be claimed as a genuine cure, lead me to doubt whether the operation of resection of the pylorus for cancer is ever a justifiable operation."

From Professor Billroth's assistant: "Wien, Klinik Billroth, February 2nd, 1888. To Professor George Buchanan.—Dear Sir,—Professor Billroth does not only consider the operation of resection of the pylorus as a justifiable one, but he continues operating with good results in many cases, as you will see from the pamphlet following this letter. Of course he does not operate in cases of carcinoma, if there are already infiltrations and adhesions to the liver and pancreas. In these cases he prefers Wölfler's operation or gastro-enterostomy.—Believe me, yours truly, FRITZ SALZER."

Accompanying this letter was a statistical table of the operations done in Professor Billroth's *Klinik* in 1887, three by Billroth and one by Salzer. Three of these recovered and were alive at the time of writing; the fourth died after fourteen days. Surely there is, in the presence of such facts, good reason for a little longer suspending judgment.

I remember the time when one of the most accomplished surgeons of his day publicly asserted that, if a surgeon performed ovariectomy again and it was followed by a fatal result, he might with justice be tried as a criminal charged with culpable homicide; and this owing to the almost uniform mortality from the operation.

I am not an advocate for the very frequent performance of pylor-rectomy, and I have before stated the conditions which may lead to further success in the future. Meanwhile I would counsel everyone who has the prospect of being called on to do it to practise it frequently on the dead body. The time occupied in passing the stitches can only be curtailed by frequent practice on the parts *in situ*.

As this is one of the surgical manipulations requiring special aptitude and interest and frequent repetition to ensure anything like success. I am of opinion that the operating surgeons of a large community, with so many hospital appointments, might agree to delegate all such operations to one or two young men who would be willing to take it up, and who would accept the duty, not because they could at first do it better than their compeers, but because they would cheerfully face the responsibility of keeping up the special knowledge required by mastering everything written about it, and the special aptitude required by the frequent practice of it in the *post-mortem* room.

ST. JOHN AMBULANCE ASSOCIATION.—The course of "First Aid" lectures which were held at Esher and which were attended by H. R. H. the Duchess of Albany, was finished on March 1st, and last week the examination took place, when seventeen candidates out of the twenty-seven composing the class were examined, amongst the number being the Duchess of Albany. The examiner was Dr. Coates, R.N., who, after a searching examination, reported all the candidates, with one exception, as being very well up in their work, amongst the successful candidates being the Duchess of Albany. After the examination, Her Royal Highness thanked the lecturer, Surgeon Lees Hall, for the very pleasant, instructive, and interesting course of lectures given, and which she felt sure the whole class had enjoyed.

² Authorities consulted: Wölfler's monogram on the *Method of Excising the Pylorus*; Hacker, *Die Magenoperationen am Professor Billroth's Klinik*, 1880 and 1885; Salzer, *Statistics of Operations in Billroth's Klinik* in 1887; Winslow,

American Journal of Medical Science, 1885; Butlin, *Operative Surgery of Malignant Disease*, 1887.