A CASE OF EXCISION OF THE PYLORUS: DEATH IN FOUR DAYS.

By JOSEPH COATS, M.D., AND A. ERNEST MAYLARD, B.S.

H. K., a carpenter, aged 47, was admitted to the Western Infirmary, Glasgow, under the care of Dr. Joseph Coats, on February 10th, 1886. He complained of great weakness, emaciation, pain, and frequent vomiting. The history went back for a period of two years, during which time these symptoms had been more or less present, although, latterly, the frequency of the vomiting had rather diminished. The emaciation, on admission, was very great; and, in spite of treatment, he still lost flesh, his weight falling from 7 st. 4 lbs. to 7 st. 1½ lbs. in a week. A very obvious tumour was discovered on palpation of the abdomen, and it was also discovered, by palpation and percussion, that the stomach was moderately dilated. The tumour was somewhat in the form of a cylinder, placed transversely, two inches above, and slightly to the left of, the umbilicus. Examined day after day, it was obvious that the tumour shifted its position, being sometimes further to the left than at other times. It was, at all times, somewhat freely movable from above downwards.

There could be little doubt that this was a case of cancer of the pyloric region of the stomach, and that the affected portion of the stomach was practically free from adhesions. It occurred to Dr. Coats, therefore, that if excision of the pylorus is a justifiable operation, this was a favourable case for it.

The case was mentioned incidentally to Mr. Maylard, and he came to see the patient. Chloroform having been administered, a much more perfect examination could be made through the lax abdominal wall, and a firm cylindrical tumour could be felt, having a long diameter of scarcely four inches. The tumour could be grasped, and moved freely upwards and downwards.

The apparent feasibility of the operation having been decided on, the man and his wife were spoken to, as fairly as possible. It was stated that the patient had cancer of the stomach, and that a very serious operation might be performed, but that the prospects of success were not great; he might not long survive the operation, and, if he did, the disease might return. The matter having been impartially put before them, they were left to decide, and they determined to have the operation performed.

Operation.—On Thursday, March 11th, the operation was performed by Mr. Maylard at the Glasgow Training Home for Nurses. The evening previous to the operation, the patient's stomach was washed out, and the opportunity taken of inflating the organ by blowing through the injection-tube. In this way, a better idea was obtained of the extent of dilatation. The anæsthetic was in charge of Dr. Lindsay Steven. A slightly oblique incision was carried across the abdomen, about one inch above the umbilicus, to the extent of five inches. The peritoneal cavity having been opened, the tumour was at once come down upon, free from all superficial, and apparently from all deep, adhesions. Enlarged glands could be felt in the gastro-hepatic omentum, and a few in the region of the duodenum; there was, however, no matting together of the parts. The small omentum was first detached from the upper border of the part to be removed, and, the fingers thus admitted into the cavity of the omentum, separation of the great omentum from the lower border was easily effected. The tumour being now free, was, with the neighbouring part of the stomach and duodenum, drawn out of the abdomen, and a flat sponge inserted beneath the parts thus exposed. Three Lambert's sutures were passed through the duodenum and stomach, along the inferior border, to fix the position of the parts after removal of the pylorus, and to act as a guide also in cutting. While it was easy to be practically certain of being beyond the limits of the tumour-growth on the duodenal side, it was by no means so with the stomach. Here, there appeared rather a gradual thinning away of the tumour than any sudden cessation. With a pair of scissors, the stomach-walls were divided, from the lesser curvature downwards, and the remaining part of the stomach—that to be returned—was taken charge of by Dr. Hector Cameron, who kindly assisted throughout the operation. Seventeen Lambert's stitches were now passed as "occlusion sutures," an opening being left at the lower part, sufficient in size for the attachment of the duodenum. The tumour was now easily and rapidly separated from the duodenum. The three Lambert stitches first passed were tightened, and thus the lower part of the duodenum was approximated to the lower part of the

stomach. A continuous suture was passed from inside, extending to about the posterior third of the circumference of the canal, and embracing the muscular and serous layers. To fix the mucous membrane of the stomach and duodenum over this, three superficial sutures were passed. From this point, onwards, and completing occlusion, Lembert sutures were employed. In all, about forty sutures were used, exclusive of the continuous one. The enlarged lymphatic glands, in the gastro-hepatic omentum, were now removed. Throughout the operation, which occupied three and a half hours, the patient never gave any cause for very grave anxiety. In every respect, the strictest antiseptic precautions were observed.

After Operation.—For the first thirty hours, the patient appeared to be doing well. He suffered from flatulency, which gradually subsided. For twelve hours, he was fed solely by enemata; but, at the end of this time, a teaspoonful of milk with ice was given by the mouth every hour, increased later to double the quantity, with a little brandy. On the evening of the second day, vomiting commenced and continued, completely exhausting the man, who died exactly four days after the operation.

Necropsy.—The abdomen only was examined. The stomach and intestines were found greatly distended with gas. The abdominal parietal wound was healing well, and attached by slight adhesion to the parts beneath. There was no general peritonitis; no indication of any escape of the contents of the stomach. Fibrine existed on the anterior surface of the stomach, extending back for two inches from the visceral incision, but none existed on the duodenum. On removing the parts operated upon, adhesion existed between the visceral wound and the underlying tissue. The stomach, with the part of the bowel removed, were found to contain nearly a pint and a half of bile-stained fluid, with no characteristic smell. There was no leakage of this fluid through the sutured visceral wound; no stitches could be seen, except the posterior continuous one, and here slight traction allowed separation of the edges. This was distinctly the weak part, union elsewhere being quite firm. The index-finger could be easily passed through the new pylorus, between the bowel and the stomach. The parts, when laid out in position, had a very normal appearance.

Nature of Tumour.—The part removed at the operation measured two and a half inches along the upper border, and four inches along the lower. The walls of the canal were uniformly enlarged, and the pylorus admitted the passage of an ordinary lead-pencil. There was no ulceration of the mucous membrane. To the naked eye, the tumour had apparently the characters of colloid carcinoma; but, microscopically, was found to be scirrhous, very rich in cells. Sections were made of the stomach, in the immediate neighbourhood of the part removed; but, beyond an increase in the number of small cells between the secreting tubules, there was nothing which could be definitely stated as tumour. The muscular coat was much thickened towards the tumour, and this, no doubt, led to the difficulty, at the time of operation, of determining the limits of the growth.

REMARKS.—This case, although unsuccessful, is not without some points of interest. The operation of pylorotomy is still *sub judice*, and failures, as much as successes, should be accurately reported. It is with these feelings that we have recorded as concisely as possible, and, we hope, sufficiently clearly, the details of the case. Prior to operation, the dimensions and mobility of the tumour were pretty accurately ascertained. The enlarged glands, however—one of which was equal in size to a large hazel nut—could not be felt. Existing, as it and others did, in the gastro-hepatic omentum, and so extending up to the transverse fissure of the liver, they were really protected beneath the latter organ, and so effectually precluded from being detected by palpation.

With few modifications, the method of the operation was much as advised by Wölfler (*Ueber die ausgeführten Resectionen des carcinomatösen Pylorus*). As regards sutures, the least satisfactory was the posterior continuous one. While coaptation of the wound edges had been efficient, union was not firm, very slight traction being sufficient—*post mortem*—to cause separation.

The actual cause of death is difficult to determine. The almost uninterrupted vomiting, which carried off the patient, did not appear until thirty hours after the operation, and could not, therefore, be attributed to the anæsthetic. The only obvious pathological conditions were, as above stated, the great distension of the stomach and intestines and the limited patch of peritonitis, as shown by the fibrine on the surface of the stomach, to the extent of two inches from the seat of union.

MEDICAL MAGISTRATE.—Dr. John Mitchell, of Barnard Castle, has been placed on the Commission of the Peace for the North Riding of Yorkshire.