

OESOPHAGO-JEJUNOSTOMY FOR IRREMOVABLE CARCINOMA OF THE CARDIA

BY

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The approach to carcinoma of the upper part of the body and fundus of the stomach through the left pleural cavity with incision of the diaphragm has allowed the removal of many of these growths which were inaccessible from the abdomen. Even when malignant cells have extended beyond the operative field, it has been considered worth while to remove the primary growth and anastomose the remaining part of the stomach to the oesophagus as a palliative measure. It may happen, however, that the obstacle to successful removal is local infiltration of the growth itself. If, in addition to local fixation, spread to the peritoneum and liver suggest that the patient has no more than a few weeks to live, it may be best to close the wound and to rely on sedatives for relief. If, in spite of fixation, there is a prospect, in the absence of starvation, of the patient living a few months, and particularly if his economic circumstances make this desirable, some attempt should be made to relieve the obstruction. The operation of exposure of the cardia is in itself a major one, and once it has been undertaken it should not lightly be abandoned without the reward for the patient of some improvement in his symptoms. Without this he is left to a most unhappy fate. To slow but bearable starvation is added the almost intolerable discomfort of constant regurgitation of fermenting food, saliva, and mucus. The oesophagus often distends to accommodate large quantities of fluid with which it takes the patient unawares in his sleep, discharging it into his throat and causing him to choke. These symptoms are in no way relieved by jejunostomy, which may only prolong a miserable existence. The operation described here was designed to overcome the mechanical obstruction at the cardia so that these patients end their days swallowing normally and without vomiting. This is achieved by mobilizing part of the small intestine on an elongated mesentery according to the method of Roux, passing it up through the diaphragm into the posterior mediastinum, and anastomosing it to the oesophagus above the growth. The immediate results recorded in two patients seem to justify further use of the method.

TECHNIQUE

One hour before operation the patient is given omnopon, 1/3 gr. (20 mg.), and scopolamine, 1/150 gr. (0.4 mg.). The throat is anaesthetized with 2 per cent

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amethocaine hydrochloride, and sodium pentothal is given into a blood drip until relaxation of the jaw occurs. A Negus oesophagoscope is passed, and retained fluids are aspirated. The oesophagus is carefully swabbed clean and penicillin powder blown over its walls in the lower part. Great importance is attached to the toilet of the oesophagus before operation, as the aspiration of retained contents into the trachea during anaesthesia means almost certain death from bronchopneumonia. As the oesophagoscope is removed, a Tampax pack is left in place just below the cricoid. A silk thread from the pack is left hanging out of the mouth. A pharyngeal airway is inserted. When the patient is in position lying on his right side on the table a unilateral spinal anaesthetic of light per-caine is given. Anaesthesia is then continued by a combination of sodium pentothal into the blood drip, and light nitrous oxide and oxygen through a face mask. This combination of anaesthetic agents has been gradually evolved and is now my routine for operations on the oesophagus and stomach. The spinal anaesthetic prevents straining, while the nitrous oxide and oxygen administered through the face-piece maintain lung inflation and blood oxygenation at any desired level. The patient should be lying on his right side leaning neither forwards nor backwards so that access to the abdomen and the posterior mediastinum is equally easy. A little local anaesthetic is infiltrated into the muscles of the chest wall in the region of the 8th and 9th ribs so that the muscles can be cut with the diathermy and bleeding points coagulated without stimulating their contraction. An incision is made over the whole length of the 9th rib, passing forwards and downwards into the abdomen beyond the costal margin, and curving upwards a little behind over the 8th rib. The 9th rib and the posterior end of the 8th are resected. The 9th costal cartilage is removed. The 8th intercostal nerve is divided, and the corresponding intercostal vessels ligatured and divided. The left pleura is opened through the bed of the 9th rib, and the rib margins gently separated. The removal of the 9th rib gives good access to both chest and abdomen, but the removal of the posterior end of the 8th is necessary for the manipulations involved in mediastinal anastomosis. Any adhesions to the lower lobe are divided. The left splanchnic nerves on the posterior chest wall are infiltrated with local anaesthetic, and 10 ml. of local anaesthetic are also injected into the posterior mediastinum below the lung root. The left phrenic nerve is crushed where it passes from the pericardium to the diaphragm. The diaphragm is opened at the anterior end of the incision, and this is carried backwards into the oesophageal hiatus. Bleeding vessels in the diaphragm are stitched. The muscle fibres around the hiatus are double-stitched before division, in order to avoid retraction of blood vessels into the crus, and haematoma formation. One or two catgut sutures are passed through the cut edges of the diaphragm and left long; clips applied to these sutures keep the edges of the diaphragm apart. The incision is then carried forward into the abdominal wall for about two inches from the costal margin. Double chest

retractors are inserted, the anterior ones including the diaphragm in their grip. When the ribs are separated there is good exposure of the lower part of the chest and the upper abdomen. The limits of the growth are then defined. Where the tumour itself is large, the para-aortic glands may be most easily palpated from above, the finger being passed down alongside the aorta from the chest. The omentum, diaphragmatic peritoneum, liver, pelvis, and mediastinum are all carefully examined. If the condition is thought to be operable a radical removal with block dissection of the lymphatic bed is carried out, followed by mediastinal oesophago-gastrostomy. If it is inoperable but removable, the tumour, together with adjacent parts of stomach and oesophagus, are resected and oesophago-gastrostomy performed. The removal of the tumour and establishment of a good channel for the ingestion of food is often worth while even when metastases preclude the possibility of cure. If, however, spread is limited but the mass is not removable on account of local fixation, an oesophago-jejunostomy above the obstruction should be considered.

The transverse colon and great omentum are drawn up and the first loop of jejunum found. Inspection of the mesentery with its vessels is the clue to the

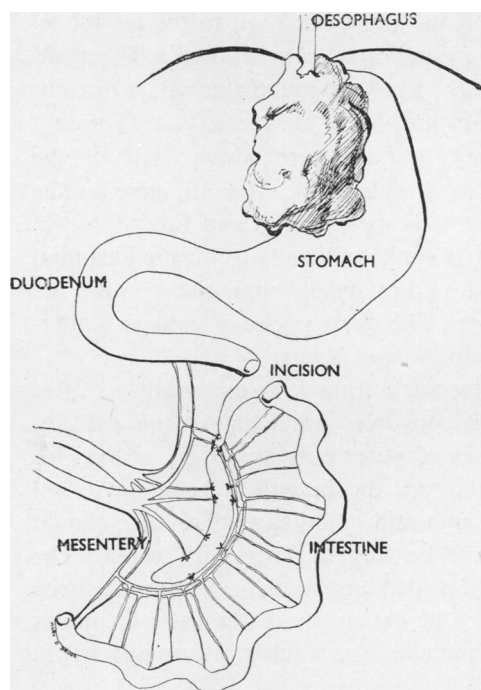


FIG. 1.—Diagram to show method of mobilizing the mesentery of the small intestine to make a loop which will reach up into the mediastinum.

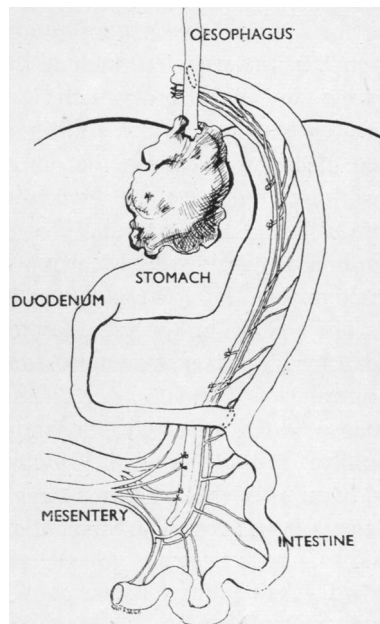


FIG. 2.—The isolated loop of intestine has been brought up through the diaphragm and anastomosed to the oesophagus above the growth. Intestinal continuity has been restored by end to side anastomosis.

point of section of the intestine. This is usually between five and ten inches from the duodeno-jejunal flexure. The intestine is divided between an anastomosis clamp above and a crushing clamp below. An incision is made in the mesentery from the intestine at the point selected downwards and through the first vascular arcade. It is then continued along the first arch, with division and ligature of the radial trunks and their accompanying veins close to the arch, until a loop of intestine is obtained which will pass easily up to the oesophagus above the site of the lesion (Fig. 1). The free end of this loop of intestine is stitched and infolded so that a blind end is formed. The free end of jejunum still left in continuity with the duodenum is implanted into the side of the isolated loop at a point chosen to avoid tension or kinking (Fig. 2). The intestinal loop is drawn up either in front of or behind the transverse colon according to the length or involvement by growth of the transverse meso-colon. It passes through the incision in the diaphragm into the posterior mediastinum to a space made behind the oesophagus. Enough oesophagus is mobilized so that it can be easily rotated to expose the posterior surface. The posterior surface of the oesophagus is then joined to the anterior aspect of the intestinal loop by lateral anastomosis (Fig. 2). The stoma is made along the length of the oesophagus and obliquely across the intestine. The muscular wall of the oesophagus is first sutured to the peritoneal and muscular coats of the intestine with a continuous catgut stitch. The walls are then incised and a continuous catgut stitch passed round the whole circumference of the stoma to include muscle and mucous membrane layers. The first muscle and peritoneal stitch is completed round the remaining half of the anastomosis, and a few additional interrupted sutures inserted to increase the area of contact between the outer surface of the oesophagus and the peritoneal covering of the intestine. Penicillin powder is applied liberally to the mediastinum and pleura. The intestinal loop is fixed to the mediastinal pleura, and the diaphragm lightly stitched around the loop. The chest is closed with an under-water drain. The tube is left in place for forty-eight hours.

The operation is well tolerated, and recovery from it is as speedy as after laparotomy and gastro-enterostomy for irremovable carcinoma of the pylorus. For twenty-four hours after operation drinks of water only are given. After this glucose water, tea, and thin soups are allowed, the quantities being increased rapidly. Milk drinks with beaten-up eggs, thin milk puddings, jellies, etc., should be taken after three or four days but should be washed down with water. The patients have been given penicillin lozenges to suck and special attention has been paid to mouth hygiene. On the seventh day the patient should be fit to sit up out of bed. As healing may be poor in these patients, the stitches are usually left in until the tenth day.

CASE REPORTS

Case 1.—A man, aged forty-five years, had complained of indigestion for years. Early in 1940, whilst he was in the Army in France, he complained of pain in the epigastrium

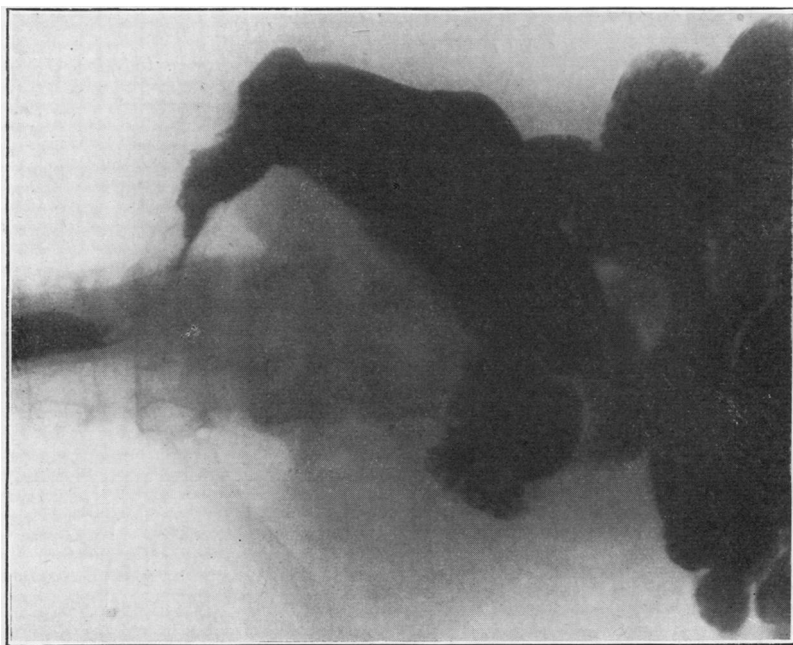


FIG. 3.—Case 1. Radiograph, taken with thin barium mixture, showing extensive filling defect of the fundus and upper part of the body of the stomach with extension along the oesophagus causing stenosis.

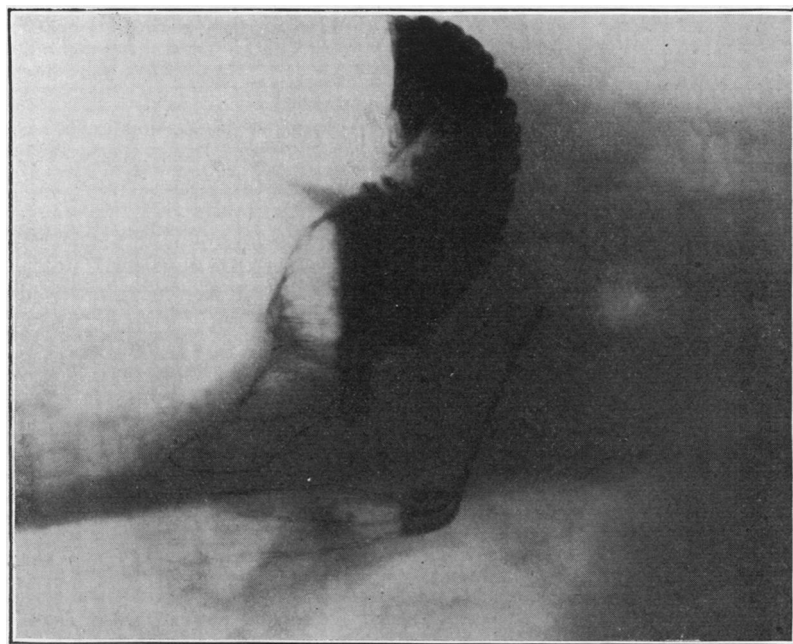


FIG. 4.—Case 1. Barium swallow after oesophago-jejunostomy. The loop of intestine filled with barium lies above the diaphragm. A small quantity of barium passes on through the normal channel into the stomach.

and heaviness in the lower part of the chest which came on before meals and was partly relieved by a bismuth mixture. The swallowing of food was accompanied by a burning sensation in the epigastrium. In August, 1940, he had two attacks of generalized abdominal pain of acute onset and accompanied by diarrhoea, for which his appendix was removed. This wound subsequently broke down. The discomfort persisted until August, 1944, when he found that food seemed to stick behind the lower end of the sternum. Vomiting became incessant and a little blood was brought up occasionally. He had lost two stone in weight. Radiography (Fig. 3) showed marked obstruction at the lower end of the oesophagus and an extensive filling defect in the upper part of the body of the stomach.

At operation on April 23, 1945, the growth was found to have infiltrated extensively outside the stomach. It was firmly fixed to the posterior abdominal wall, and had extended

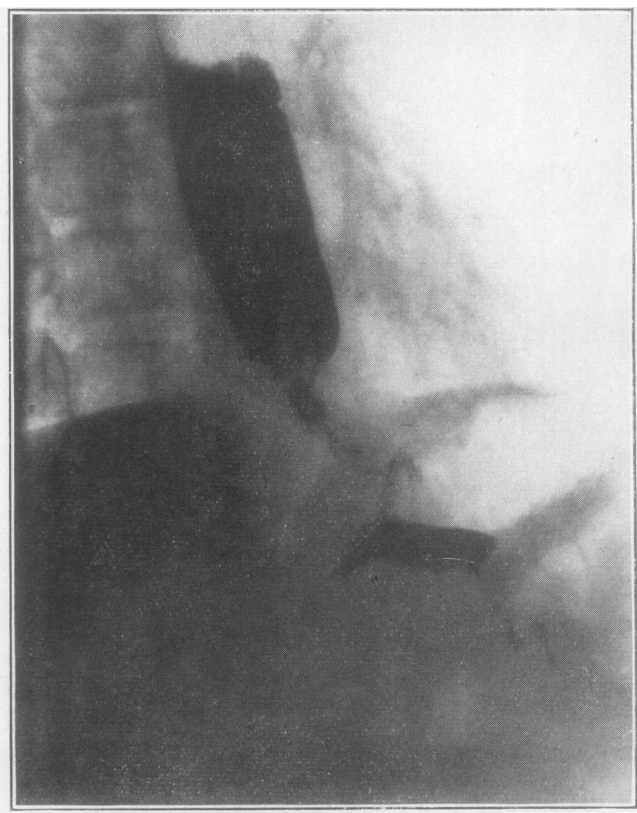


FIG. 5.—Case 2. Extensive carcinoma of the upper part of the stomach involving the abdominal oesophagus and producing stenosis.

into the oesophagus for $\frac{3}{4}$ in. above the diaphragmatic hiatus. Secondary deposits were present in the para-aortic glands, posterior mediastinal glands, and diaphragm. Oesophago-enterostomy was performed according to the method described. The patient recovered without incident. He swallowed satisfactorily for five months, and could eat a chop without discomfort. He had some general weakness and lack of energy, but was otherwise

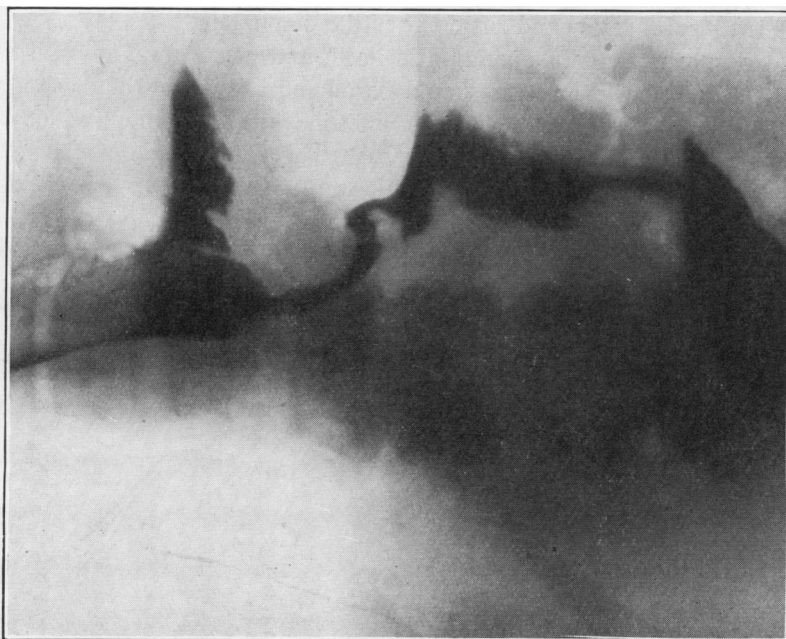


FIG. 6.—Case 2. Radiograph after oesophago-jejunostomy. Some barium passes through the stricture into the stomach. The loop of intestine above the diaphragm is beginning to fill.

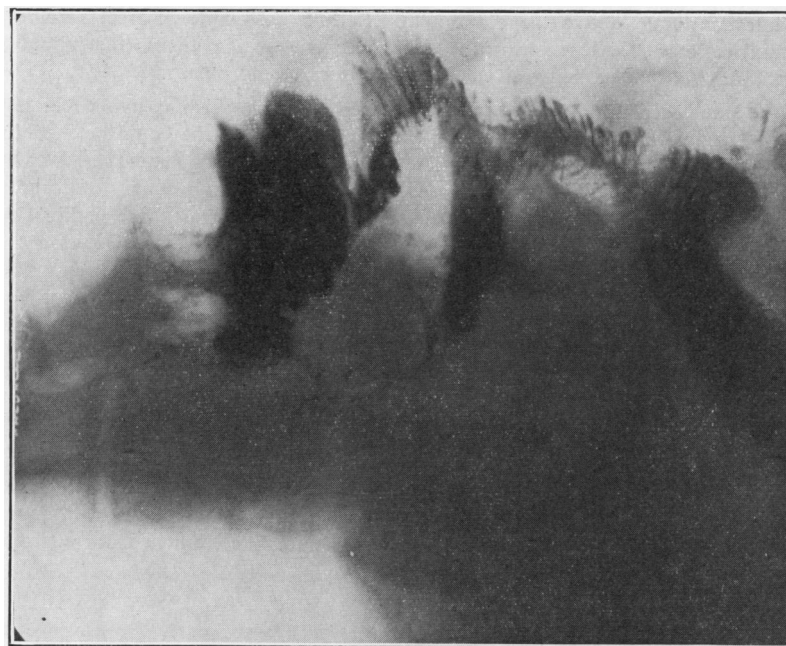


FIG. 7.—Case 2. After further barium the intestinal loop is seen to be well filled.

comfortable. A radiograph (Fig. 4) taken one month after operation showed some dilatation of the intestinal loop above the diaphragm. Barium passed down freely from the oesophagus, only a small trickle entering the stomach. The only available fact about his death at home was that he was being given large quantities of morphia.

Case 2.—A man, aged thirty-nine years, complained of much belching in March, 1945. In the middle of a meal he would have to stop eating and wait until he could belch before continuing with his food. About two weeks later a sandwich stuck behind the lower end of the sternum, and after this dysphagia increased. He had had several attacks of complete obstruction, and had obtained some relief from the passage of a bougie. He had lost two stone in weight. Radiography (Fig. 5) showed an abrupt obstruction at the lower end of the oesophagus and a filling defect in the upper part of the stomach. The diagnosis of carcinoma of the stomach invading the oesophagus was confirmed by oesophagoscopy and biopsy.

Operation was performed on July 17, 1945. A hard mass was found encircling the oesophageal opening into the stomach. There was some local fixation which might have been overcome, but there was also a hard mass of malignant glands fixed to the aorta at the level of the coeliac axis. Oesophago-enterostomy was performed. Recovery was satisfactory, and he returned home eighteen days after operation. Swallowing was normal, and radiographs (Figs. 6 and 7) showed that the intestinal loop was functioning satisfactorily. Rather more barium entered the stomach than in the previous case. The patient died six months after operation from a sudden gastric haemorrhage, but had no recurrence of his dysphagia.

SUMMARY

1. The approach to carcinoma of the stomach obstructing the oesophagus is through the left pleural cavity and left dome of the diaphragm.
2. The exposure is a major operation in itself, and where the growth is not removable some relief of symptoms should be offered as a result of the undertaking. In such circumstances a loop of intestine may be mobilized on an elongated mesentery and anastomosed to the oesophagus above the growth.
3. Records of two patients for whom this was done are given. The relief from obstruction justified the magnitude of the operation.