INDICATIONS

Peptic ulcer disease refractory to medical management
See Chapter 24

PREOPERATIVE PREPARATION

Esophagogastroduodenoscopy to confirm the diagnosis

PITFALLS AND DANGER POINTS

Hematoma of gastrohepatic ligament
Incomplete vagotomy
Damage to innervation of pyloric antrum
Injury to spleen
Necrosis or perforation of lesser curvature of stomach

OPERATIVE STRATEGY

Exposure

The visibility of the area around the lower esophagus is greatly enhanced if the Thompson or the Upper Hand retractor is attached so the blade underlying the lower border of the sternum elevates the sternum and draws it in a cephalad direction.

Prevention of Hematoma and Injury to Gastric Lesser Curve

Hematomas in the region of the gastrohepatic ligament along the lesser curve of the stomach increase the difficulty of identifying the terminal branches of the nerve of Latarjet. Furthermore, rough dissection and hematomas in this area may damage the deserosalized muscle along the lesser curve to such an extent that necrosis may occur. This rare complication is preventable if dissection is performed gently. Resuturing the peritoneum produces inversion of the deserosalized portion of the lesser curve and helps prevent perforation.

Preserving Innervation of the Antrum

The anterior and posterior nerves of Latarjet terminate in a configuration resembling the foot of a crow. This crow’s-foot portion maintains innervation of the antrum and pylorus and ensures adequate emptying of the stomach.

Adequacy of Proximal Vagotomy

Hallenbeck et al. demonstrated that the incidence of recurrent postoperative ulcer dropped markedly when they extended the dissection so the lower esophagus was completely freed of any vagal innervation. This required meticulous removal of all nerve branches reaching the lower 5-7 cm of the esophagus and the proximal stomach. Grassi noted that one reason the proximal vagotomy technique fails is that surgeons sometimes overlook a branch leading from the posterior vagus nerve to the posterior wall of the upper stomach. He named it the “criminal nerve.” If all the vagal nerve branches that enter the distal esophagus or proximal stomach are divided, interruption of the criminal nerve is included in the dissection.

Postoperative Gastroesophageal Reflux

Extensive dissection in the region of the esophagogastric junction may produce or exacerbate gastroesophageal reflux. Patients with preoperative gastroesophageal reflux should undergo an antireflux
procedure at completion of the proximal gastric vagotomy. A posterior gastropexy (see Chapter 17) or a Nissen fundoplication (see Chapter 15) may be done. The choice of procedure depends on the experience of the surgeon and the operative findings.

**OPERATIVE TECHNIQUE**

**Incision and Exposure**

With the patient supine, elevate the head of the operating table 10°-15°. Make a midline incision from the xiphoid to a point 5 cm below the umbilicus. Insert an Upper Hand or Thompson retractor to elevate the lower sternum about 8-10 cm. Insert a self-retaining retractor of the Balfour type without excessive tension to separate the margins of the incision. Depending on the patient’s body habitus, use a Weinberg or a Harrington retractor to elevate the left lobe of the liver above the esophageal hiatus. On rare occasions this exposure is not adequate, and the triangular ligament of the left lobe of the liver may have to be divided, with the left lobe retracted to the patient’s right.

**Identification of Right and Left Vagal Trunks**

Expose the peritoneum overlying the abdominal esophagus and transect it transversely using long Metzenbaum scissors and DeBakey forceps. Extend the peritoneal incision to uncover the muscular fibers of the crura surrounding the esophageal hiatus (see Figs. 25-1 to 25-3). Separate the anterior two-thirds of the circumference of the esophagus from the adjacent right and left crux of the diaphragm using scissors and peanut-sponge dissection under direct vision (see Fig. 25-4). Then encircle the esophagus with the right index finger.

The right (posterior) vagus nerve is frequently 2 cm or more away from the esophagus. To avoid leaving the posterior vagus behind, pass the finger into the hiatus at the groove between the left branch of the crux and the left margin of the esophagus. Pass the fingernail along the anterior wall of the aorta and curve it anteriorly along the posterior aspect of the right side of the diaphragmatic crux, entering the operative field adjacent to the right crux. As a result of this maneuver, the index finger almost invariably contains both vagal trunks in addition to the esophagus. The right vagus generally is considerably larger than the left and is almost always a single trunk. The left (anterior) vagus can be identified generally at the right anterior surface of the lower esophagus. Separate each vagal trunk gently from the esophageal wall, pulling the vagal trunk toward the right and the esophagus to the left. Encircle each vagal trunk with a Silastic loop, brought out to the right of the esophagus.

**Identification of Crow’s Foot**

Pass the left index and middle fingers through an avascular area of the gastrohepatic omentum and enter the lesser sac. This enables the nerves and blood vessels along the lesser curvature of the stomach to be elevated and put on stretch. The anterior nerve of Latarjet, which is the termination of the left vagus trunk as it innervates the anterior gastric wall, can be seen through the transparent peritoneum adjacent to the lesser curvature of the stomach. It intermingles with terminal branches of the left gastric artery, which also go to the lesser curvature. As the nerve of Latarjet reaches its termination, it divides into four or five branches in a configuration that resembles a crow’s foot. These terminal branches innervate the distal 6-7 cm of the antrum and pylorus and should be preserved (Figs. 26-1, 26-2a).