21 Esophagomyotomy for Achalasia and Diffuse Esophageal Spasm

INDICATIONS

Achalasia
Extended myotomy sometimes performed for diffuse esophageal spasm

PREOPERATIVE PREPARATION

Obtain a barium swallow esophagram.
Perform esophagoscopy with biopsy and brushings of the narrowed portion of distal esophagus if any mucosal abnormalities are noted.
Perform esophageal manometry.
For advanced cases, lavage the dilated esophagus with a Levine tube and warm saline for 1-2 days prior to operation to evacuate retained food particles. Combine this with a liquid diet.
Pass a nasogastric tube into the esophagus the morning of operation.
Administer perioperative antibiotics.

PITFALLS AND DANGER POINTS

Extending the myotomy too far on the stomach
Perforating the esophageal mucosa
Performing an inadequate circumferential liberation of the mucosa
Creating a hiatus hernia

OPERATIVE STRATEGY

Length of Myotomy for Achalasia

Ellis et al. (1980) attributed their low incidence of postoperative gastroesophageal regurgitation (3%) to the fact that the myotomy terminates only a few millimeters beyond the esophagogastric junction. At the esophagogastric junction, several veins run in a transverse direction just superficial to the esophageal mucosa. One does not encounter any other transverse vein of this size during myotomy of the more proximal esophagus. Once these veins are encountered, terminate the myotomy. In no case should more than 1 cm of gastric musculature be divided. Continue the myotomy in a cephalad direction for 1-2 cm beyond the point at which the esophagus begins to dilate. For early cases, where no significant esophageal dilatation is evident, the length of the myotomy should be 5-8 cm.

Choice of Operative Approach

Laparoscopic myotomy is an excellent alternative for patients with achalasia in whom the narrow segment is limited to the distal esophagus (see Chapter 22). Open esophagomyotomy may be performed through a thoracotomy incision (as shown here) or transabdominally. The thoracic approach allows excellent exposure without disrupting the phrenoesophageal ligaments, potentially contributing to postoperative gastroesophageal reflux. It facilitates a long myotomy in cases of diffuse esophageal spasm.

Mucosal Perforation

Mucosal perforation is easily repaired if recognized. It is advisable for the surgeon to test the integrity of the mucosal layer following myotomy by having the anesthesiologist insert 100-200 ml of a methylene blue solution through the nasogastric tube. When a mucosal perforation is identified during the operation, careful suturing of the mucosa generally avoids further difficulty. Some surgeons close the muscle over the perforation and then rotate the esophagus so the myotomy can be performed at a different point on the esophageal circumference. Closing the mediastinal pleura over the esophagus, as we do routinely, helps buttress a sutured perforation of the mucosa (see Figs. 23-1 to 23-3).
OPERATIVE TECHNIQUE

Incision and Exposure

Place the patient in the full left thoracotomy position. Make a skin incision along the course of the seventh intercostal space. Incise the serratus and latissimus muscles with electrocautery; then make an incision along the upper border of the eighth rib through the intercostal musculature (see Figs. 18–1 to 18–3). Open the pleura for the length of the eighth rib. Insert a Finochietto retractor and gradually increase the space between the seventh and eighth ribs. Divide the inferior pulmonary ligament and retract the left lung in a cephalad and anterior direction using large moist gauze pads and Harrington retractors. Make an incision in the mediastinal pleura overlying the distal esophagus (Fig. 21–1). Then gently encircle the esophagus with the index finger, which is facilitated by the indwelling nasogastric tube. Encircle the esophagus with a latex drain. Be careful to identify and preserve the vagus nerves. Free the esophagus from surrounding structures to the level of the diaphragm but no lower (Fig. 21–2).

Esophagomyotomy for Achalasia

Place the left index finger underneath the distal esophagus. Make a longitudinal incision through both the longitudinal and circular muscle layers of the esophagus until the mucosal surface is exposed (Fig. 21–3). Continue this incision in a cephalad direction for a distance of about 2 cm above the point where the esophagus begins to dilate, or at least 5–7 cm.

Continue the myotomy in a caudal direction as far