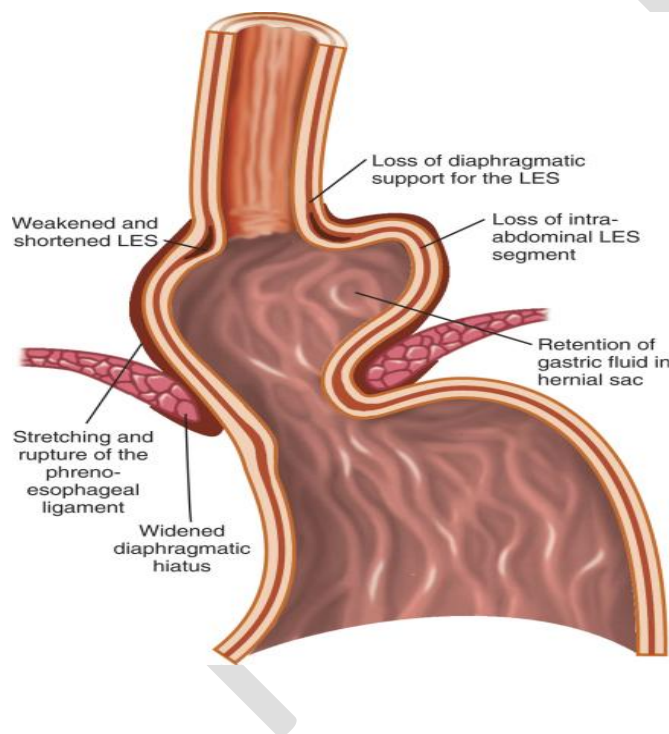


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Schematic diagram showing the impact of a hiatal hernia on the antireflux barrier. LES, lower esophageal sphincter., Feldman: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th ed.



Reflux is worse in patients having a “nonreducible” as opposed to a “reducible” **hiatal hernia**. Nonreducing hernias are those where the gastric rugal folds remain above the diaphragm between swallows

Mattioli S, D'Ovidio F, Pilotti V, et al: Hiatus hernia and intrathoracic migration of the esophagogastric junction in gastroesophageal reflux disease. Dig Dis Sci 2003; 48:1823.

Type I hiatal hernia :

sliding hernia that occurs with migration of the GEJ into the posterior mediastinum through the hiatus because of laxity of the phrenoesophageal ligament. accounts for more than 95% of hiatal hernias.

Type II is a true paraesophageal hernia (PEH),

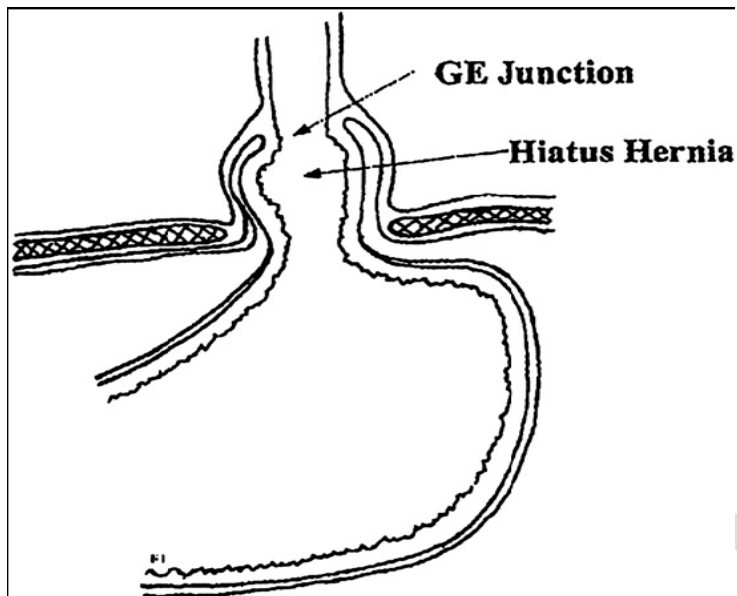
when the fundus herniates through the hiatus alongside a normally positioned GEJ by a defect in the phrenoesophageal membrane.

the least common type of hiatal hernia

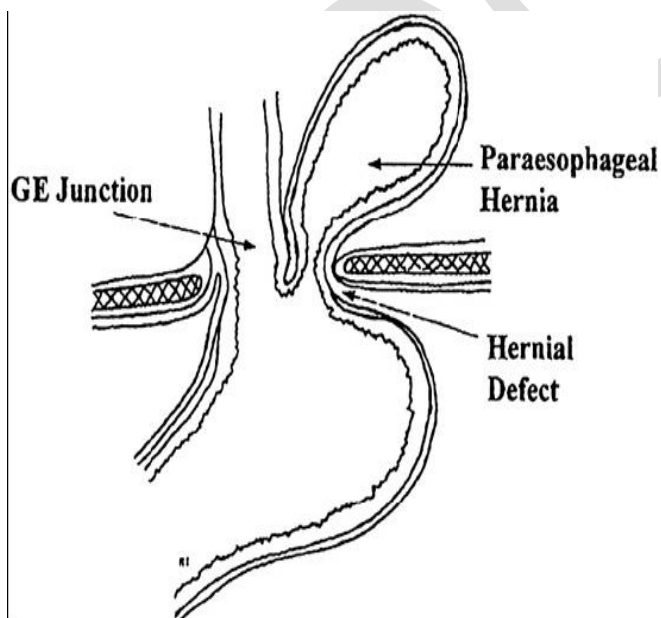
Type III is a combination of types I and II hernias with cranially displaced GEJ and stomach through the hiatus

Type IV is a hernia characterized by displacement of the stomach with other organs, such as the colon, spleen, and small bowel into the chest.

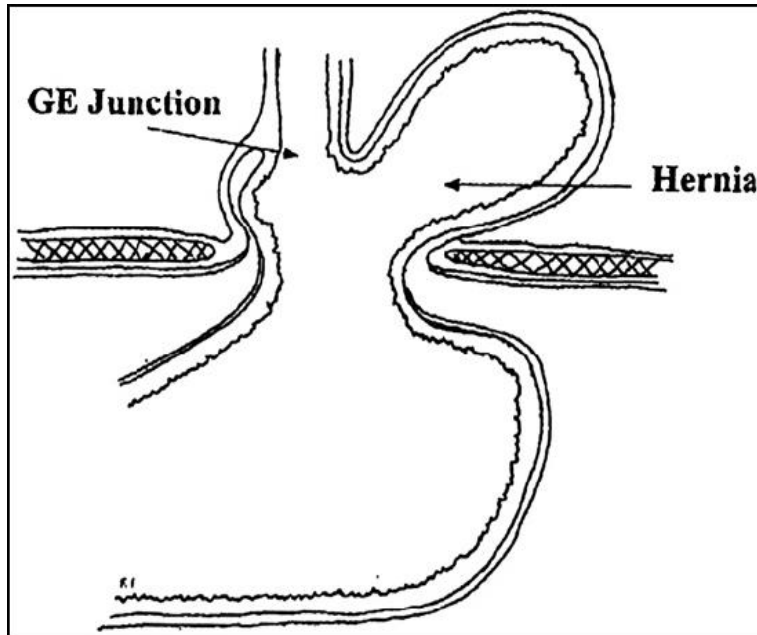
Thorac Surg Clin 19 (2009) 473–484



Type I sliding hernia. (From Ilves R. Hiatus hernia: the condition. Chest Surg Clin N Am 1998;8:404;



Type II paraesophageal hernia. The GEJ remains below the diaphragm. (From Ilves R. Hiatus hernia:the condition. Chest Surg Clin N Am 1998;8:40



Type III paraesophageal hernia. Larger hernia with GEJ above the diaphragm. (From Ilves R. Hiatus hernia: the condition. Chest Surg Clin N Am 1998;8:404;

EPIDEMIOLOGY & DEMOGRAPHICS:

- Paraesophageal **hiatal hernias** are more common in women than in men (4:1).
- Associated with diverticulosis (25%), esophagitis (25%), duodenal ulcers (20%), and gallstones (18%).
- More than 90% of patients with endoscopic documentation of esophagitis have **hiatal hernias**.

DIFFERENTIAL DIAGNOSIS

- Peptic ulcer disease
- Unstable angina
- Esophagitis (caused by Candida, herpes, NSAIDs, etc.)
- Esophageal spasm
- Barrett's esophagus
- Schatzki's ring
- Achalasia
- Zenker's diverticulum
- Esophageal cancer

Clinical Manifestations and Diagnosis:

small simple *sliding hiatal hernias* are asymptomatic. contribution to gastro-esophageal reflux with large sliding hiatal hernias may complain of dysphagia or discomfort in the chest or upper abdomen.

Cameron ulcers or *linear erosions* may develop in patients with sliding hiatal hernias, particularly large hernias, mucosal lesions are usually found on the lesser curve of the stomach at the level of the diaphragmatic hiatus.

Patients with *paraesophageal* or *mixed hiatal hernias* are rarely completely asymptomatic; symptoms include dysphagia, chest pain, vague postprandial discomfort, and shortness of breath.

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LABORATORY TESTS:

Esophageal manometry, although not commonly done, can be used in establishing a diagnosis (low sensitivity, but high specificity when compared with endoscopy).

Ferri: Ferri's Clinical Advisor 2010, 1st ed

IMAGING STUDIES

- Barium contrast upper gastrointestinal (UGI) series best defines the anatomic abnormality: Demonstration that the **gastric cardia is herniated 2 cm above the hiatus is diagnostic**. UGI may also reveal a tortuous esophagus. If endoscopy is performed preoperatively, a barium swallow is generally not necessary.
- UGI endoscopy: documents the presence of a **hiatal hernia** and also excludes common associated findings of esophagitis and Barrett's esophagus (recommended at least once during the workup). **Greater than 2 cm of gastric rugal fold seen above the margins of the diaphragmatic crura is diagnostic**.
- Abdominal ultrasonography: simple, well tolerated; a transdiaphragmatic **esophageal diameter of more than or equal to 18 mm** is highly suggestive of the presence of a sliding **hiatal hernia**

Ferri: Ferri's Clinical Advisor 2010, 1st ed

Treatment and Prognosis:

NONPHARMACOLOGIC THERAPY

- Lifestyle modifications: avoidance of foods and drugs that decrease lower-esophageal pressure (e.g., caffeine, chocolate, mint, calcium channel blockers, and anticholinergics)
- Weight loss
- Avoid large quantities of food with meals
- Sleep with the head of the bed elevated 6 inches

Simple sliding hiatal hernias do not require treatment. Patients with symptomatic *giant sliding hiatal hernias, paraesophageal, or mixed hernias* should be offered surgery. When closely questioned, most patients with type 2 or 3 hernias will have symptoms.

The principles of surgery for hiatal or paraesophageal hernias include three main elements: (1) reduction of the hernia from the mediastinum or chest with excision of the hernia sac; (2) reconstruction of the diaphragmatic hiatus with simple closure or use of prosthetic mesh; and (3) fixation of the stomach in the abdomen with a wrap, gastropexy or gastrostomy tube. extra length of neo-esophagus can be constructed from the proximal stomach (**Colles-Nissen procedure**).

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Compared to open repair, laparoscopic repair is associated with less blood loss, fewer overall complications, and shorter hospital stay, while return to normal activities is faster. Long-term results are probably equal with either approach.

Ref:

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