PARAESOPHAGEAL HERNIA - 2

I. Classification

- Type I (HH-I): not considered a true paraesophageal hernia
  - upward migration of the GE junction into mediastinum
  - hernia sac consists of visceral peritoneum. phrenoesophageal membrane, anterior wall of gastric cardia
- Type II (HH-2): aka rolling hernia;
  - upward dislocation of fungus of stomach alongside a normally positioned intraabdominal GE junction
- Type III (HH-3): upward displacement of both GE junction and gastric fungus
  - more common than HH-2.
- Type IV (HH-4): contains viscera other than stomach.

II. Pathophysiology

Two theories:

1) The pleuroperitoneal membrane between the esophagus and phrcnoesophageal ligament (PEL) begins to stretch, allowing tissue beneath the diaphragm to bulge into chest, which becomes the lead point for herniation of the stomach.
2) Muscle or central tendon of diaphragm or connective tissue in phrenoesophageal ligament weakens, resulting in stretching of the esophageal hiatus.

III. Incidence

- Women > Men
- HH- 1 more common during early and middle adult years
- HH-2 and HH-3 more common during older adult years
- Giant paraesophageal hernia repairs account for 2-5% of all hernias
- HH- 1 ~ 90% of all hiatus hernias

IV. Symptoms

- Typical symptoms of HH- 1- gastroesophageal reflux vs. paraesophageal hernias- not always symptomatic.
- Symptoms result from diaphragmatic impingement on the stomach, gastric volvulus, or compression of esophagus by intrathoracic stomach.

- Symptoms of Paraesophageal Hiatus Hernia

Symptom	Prevalence (%)
Postprandial fullness/pain	63
Vomiting/regurgitation	36
Dysphagia	34
Heartburn	31
Anemia/bleeding	24
Pulmonary Dysfunction	11

- All patients with paraesophageal hiatus hernia are at risk for obstruction or strangulation of the hernia. Even mild dilation of the stomach can reduce blood supply, leading to ischemia, ulceration, perforation and sepsis.
- Triad of epigastric pain, inability to vomit, and inability to pass NG tube can be indicative of early stage of gangrene.

V. Diagnosis
- CXR
  - air-fluid level behind cardiac shadow
- Upper Gl study with Barium
  - most useful study
- Endoscopy
  - additionally evaluates esophagitis and gastritis
  - not 100% sensitive in making diagnosis alone
  - should be used in combination with radiographic study.

VI. Treatment
- Operative correction is best management.
- Effective surgical management must include:
  - excision of hernia sac
  - reduction of incarcerated organs
  - repair of diaphragmatic defect.
- Optional additional measures include:
  - fundoplication
  - insertion of prosthetic mesh
  - diaphragmatic relaxing incisions
  - gastropexy.
- Initial surgical approach is laparoscopic
  - transabdominal gastroscopic approach shown to be effective in more than 90% of cases.
- Transthoracic vs. Transabdominal approach
  - Advantage of transthoracic: facilitates complete esophageal mobilization and removal of hernia sac.
  - Advantage of transabdominal: more precise reduction of esophageal hiatus and more accurate reconstruction of esophageal hiatus.
- Points of controversy
  - the incidence of "short" esophagus
  - the need for routine antireflux operation
  - the need for esophageal lengthening procedures.

VII. Role of Fundoplication
- Partial Fundoplication
  - viewed by some surgeons as having role in fixing stomach beneath diaphragm
- Tota1 fundoplication
  - some surgeons believe that incidence of latent GER is high and that failure to perform fundoplication places patient at risk for GER.