

Hiatal Hernias and Barrett's esophagus

Dr Sajida Ahad

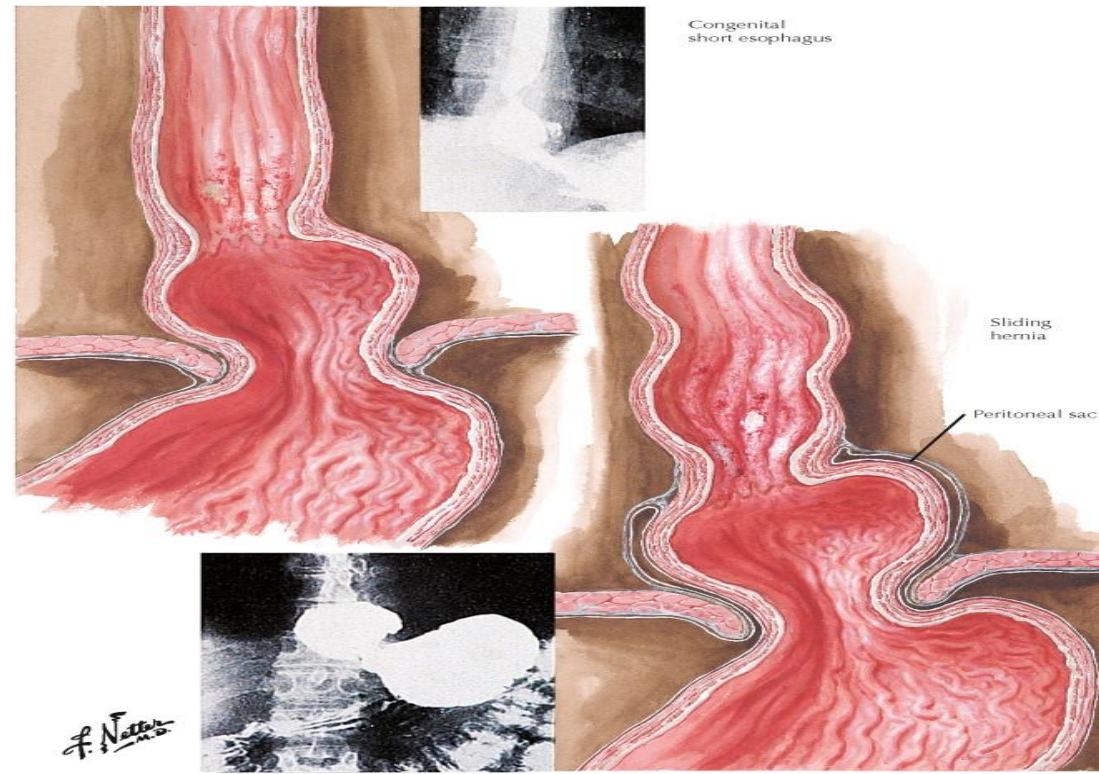
Mercy General Surgery

Objectives

- Identify the use of different diagnostic modalities for hiatal hernias
- List the different types of hiatal hernias and its significance for treatment and surgery
- Know the outcomes of hiatal hernia repairs and causes of morbidity and mortality associated with hiatal hernias
- Know the guidelines for identification , surveillance and management of Barrett's esophagus

What is a hiatal hernia?

- Hiatal hernia refers to displacement of abdominal organs, most commonly the stomach, through the esophageal hiatus of the diaphragm into the mediastinum



Types of hiatal hernias

- **Type I**
 - sliding hiatal hernias
 - gastroesophageal junction above the diaphragm
 - fundus remains below the gastroesophageal junction
- **Type II**
 - hernias are pure paraesophageal hernias (PEH)
 - the gastroesophageal junction remains in its normal anatomic position but a portion of the fundus herniates through the diaphragmatic hiatus adjacent to the esophagus
- **Type III**
 - hernias are a combination of Types I and II
 - both the gastroesophageal junction and the fundus herniating through the hiatus. The fundus lies above the gastroesophageal junction.
- **Type IV**
 - structure other than stomach, such as the omentum, colon or small bowel within the hernia sac

Fun facts

- Greater than 95% of hiatal hernias are Type I (Sliding hiatal hernias)
- Types II – IV hernias also called paraesophageal hernias (PEH)
- Of the paraesophageal hernias, more than 90% are Type III, and the least common is Type II
- Giant PEH: greater than $\frac{1}{2}$ stomach in chest

Why Is It Important to Diagnose a Hiatal Hernia?

- sliding hiatal hernias are generally of no consequence and are common, particularly in older patients
- Large PEH can risk gastric viability
- hiatal hernias do not heal themselves even with significant and necessary changes in lifestyle, such as weight loss
- hiatal hernia will only get bigger with time, and its symptoms and associated risks will only become more profound

Risk of gastric volvulus

- rare condition
- classified according to the axis of rotation; organoaxial and mesenteroaxial
- it is more often diagnosed in elderly patients
- **Acute volvulus is a surgical emergency**
- Risk of strangulation =5% to 28%
- Symptoms :progressive chest pain, severe vomiting, and epigastric distention
 - Borchartt's triad: severe epigastric pain, unproductive retching(inability to vomit), and inability to pass a nasogastric tube

What Symptoms Are Associated With a Hiatal Hernia?

- Hiatal hernias may be asymptomatic
- PEH < less than 2 cm generally asymptomatic
- A hiatal hernia is not synonymous with gastroesophageal reflux
- Obstructive symptoms: dysphagia and regurgitation, aspiration pneumonia, recurring sinus infections , persistent cough, asthma, and changes in voice quality
- Space related symptoms: dyspnea, GERD, early satiety
- [Cameron lesions](#): compromise of blood flow to or from the fundus could lead to chronic blood loss and anemia
- Symptoms of gastroesophageal reflux are not common; the esophageal compression associated with the paraesophageal hernia may limit concomitant gastroesophageal reflux and its associated symptoms

workup

- The first step in the diagnosis and evaluation of a paraesophageal hernia is to recognize its presence
- upper GI
 - very helpful in establishing the diagnosis and extent of a paraesophageal hernia
 - Non invasive
- Esophageal manometry
 - Done prior to surgery
 - Not for diagnosis but fundoplication decisions
- EGD
 - To rule out other causes, assess anatomy, extent of hernia, Cameron lesions etc.

When to refer for surgery?

- All symptomatic paraesophageal hiatal hernias should be repaired operatively, particularly those that cause obstructive symptoms
- PEH with significant gastric distortion (e.g. an associated gastric volvulus)
- Operative intervention for a completely asymptomatic paraesophageal hernia must be balanced against patient age, comorbidities, BMI, operative history, size and nature of the paraesophageal hernia, complicating factors (e.g., concomitant gastroesophageal reflux disease)

Non operative approach

- asymptomatic patient may require possible future intervention
- Focus on improvement of existing comorbidities, such as diabetes and obesity, that affect patient outcomes

- Symptoms that are subjectively most improved after repair of a paraesophageal hernia are, in order,
 - heartburn
 - regurgitation
 - dysphagia
 - early satiety
 - chest pain
 - dyspnea

What does surgery entail?

- Laparoscopy abdominal approach
 - Reduce the paraesophageal hernia (and sliding hiatal hernia, if present) to allow 6 to 8 cm of esophagus to lay in the high pressure abdominal cavity
 - Dissect the hernia sac away from the hernia and excise of it what can be excised
 - Reconstruct the esophageal hiatus snugly but not tightly about the esophagus
 - Construct an antireflux fundoplication
- Recovery
 - 1-2 nights in the hospital
 - Full liquid diet , slowly advanced to regular diet over 3 to 4 weeks

Outcomes

- Failures are symptomatic or radiographic recurrences
- More than 90% of patients have durable, long-term symptom relief after laparoscopic paraesophageal hernia repair
- 40% of these same patients will have some degree of radiographic recurrence
- long-term dietary habits and weight control are paramount to durable outcomes

Conclusions

- Hiatal hernia can be diagnosed by various modalities. Only investigations which will alter the clinical management of the patient should be performed
- Repair of a type I hernia in the absence of reflux disease is not necessary
- All symptomatic paraesophageal hiatal hernias should be repaired, particularly those with acute obstructive symptoms or which have undergone volvulus
- Routine elective repair of completely asymptomatic paraesophageal hernias may not always be indicated

Barrett esophagus(BE)

- acquired condition
- normal stratified squamous epithelium of the esophagus is replaced with metaplastic, intestinal-type columnar epithelium containing goblet cells
- BE in 1% to 2% of all adults in North America

- Patients with BE have a thirtyfold increased risk of developing adenocarcinoma of the esophagus
- The risk of progression to esophageal adenocarcinoma arises in a stepwise fashion
 - nondysplastic Barrett's cancer progression of 0.2% to 0.5
 - low-grade dysplasia of 0.7%,
 - high-grade dysplasia of 7% per year
- esophageal adenocarcinoma becoming one of the fastest rising solid cancers in the Western world
- the overall 5-year survival remains only 17%

Surveillance of BE

- Women: lower risk of esophageal cancer in women with chronic reflux disease, screening for BE currently is not recommended
- Men:
 - chronic (>5 years) and/or frequent (weekly or more) symptoms of heartburn or acid regurgitation
 - at least 2 risk factors for BE or EAC
 - age over 50 years
 - Caucasian race
 - central obesity (waist circumference above 102 cm or waist–hip ratio above 0.9)
 - current or past history of smoking
 - a history of BE or EAC in a first-degree relative.

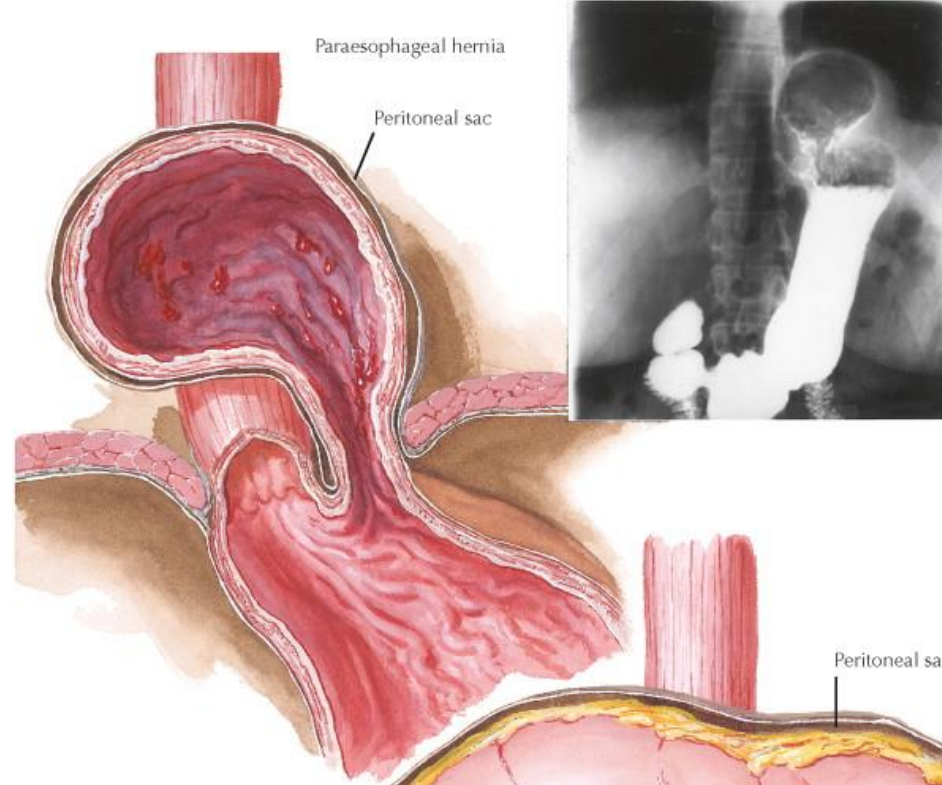
- EGD normal: no further surveillance
- EGD with esophagitis: treat with PPI and repeat endoscopy in 3 months
 - BE prevalence of 9% to 12% on repeat endoscopy after treatment of esophagitis with PPI

- BE diagnosed: the screening algorithm is determined by the presence and grade of dysplasia
- BE without dysplasia :surveillance endoscopy at 3-year to 5-year
- BE with low-grade dysplasia (LGD) annual surveillance is recommended until two consecutive examinations are negative for dysplasia, after which the patient can return to surveillance at 3- to 5-year intervals
- BE with high grade dysplasia(HGD)

BE with high grade dysplasia(HGD)

- should be confirmed by a second pathologist because of the substantial interobserver variation
- endoscopic therapy or esophagectomy is warranted because these patients are at high risk for development of esophageal adenocarcinoma
- The presence of features such as ulceration, an endoscopically visible lesion, or multifocal HGD confers a higher risk of development of EAC and have been found to have an estimated risk of concurrent EAC of 60% to 78%

Questions?

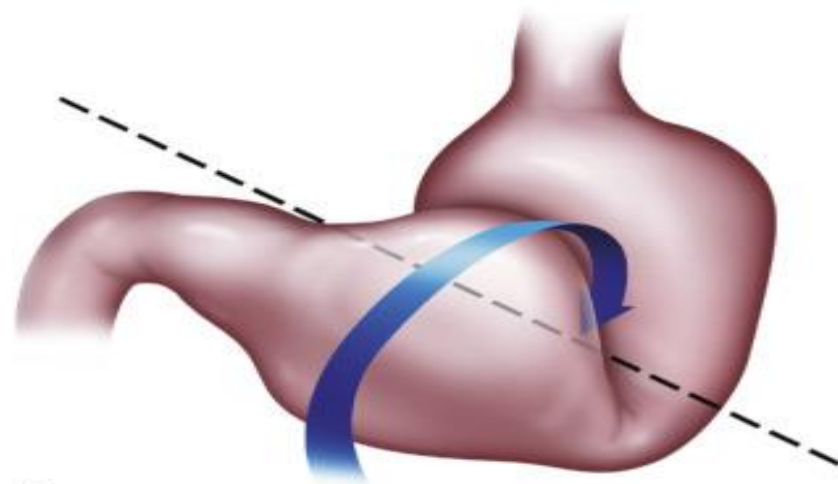


A

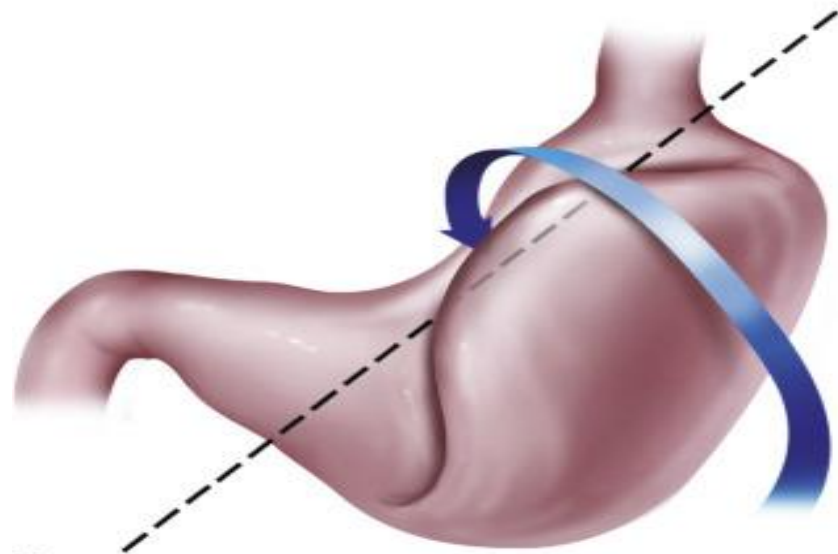
"Upside-down" stomach
(advanced paraesophageal hernia)



B



A



B

