The Esophageal Tour

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Pill Esophagitis

- The typical patient with medication-induced esophagitis does not have a history of prior esophageal disease.
- Patients present with sudden onset of odynophagia and retrosternal pain; the pain may be so severe that swallowing saliva is difficult.
- Patients often relate the onset of symptoms to the swallowing of a pill without water, commonly at bedtime.
- Typical scenarios include the teenage patient with acne who takes Doxycycline at bedtime without water, and the elderly patient in a nursing care facility given a number of medications with a small amount of water while recumbent prior to sleep.
Impending pill esophagitis

House, MD
Pill Esophagitis
Pill Esophagitis
Pill Esophagitis

Bleeding

Deep ulceration
Therapy

- Prevention is the key.
- Symptomatic therapy for odynophagia with antacids and viscous lidocaine.
Foreign Body Impaction

- Fish and chicken bones
- Medication packaging
- Dentures
- Coins
- Meat
When foreign bodies become impacted, they often do so at sites of physiologic or pathologic luminal narrowing. The esophagus has three areas of physiologic narrowing:

- The upper esophageal sphincter
- The level of the aortic arch
- The diaphragmatic hiatus.
Timing of Endoscopy

- **Emergent endoscopy** - Now.
- Esophageal obstruction (evidenced by an inability to handle oral secretions)
- Disk batteries in the esophagus
- Sharp-pointed objects in the esophagus
- **Urgent endoscopy** — Urgent endoscopy (within 24 hours)
- Esophageal foreign objects that are not sharp-pointed, this includes coins.
- Esophageal food impaction without complete obstruction
- Sharp-pointed objected in the stomach or duodenum
- Objects >6 cm in length at or above the proximal duodenum
- Magnets within endoscopic reach
Denture in the esophagus
Food bolus proximal to a peptic Stricture
Barrett's esophagus

- Barrett's esophagus is the condition in which any extent of metaplastic columnar epithelium that predisposes to cancer development replaces the stratified squamous epithelium that normally lines the distal esophagus.
- The condition develops as a consequence of chronic gastroesophageal reflux disease (GERD),
- This change predisposes to the development of adenocarcinoma of the esophagus.
Barrett’s Esophagus
Barrett’s Esophagus

- Screening for Barrett's esophagus is suggested in patients with multiple risk factors associated with esophageal adenocarcinoma (age 50 years or older, male sex, white race, chronic GERD, hiatal hernia, elevated body mass index, or intra-abdominal distribution of body fat).

- For patients with Barrett's esophagus, GERD therapy with medication effective to treat GERD symptoms and to heal reflux esophagitis is clearly indicated, as it is for patients without Barrett's esophagus.
Barrett’s Rules

- **Use the best endoscope available** — High-resolution endoscopy is the preferred method for the endoscopic evaluation of BE
- **Have a vigilant eye** — Look Carefully
- **Clean the field** After intubation of the esophagus, the esophagus should be carefully cleaned to remove any mucus or saliva. Simple water flushes usually are sufficient but spraying acetylcysteine (1 percent) can be helpful if there is excessive or viscous mucus
- **Biopsy generously**—The Seattle biopsy protocol is recommended. Targeted biopsies are obtained from all visible abnormalities and random four-quadrant biopsies are taken every 1 cm starting from the top of the gastric folds up to the most proximal extent of the BE (squamocolumnar junction).
Barrett’s Esophagus with Dysplasia

- The diagnosis of dysplasia in Barrett's esophagus should be confirmed by at least one additional pathologist, preferably one who is an expert in esophageal histopathology.

- Endoscopic surveillance is suggested for patients with Barrett's esophagus using the following surveillance intervals:
  - No dysplasia: 3 to 5 years
  - Low-grade dysplasia: 6 to 12 months
  - High-grade dysplasia in the absence of eradication therapy: 3 months
Barrett’s with Dysplasia

- Radiofrequency ablation is a promising endoscopic treatment modality for BE. Primary circumferential ablation is performed using a balloon-based bipolar electrode, while secondary treatment of residual BE is performed using an endoscope-mounted bipolar electrode on an articulated platform.

- This is highly effective in removing Barrett's mucosa and associated dysplasia, while minimizing the known drawbacks of photodynamic therapy and argon plasma coagulation such as esophageal stenosis and subsquamous foci of BE.
HALO mounted bipolar electrode on an articulated
Endoscopic mucosal resection
Therapy

- Medical: PPI
- Surgical: Fundoplication
- Endoscopic: Endocinch, Lynx
Endocinch Therapy
Eosinophilic Esophagitis (EoE)

- Dysphagia.
- Food impaction.
- Chest pain that is often centrally located and does not respond to antacids.
- Gastroesophageal reflux disease-like symptoms/refractory heartburn.
- Upper abdominal pain.
Eosinophilic Esophagitis
EoE Biopsy

- 15 eosinophils per high power (400x) field (HPF) is generally required for the diagnosis.
- Biopsies should be obtained after one to two months of treatment with a proton pump inhibitor or a negative pH study.
- Biopsy both proximal and distal esophagus.
EoE Therapy

- Acid suppression.
- Fluticasone therapy.
- Elimination diets (Milk, Soy)
- Dilatation (has to be done carefully, no more than 3 mm at a time).
Achalasia

- It is a disease of unknown cause in which there is a loss of peristalsis in the distal esophagus (whose musculature is comprised predominantly of smooth muscle)
- and a failure of lower esophageal sphincter (LES) relaxation with swallowing.
- Though both of these abnormalities impair esophageal emptying, the symptoms and signs of achalasia are due primarily to the defect in LES relaxation.
Symptoms of Achalasia
Esophagogram in Achalasia
Manometry Normal
Achalasia Manometry

A: Type I

B: Type II

C: Type III

Length along the esophagus (cm)

Time (s)

UES
EGJ

mmHg

30 mmHg

2 s
Therapy of Achalasia

- Responses to all types of achalasia treatment (botulinum toxin injection, pneumatic dilation, surgical myotomy) were best in the type II patients and worst in the type III patients.

- Further studies are needed to confirm these observations that high-resolution manometry can be used to predict the response to therapy in achalasia.

- Endoscopic evaluation is generally recommended for patients with achalasia, primarily to exclude malignancies at the esophagogastric junction.
Chest pain of Esophageal Origin

- It results from abnormal perception of otherwise normal stimuli due to decreased pain threshold (ie, esophageal hypersensitivity)
- There may be Esophageal dysmotility.
- Gastroesophageal reflux is the most common cause of non-cardiac chest pain.
- The development of ambulatory intraesophageal pH monitoring has demonstrated that approximately 50 percent of patients with recurrent noncardiac chest pain have abnormal esophageal acid exposure
Investigation of Chest pain of Esophageal Etiology

- Esophagus is to be investigated only if cardiac testing is negative.
- 24 Hr Ph testing.
- Esophageal manometry.
- Endoscopy is generally a low yield procedure in this sub segment of patients but adding pH testing in endoscopy negative patients adds a wealth of information.
BRAVO wireless Ph Probe
Multichannel intraluminal impedance (MII)

- It is a new technique designed to detect intraluminal bolus movement without the use of radiation. It is generally performed in combination with manometry or pH testing.
- When combined with manometry, it provides information on the functional (i.e., bolus transit) component of manometrically detected contractions.
- When combined with pH testing, it allows for detection of gastroesophageal reflux independent of pH (i.e., both acid and non-acid reflux).
- Principle - Impedance testing depends upon measurement of changes in resistance (in Ohms) to alternating electrical current when a bolus passes by a pair of metallic rings mounted on a catheter.
Combined Ph and Impedence testing
MII
Diffuse Esophageal Spasm
Diffuse Esophageal Spasm
Nutcracker Esophagus

High pressure in the distal esophagus
Therapy for Chest pain of Esophageal origin.

- GERD therapy
- SSRI tx
- Bo-Tox.
- Viagra.
- Ca Channel Blockers.
- Theophylline.
The two main histologic types of esophageal carcinoma are adenocarcinoma and squamous cell carcinoma. These have similar clinical presentations despite their different epidemiology. Squamous cell carcinoma is associated with tobacco and alcohol abuse, is common in Asia (particularly China and Singapore), and demonstrates a predilection to African Americans in the United States. Adenocarcinoma occurs mainly in Caucasian males in their 60s who have a long history of GERD and underlying Barrett's mucosa.
Esophageal Malignancy

Adenocarcinoma

Squamous cell Carcinoma
A newer approach to minimally invasive palliation of tumors of the upper aerodigestive tract is local injection of a chemotherapy-containing gel directly into the tumor.

In pilot studies, an objective tumor response and improvement in dysphagia following multiple injections was observed in some patients.

The utility of this approach might be enhanced if used in conjunction with other therapeutic options, a strategy that requires further study.
Esophageal Stent
Biodegradable Stent

- A self-expandable biodegradable stent has been developed and is available outside the United States.
- The SX-ELLA Esophageal Degradable BD (BD Stent, Ella-CS, Czech Republic) is made from a woven surgical suture material, polydioxanone.
- It is uncovered and does not have an anti-reflux valve. The stent fully degrades in approximately three months.
- The stent has been used for malignant strictures to relieve dysphagia during neoadjuvant therapy and as a treatment for benign refractory strictures.