Surgical Evaluation for Benign Esophageal Disease

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Disclosures

No disclosures relevant to this presentation.
Objectives (for CME purposes)

• Identify studies/procedures used in the workup of benign esophageal disease
• Identify appropriate setting(s) in which to order the studies
• Apply results of studies to guide surgical intervention
• Name one study that must always be done prior to surgical intervention
• The Tests
• The tests as applied to GERD, Achalasia and Giant PEH
• Case studies
• The Tests
  • Summary of the tests as applied to GERD, Achalasia and Giant PEH
  • Case studies
THE TESTS

- EGD
- pH/impedance
- Bravo capsule
- Esophageal manometry
- Barium Swallow Study
- Solid Gastric Emptying (SGE)
- Chest CT
EGD

- MUST be done to evaluate for and rule out other pathology/cause of dysphagia, etc. prior to any surgery

- Malignancy
- Benign tumor/stricture
- Esophagitis (candida, EoE, etc)
- External compression?
- Bleeding ulcers
- Rule out pseudoachalasia
24 hour pH/impedance monitoring

24 hr pH monitoring-
• Dual probe catheter left in place for 24 hours
• Proximal and distal probes—5 and 15cm above the LES (1cm above the GE junction)
• Measurements recorded for both upright and supine positions
• Stop PPIs for 5-7 days

Radu Tutuian, MD, et al. UpToDate. 2017
24 hour pH/impedance monitoring

Impedance monitoring -

- Impedance = non acid reflux, measured by changes in resistance to alternating electrical current
- Multichannel = direction
Pro Tip: Patients do not like this test.
Bravo Capsule

- Stop PPIs for 5-7 days
- EGD
- 5cm above LES (6cm above GE junction)
- Records/transmits 48 hours*
- Diary

- 1 week--passes
- Counsel regarding MRIs (30 days; assure capsule has passed)
Bravo Capsule
Esophageal Manometry

- GOLD STANDARD for motility disorders
- Measures contractility of esophagus

- Chicago Classification v3.0 currently in use and utilizes a hierarchical approach, sequentially prioritizing
  1) Disorders of esophagogastric junction (EGJ) outflow (Achalasia subtypes I-III and EGJ outflow obstruction)
  2) Major disorders of peristalsis (absent contractility, distal esophageal spasm, hypercontractile esophagus)
  3) Minor disorders of peristalsis characterized by impaired bolus transit

Hi-Res Manometry: Normal

- Swallow
- UES
- Proximal esophagus
- Center of transition zone
- Distal esophagus
- Deglutitive EGJ relaxation window
- Location along lumen (cm)
- Time (s)
Disorders of EGJOO

Chicago Classification v3.0

**Fig. 1.** Diagnosis of disorders of EGJOO according to CC ver3.0 (adapted from Collman et al. [3]). Disorders of EGJOO are classified into EGJOO and achalasia (types I, II and III), with or without esophageal body peristalsis, respectively. PEP = Panesophageal pressurization.
Disorders of EGJOO: Manometry

a) Type I

b) Type II

c) Type III

d) EGJOO
Chicago Classification

- Type I achalasia
  - Impaired LES relaxation
  - Absent peristalsis
  - Normal esophageal pressure
Chicago Classification

B Type II achalasia
Impaired LES relaxation
Absent peristalsis
Increased pan-esophageal pressure

JAMA  May 12, 2015  Volume 313, Number 18
Chicago Classification

Type III achalasia
Impaired LES relaxation
Absent peristalsis
Distal esophageal spastic contractions
Barium Swallow Study

- AKA upper GI series
- Can be done with or without a small bowel follow-through
- Uses Fluoroscopy
- Best for evaluating the following:
  - Filling defect/diverticulum
  - Strictures
  - Hiatal/paraesophageal hernias
- Can aid in evaluating the following to a lesser extent (leading to further study):
  - Motility disorders (such as achalasia)
  - Visualizing mass lesions
Barium Swallow Study (cont.)

- Patient stands in front of fluoro arm
- Swallows barium
- If radiology sees something, zoom versus turn patient
- “Provocative Maneuvers”
Solid Gastric Emptying (SGE)

- Evaluates percent of stomach emptied at 3 time points compared to average (measured at ~60, 120 and 240 minutes)
- Often ordered when patient reports early satiety
- Significant abnormality may lead to pyloroplasty at the same time as anti-reflux procedure
Chest CT

- Concern of extrinsic compression
- Large/complex hernia
- Atypical chest discomfort
- Other-clinical judgement
EndoFLIP
Endolumenal functional lumen imaging probe

• Newer technology
• Balloon mounted on a thin catheter, done via endoscopy
• Measure of distension (as if a bolus was present)

Utility is TBD.
• The Tests

• **Summary of the tests as applied to GERD, Achalasia and Giant PEH**

• Case studies
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<th>Barium Swallow</th>
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The 10-Day Plan to Stop Acid Reflux | The Dr. Oz Show

Day 11: Call Dr. Hartwig’s office
• The Tests
• The tests as applied to GERD, Achalasia and Giant PEH
• Case studies
CASE 1

- 53-year-old man referred for dysphagia x 1 year
- Solids initially, progressed to liquids
- 20 lb weight loss
- Back and chest pain with swallowing
- History of SCC of the head/neck treated with chemo and XRT

- Patient comes from OSH with barium swallow showing narrowing at the GE junction and slightly dilated esophagus

- How to proceed? Differential?
CASE 1 (cont.)

• EGD and manometry ordered

• EGD-shows small shatzki ring, dilated, no improvement of symptoms; no mass

• Hi-Res Mano shows Type II Achalasia

• Plan: Laparoscopic (robotic) Heller myotomy and Dor fundoplication versus POEM
CASE 2

- 67-year-old woman presents with post-prandial epigastric pain, dysphagia and regurgitation; referred for “a Nissen.”
- She reports being treated for 10+ years for “GERD” with PPI therapy and OTC zantac but symptoms have never been well-controlled.
- Differential Diagnosis?
CASE 2 (cont.)

- EGD from OSH shows epiphrenic diverticulum and a hiatal hernia
- What to order prior to surgery?
- Manometry and Barium Swallow Study
CASE 2 (cont.)

- Manometry is normal
- Barium Swallow Study--
Case 3

- 46yo male with a history of bilateral lung transplant in October 2017 with objective evidence of GERD on 24 hour pH study and rejection
- Denies heartburn
- Reports significant early satiety several months after transplant (original post-transplant SGE abnormal)
Case 3 (cont.)

- Barium Swallow and repeat SGE ordered

- Barium Swallow shows mild provoked gastroesophageal reflux. No hiatal hernia seen. Barium tablet hesitates at the distal end of the esophagus but clears with additional swallow. Otherwise normal motility.
Case 3 (cont.)

- Repeat SGE shows the following:
  Emptying at 61min is 3% (normal at 60 minutes is >10%)
  Emptying at 118min is 3% (normal at 120 minutes is >40%)
  Emptying at 266min is 8% (normal at 240 minutes is >90%)
• Plan: Laparoscopic (robotic) fundoplication versus LINX and pyloroplasty
Thank you!