

# Evaluation of Dysphagia

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# Objectives

- Define dysphagia
- List the phases of normal swallowing
- Identify the most common causes of dysphagia
- Specify the best diagnostic tests for dysphagia
- Takeaway Points

# Dysphagia

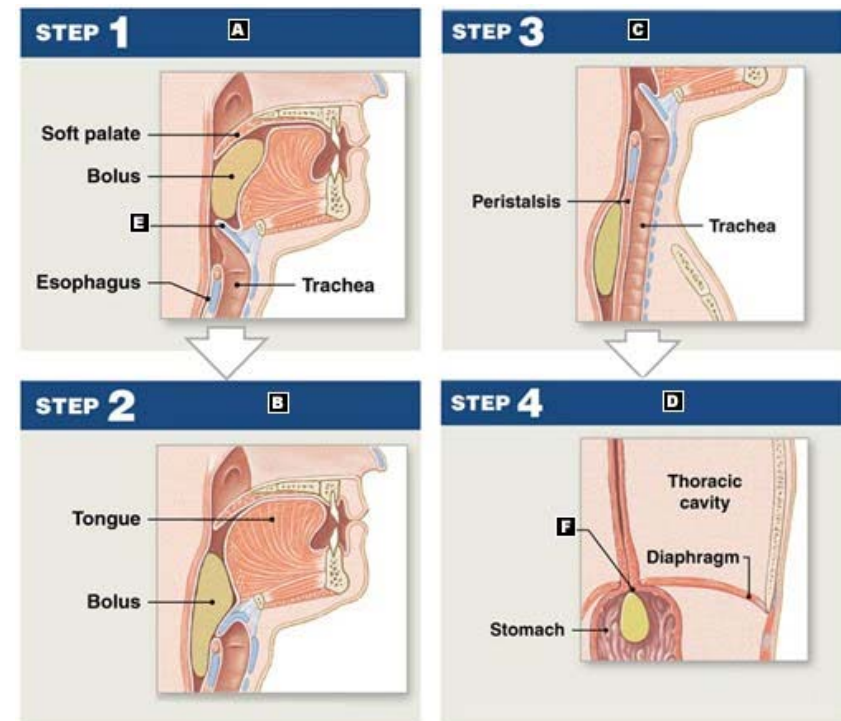
Odynophagia?



Globus sensation?

# Phases of swallowing

- Oral preparatory/transfer phase
  - Food chewed, mixed with saliva, transferred to back of tongue
- Pharyngeal phase
  - Bolus then propelled from pharynx across the relaxed UES
- Esophageal phase
  - Bolus transferred by peristalsis through the esophagus across the LES into the stomach



# Classification of dysphagia

- Location
  - Oropharyngeal
  - Esophageal
- Etiology
  - Mechanical
  - Motility

<http://www.nature.com/gimo/contents/pt1/images/gimo28-V1.mp4>

A 65yoF w/ a 6-mo history of amyotrophic lateral sclerosis is evaluated for a 1-mo h/o difficulty swallowing. She experiences choking and coughing while attempting to swallow solids or liquids and has intermittent nasal regurgitation of liquids. Two weeks ago she was treated for pneumonia. Her only medication is riluzole.

On PE, VSS. Tongue fasciculations and jaw clonus are present, and there is definite weakness of the masseter and pterygoid muscles. There is weakness of the proximal arms and the intrinsic muscles of the hands, but deep tendon reflexes are preserved. The plantar response is extensor.

Which of the following is the most appropriate initial diagnostic test to evaluate this patient's swallowing disorder?

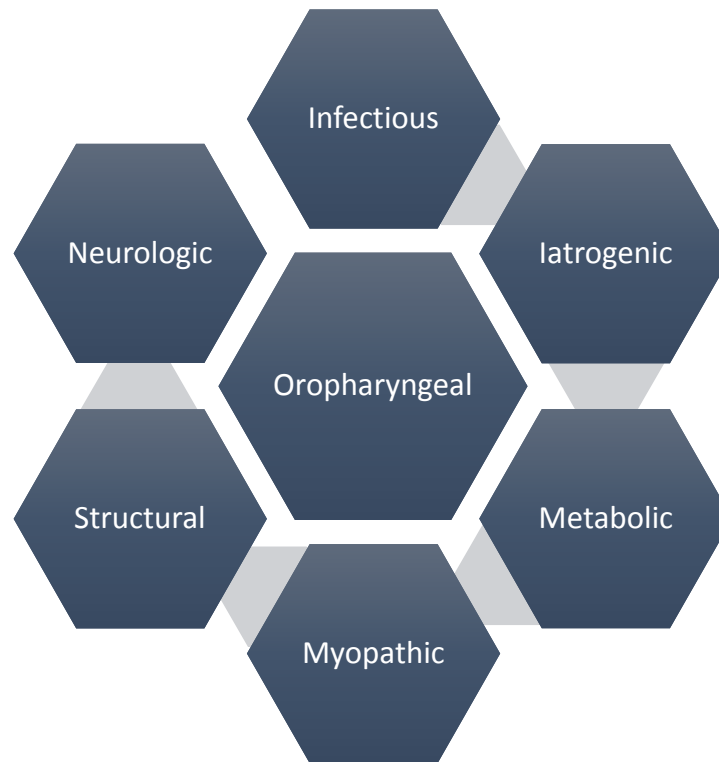
- A) Endoscopy
- B) Esophageal Manometry
- C) Upper GI series
- D) Videofluoroscopy

# Oropharyngeal Dysphagia

- Difficulty transferring food from mouth to posterior pharynx
- Symptoms?
- Differential?



# Differential for Oropharyngeal Dysphagia



# Best test for oropharyngeal dysphagia

Video fluoroscopy or modified barium swallow

# Esophageal Dysphagia

- Mechanical disorder – solids only
- Motility disorder – dysphagia to solids and liquids

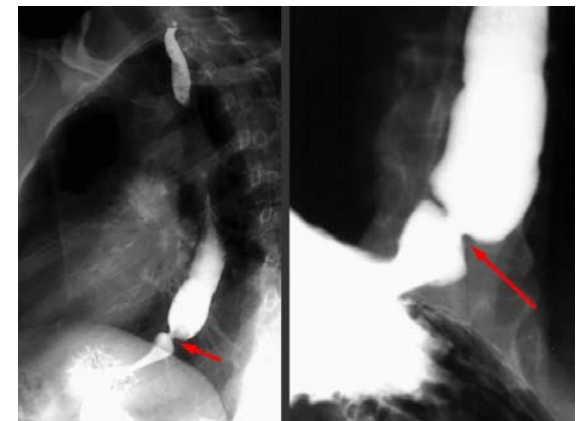
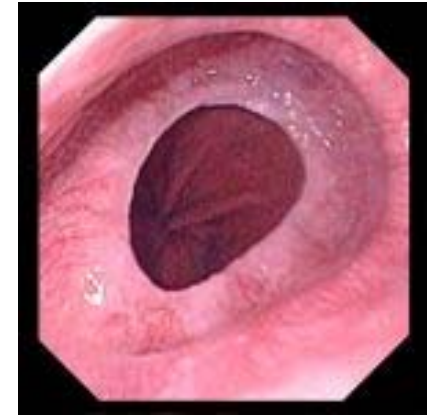
At what luminal diameter will most patients experience symptoms of dysphagia?

- A) 13mm
- B) 15mm
- C) 8mm
- D) 5mm

Mechanical

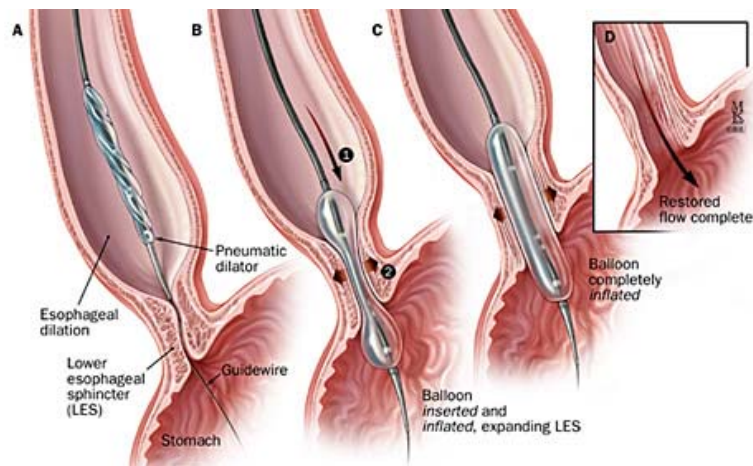
# Schatzki Ring

- Thin membrane found at squamo-columnar junction involving both mucosa + submucosa
- <13mm usually symptomatic
- Intermittent dysphagia to solids
- Tx: dilation to create a tear

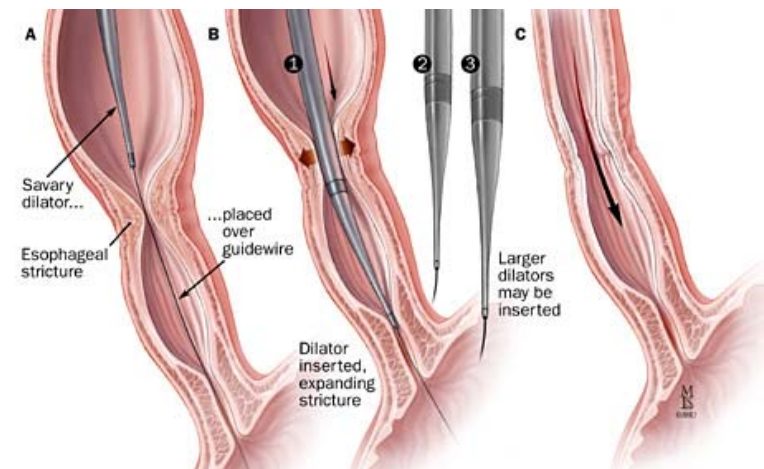


# Side Note: Dilation Devices

## Balloon

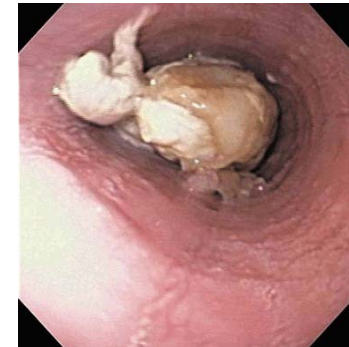


## Savary



# Food Impactions

- Steak, Chicken, Turkey; coughing, regurgitation, “something stuck”
- No issues with liquids until after ingestion of above
- EGD is best test
- Barium is my enemy



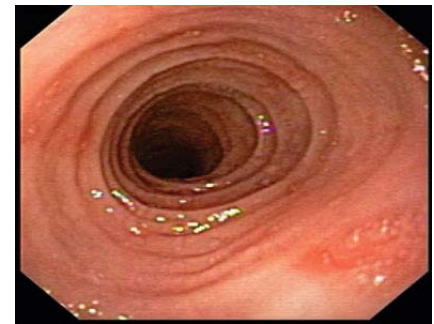


Most common cause of dysphagia in young patients?

- A) GERD
- B) EoE
- C) Functional
- D) Rings

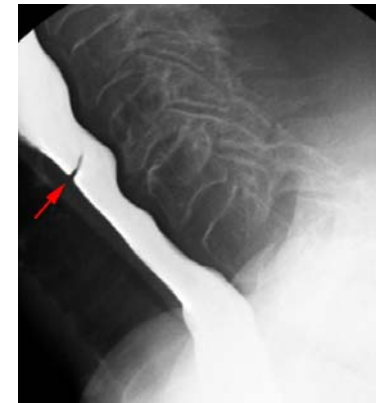
# Eosinophilic Esophagitis

- Eosinophil deposits in esophagus
- Esophageal remodeling + decreased distensibility
- Rings and strictures
- DX: EGD w/ Bx >15 Eos per HPF
- Tx: PPI first line
  - Steroids (topical and systemic)
  - dietary modification
  - intermittent endoscopic dilation



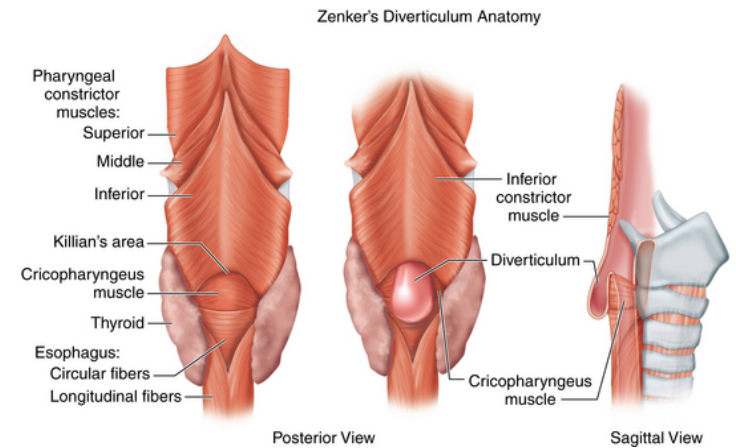
# Plummer Vinson Syndrome

- Esophageal web
- Dysphagia
- Iron deficiency anemia
- High risk of esophageal squamous carcinoma
- Tx: iron, dilate and rupture the esophageal web



# Zenker's Diverticulum

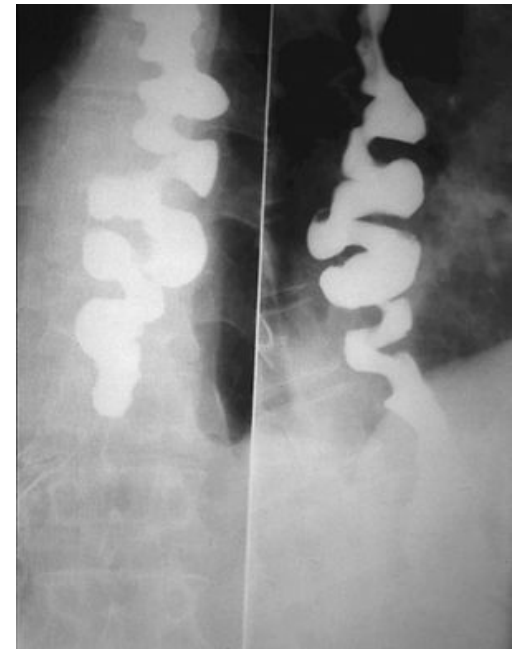
- Mucosal outpouching of the hypopharynx
- Proximal to the cricopharyngeus
- Dysphagia with delayed regurgitation
- Dx: Barium swallow is best
- Tx: surgical



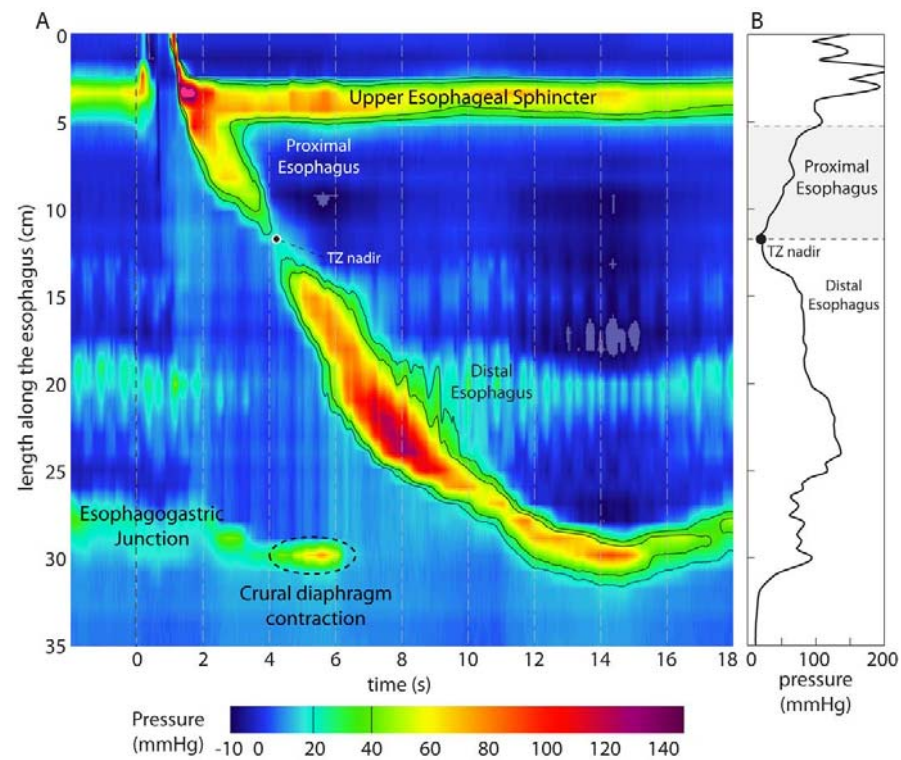
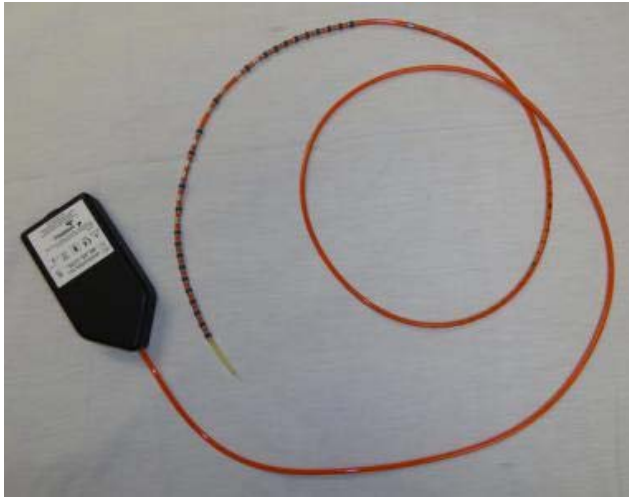
Motility

# Esophageal Spasms

- Uncoordinated or rapid contractions
- 3% of patients with unexplained CP
- Diagnosis: esophageal manometry or barium study
- Tx: treat reflux, smooth muscle relaxants (CCB or nitrates)

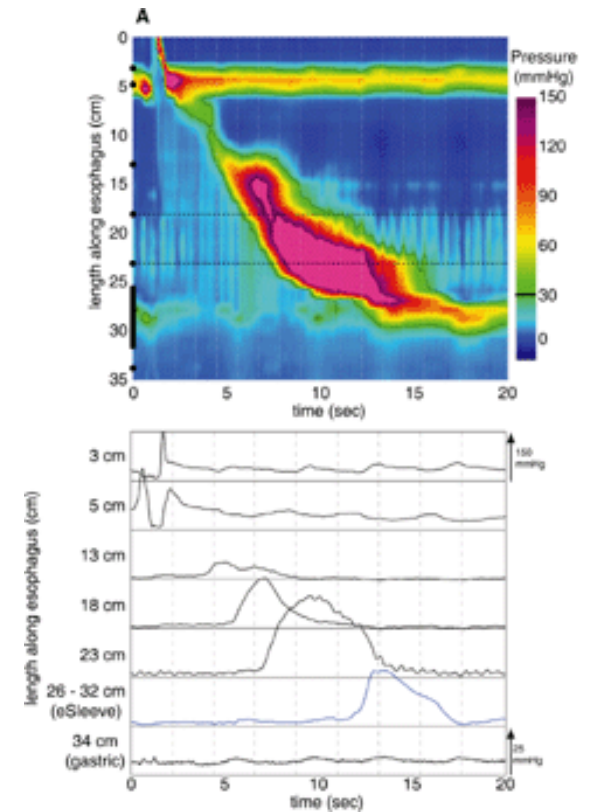


# Manometry, Simplified



# Nutcracker esophagus

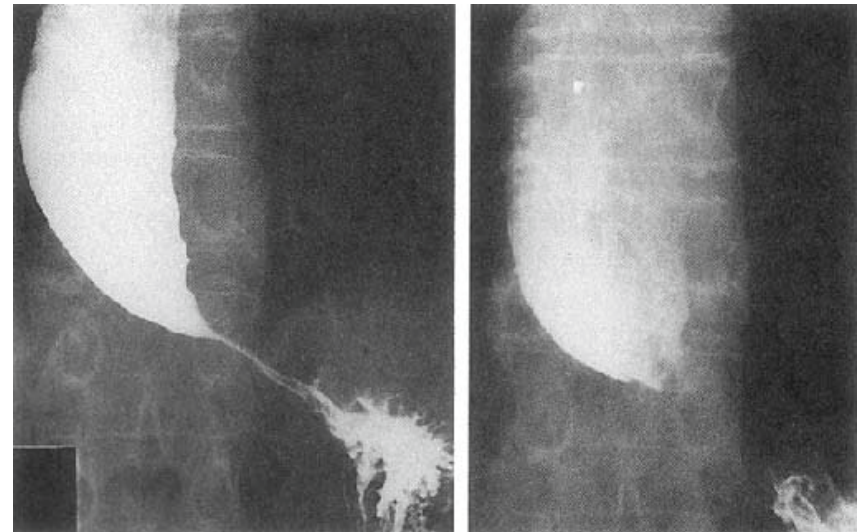
- High esophageal pressures
- Normal amplitude of esophageal contractions is between 30 and 180mmHg
- Average > 180mmHg for this condition
- Chest pain and dysphagia
- TX: PPI if reflux, smooth muscle relaxants such as CCB or nitrates





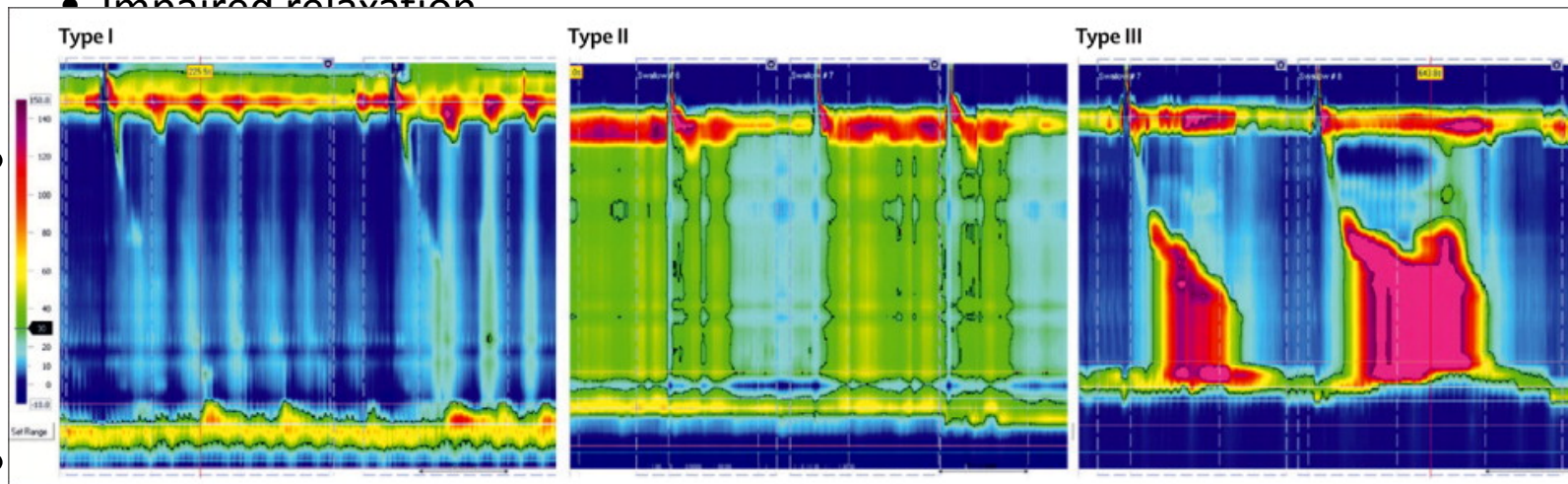
# Achalasia

- Poorly relaxed LES
- Chronic inflammation leading to:
  - Loss of post-ganglionic inhibitory neurons
  - Loss of NO, VIP
- Unopposed post-ganglionic excitatory peptides -> Ach-> High LES pressures
- Dx: Barium esophagram w/ fluoroscopy; HRM gold standard; EGD
- Different types of achalasia



# Achalasia- Chicago Classification

- Type I: Classic
  - Impaired relaxation



- Rapid pressurization
- Normal lumen
- Can appear like spasms

# Treatment for Achalasia

- All treatment aimed to decrease LES pressure
- No treatment to return peristalsis to the esophagus, yet
- Medications
  - Nitrates
  - CCB
- Botox Injections
  - Temporary effect 4-6 mo, decreased benefit with time
- Endoscopic Pneumatic dilation
  - Subsequent
  - 5% risk of perforation
- Surgery
  - Heller myotomy +/- (loose) fundoplication (to prevent post-op GERD)
- \*POEM (Per Oral Endoscopic Myotomy)

# Best diagnostic studies for esophageal dysphagia?

- Fluoroscopy: (barium) good for structural lesions- rings, webs, strictures, masses, diverticula, fistulas, sometimes achalasia
- Endoscopy: for direct luminal visualization, biopsies (EOE, GERD)
- Manometry: catheter with various pressure sensors is placed, allows measurement of the upper esophageal sphincter, esophageal body, and lower esophageal sphincter. Evaluates intraluminal pressure and coordination of pressure activity. Most sensitive for detection of esophageal motility disorder detection.
- Impedance study: direct measurement of bolus flow and can be useful adjunct to motility. Mainly used for nonacid reflux

# Takeaway Points

- Thinking food impaction? NO Barium! Barium is my enemy.
- Be kind to one another

# References

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