

State of the Art #3:
Referrals for Gastroscopy
(focus on common esophagus problems)

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November 2014

Faculty Disclosure

- Faculty: Amy Morse
- Relationships with commercial interests:
 - Grants/Research Support: Takeda, Janssen
 - Advisory Board: Shire



Objectives

- What do I look at when I triage???
- I.e., How to get you patient seen....
- What can we do in endoscopy for diagnosis and management of common esophagus problems
 - Dysphagia
 - Barrett's Esophagus

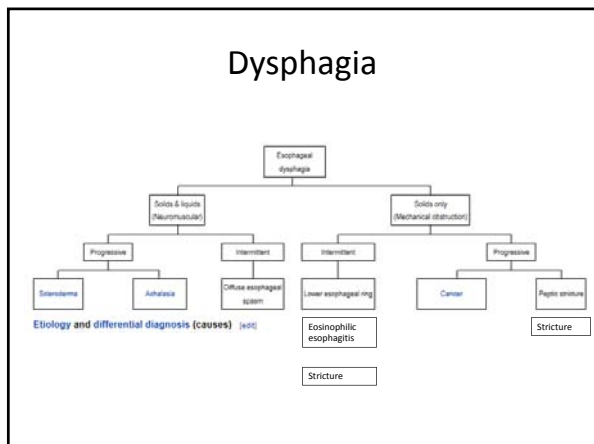
What do I look at when I triage?

- Demographics –child, elderly person
- Noted barriers to communication/consent – language, mental health status, developmental delay
- Indication and stated urgency
- Additional information
 - Labs: CBC, Coags, Ferritin
 - Imaging: S & D
 - Endoscopies
- Medications –
 - any thing I need to consider stopping before procedure E.g., **anticoagulants, NSAIDS**
 - Anything started or that we might need to start E.g., PPI

DYSPHAGIA

Dysphagia

- Progressive
- Intermittent
- Solids vs. Liquids & Solids
- Alarm features
 - Weight-loss, smoker, anemia, pain, hematemesis
- Personal history of malignancy, esophageal trauma/injury/surgery



Dysphagia

Intermittent:

- S and D – is there a ring or a web or stricture
- Trial of PPI – r/o GERD
- CBC


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    graph TD
      Root[Solids only  
(Mechanical obstruction)] --> Left[Intermittent]
      Root --> Right[Progressive]
      
      Left --> Left_1[Lower esophageal ring]
      Left --> Left_2[Eosinophilic esophagitis]
      Left --> Left_3[Stricture]
      
      Right --> Right_1[Cancer]
      Right --> Right_2[Peptic stricture]
      Right --> Right_3[Stricture]
  
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Lower Esophageal Ring

- Diagnosis
- S and D
- Gastroscopy


Esophageal web on barium swallow



This modified barium swallow, obtained in a 45-year-old man with dysphagia, demonstrates an esophageal web arising from the right side of the upper esophagus. (4/11/14)
Courtesy of Jonathan Franklin, MD, PhD.

UpToDate

Esophageal (Schatzki) ring





Endoscopic view of an esophageal (Schatzki) ring, which often cannot be well visualized unless the lower esophagus is widely distended. The ring appears as a thin membrane with a concentric smooth surface that projects into the lumen. (4/11/14)
Courtesy of James B. McCall, MD.

UpToDate




Treatment

- Dilation
 - Bougie,
 - Wire guided or
 - Balloon dilation
- widen the luminal diameter of the esophagus by circumferential stretching and/or splitting of the stricture
- Simple strictures: 1-3 dilations to relieve their symptoms, although 25-35% of patients require repeated dilations
- Goal over 15mm to swallow normally

Kim et al 2010

E.g., Balloon dilation of radiation stricture under fluroscopy

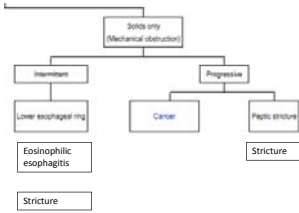




Kim et al 2010

Dysphagia

Progressive:

- CBC
- UGI if done (may show mass if advanced)
- Alarm symptoms (moves up urgency)



Kim et al 2010

Strictures

- Simple strictures are usually caused by peptic ulcer disease, Schatzki's ring or a web
- **Complex esophageal strictures** are defined as those that are long (> 2 cm), tortuous or that have a diameter that prevents passage of an endoscope of normal diameter (corrosive injury, radiation, anastomotic stricture and severe peptic injury)
- **Complex strictures may be progressive and present like cancer**
- **Managed with dilation and sometimes covered stents**

Stents

- Plastic, metal (or in Europe) biodegradable tubes that reside within esophageal lumen and improve patency
- Fully covered (i.e., removable in benign disease)




Esophageal Cancer

- Endoscopy for diagnosis
- Endoscopy for symptom management (either during treatment or palliation)
- Endoscopy for staging

Esophageal Cancer


- Endoscopy for diagnosis
 - Biopsies (squamous vs adenocarcinoma)
 - Location of tumor
 - Assess degree of patency of esophagus

Early, superficial esophageal cancer seen on endoscopy.



Courtesy of Arthur Shapiro, MD.

Ulcerating malignant esophageal mass in distal esophagus.



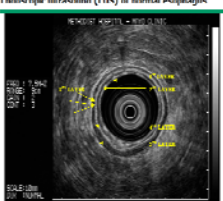
Courtesy of Arthur Shapiro, MD.

EUS in Esophageal Cancer

- Endoscope with ultrasound capability
- Allows us to look outside the lumen into the walls of the esophagus and surrounding tissues
- High frequency so short depth but can see LN etc

Role of Endoscopy in Esophageal Cancer: Endoscopic Ultrasound for staging

Endoscopic ultrasound (EUS) of normal esophagus.



EUS examination of the normal esophagus showing the typical five-layer pattern: first hyperechoic layer (interface between lumen and mucosa), second hypoechoic layer (deep mucosa/submucosa/muscularis externa), third hyperechoic layer (submucosa), fourth hypoechoic layer (muscularis propria), and fifth hyperechoic layer (adventitia/serosa).

Courtesy of Arthur Shapiro, MD and Hunter J. Weinstock, MD.

- First hyperechoic (light) layer: superficial mucosa
- Second hypoechoic (dark) layer: deep mucosa
- Third hyperechoic layer: submucosa
- Fourth hypoechoic layer: muscularis propria
- Fifth hyperechoic layer: adventitia

T stage definitions for esophageal cancer (both squamous cell and adenocarcinoma)
 Primary tumor (T)*
 TX Primary tumor cannot be assessed
 T0 No evidence of primary tumor
 Tis High-grade dysplasia*
 T1 Tumor invades lamina propria, muscularis mucosae, or submucosa
 T1a Tumor invades lamina propria or muscularis mucosae
 T1b Tumor invades submucosa
 T2 Tumor invades muscularis propria
 T3 Tumor invades adventitia
 T4 Tumor invades adjacent structures

Esophageal Cancer: Endoscopy for cure

- Only in very early T1 LN0 lesions
- EMR

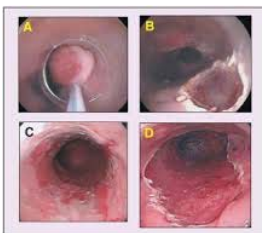
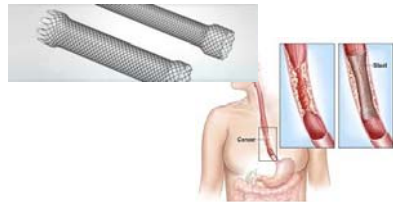


Figure 5: Endoscopic Mucosal Resection—(A) Focal nodular lesion composed of Barrett's esophagus with high-grade dysplasia. (B) The focal lesion has been completely excised via endoscopic mucosal resection. (C) Circumferential long-segment Barrett's esophagus. (D) Circumferential mucosal resection can achieve complete excision of those extensive Barrett's mucosae.

Endoscopy for symptom management

- During treatment or for palliation of obstruction
- Cornerstone is esophageal stenting



Who's Who?

- Dilation – any GI
- Stenting
 - Therapeutic endoscopists usually – GNH, Misericordia, RAH and U of A
- EUS
 - RAH (G Lutzak, K Matic, A Morse, C Wong)
 - U of A (G Sandha, C Teshima)

BARRETT'S ESOPHAGUS

Screening

- Risk factors
 - Male
 - white race, age older than 50 years,
 - family history of BE,
 - increased duration of reflux symptoms,
 - smoking,
 - and obesity
- Endoscopic *screening* for BE is controversial
 - no RCT have demonstrated a decrease in mortality, either in general or from EAC, as a result of screening



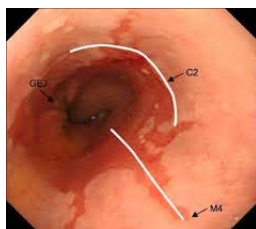
ASGE Clinical Practice Guideline Role of Endoscopy in BE 2012

Surveillance

- Also controversial
 - New Canadian Guidelines being written
 - NDBE to EAC are estimated to be as high as 0.6% per year
 - studies of patients whose EAC was detected through surveillance EGD have consistently demonstrated improved survival over patients whose EAC was not detected through surveillance
- NDBE, 4-quadrant biopsies every 2 cm
 - every 3 to 5 years is commonly recommended, although
 - not evidence based

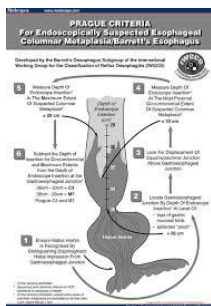
Barrett's Esophagus

- What I look for when I triage?
- Known history of Barrett's
- Are they on PPI
- Are they on Anticoagulants
- Alarm symptoms
- Is there a known nodule or dysplasia



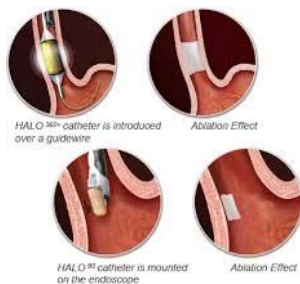
Non-dysplastic Barrett's

- Prague CM stage
- Four Quadrant Biopsies every 1-2 cm to look for dysplasia
- Every 3-5 years if no dysplasia
- If multifocal LGD or HGD consider for ablation
 - Radiofrequency
 - PDT
 - EMR - if any nodularity



Ablation: RFA

- Bipolar electrode that burns the Barrett's, have heal in low acid environment goal is neo-squamous epithelium



Gupta et al 2013

Ablation

- 448 patients with Barrett's esophagus with dysplasia, complete remission was
 - 26 percent of patients by one year,
 - 56 percent of patients by two years,
 - 71 percent of patients by three years

Gupta et al 2013

Endoscopic Mucosal Ablation



Figure 3. Endoscopic Mucosal Resection—(A) Focal nodular lesion composed of Barrett's esophagus with high-grade dysplasia. (B) The focal lesion has been completely excised via endoscopic mucosal resection. (C) Circumferential long segment Barrett's esophagus. (D) Circumferential mucosal resection can achieve complete excision of more extensive Barrett's esophagus.

- Pearls
 - Done for any area of nodularity
 - Gives a larger specimen for path
- Risk
 - Bleeding
 - Perforation
 - Stricture (esp if circumferential)

Who does Endotherapy for BE Early Esophagus Cancer

- RAH
 - RFA
 - PDT
 - EMR
 - (G Lutzak, A Morse, C Wong)
- U of A
 - EMR via therapeutic endoscopy group

References

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