Gastroesophageal Reflux Disease: PBL

Jason Domagalski, MD, FAAFP

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Dr. Domagalski practices family medicine in Menomonee Falls, WI. He provides outpatient and inpatient services. Colon cancer screening, GERD, and inflammatory bowel disease are his specialty topics. Dr. Domagalski believes that access to endoscopy through primary care is an important trend.

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Learning Objectives

1. Practice applying new knowledge and competencies gained from gastroesophageal reflux disease sessions, and receive feedback from expert faculty.
2. Interact collaboratively with peers to solve complex and challenging case-study scenarios.
3. Develop problem-solving skills that promote effective reasoning to manage gastroesophageal reflux disease within the context of professional practice.

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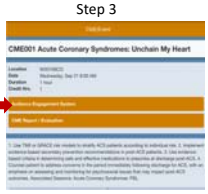
Audience Engagement System

Step 1

Step 2

Step 3



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Burning Belly PBL

- Case 1
- Case 2
- Questions

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Chief Complaint

- "My stomach hurts…."

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History of Present Illness

"Dawn"

- 48 yo F c/o chronic upper abd pain x 6 months
- Worse after she eats
- Getting full sooner
- Constant bloating

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AES Question

- What other history do you want?

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Past Medical History

- T2DM
- HTN
- Hypokalemia
- OA of bilateral knees

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Medications, Allergies

- Metformin
- Septra (recent UTI)
- HCTZ
- Pottasium Chloride
- OTC Motrin

- Allergy: NKDA

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AES Question

- Any potential culprits here?

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Medication Effect

- Metformin
- Antibiotics
- Bisphosphonates
- Steroids
- Iron
- Potassium Chloride
- NSAIDs

Loyd RA, McClellan DA. Update on the Evaluation and Management of Functional Dyspepsia. Amer Fam Phys. 2011 March 1. 83(5): 547-52.

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Social History

- School teacher
- Married, 2 children
- No tobacco
- No etoh
- No illicits

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Review of Systems

- Constitutional: no fevers, chills, change in wt
- EENT:no blurred vision, rhinorrhea, tinnitus
- CV:no chest pain, palpitations
- Resp: no dyspnea, cough
- GI:+bloating, +early satiety, +pain
- GU:no dysuria
- MSK:+knee pain

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Physical Examination

Gen: A&Ox3 in NAD
HEENT: PERRL, OP clear
CV: RRR w/o m/g/r
Resp:CTA-B
Abd: soft, obese, ttp over epigastrium

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- What is your differential diagnosis of likely causes for Dawn's epigastric pain?

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Differential Diagnosis

- Functional Dyspepsia ~ 70%
- PUD ~15%
- Reflux Esophagitis ~10%
- Gastric/Esophageal Cancer <2%
- Gastroparesis- Rare
- Pancreatitis- Rare
- Medication Effect

Loyd RA, McClellan DA. Update on the Evaluation and Management of Functional Dyspepsia. Amer Fam Phys. 2011 March 1. 83(5): 547-52.

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- What is the likely diagnosis?
- Is an EGD needed?
- What other diagnostics would you perform?

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ROME III Criteria

- One or More of the Following:
  - Postprandial fullness
  - Early satiation
  - Epigastric pain
  - Epigastric burning
- AND no evidence of structural disease
- Criteria met for the last 3 months and onset at least 6 months prior to diagnosis

ROME III Diagnostic Criteria for Functional Gastrointestinal Disorders. http://romecriteria.org/assets/pdf/19_RomeIII_apA_885-898.pdf.

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Dyspepsia Diagnostics

- EGD indicated for Alarm Features
  - >55 years old
  - Bleeding, anemia, >10% wt loss, progressive dysphagia
  - History of cancer or PUD
  - Abdominal mass on exam

Loyd RA, McClellan DA. Update on the Evaluation and Management of Functional Dyspepsia. Amer Fam Phys. 2011 March 1. 83(5): 547-52.

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H. Pylori Testing

Test	Sensitivity	Specificity
Serum	85%	79%
Breath	95%	98%
Stool	94%	92%

Talley NJ, Vakil N. Guidelines for the Management of Dyspepsia. Amer J of Gastro. 2005: 2324-35.

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Follow Up #1

- H. pylori negative
- No EGD indicated
- Trial of treatment

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AES Question

- What would you prescribe or try?

Management

- Acid Suppression
- Prokinetics
- Eradication of H. Pylori
- Psychotropics
- Psychological interventions

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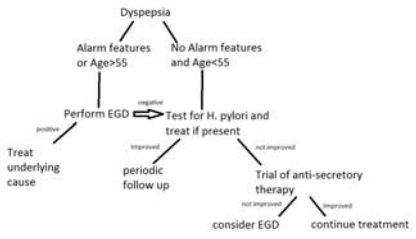

Burning Belly PBL

- Case 1
- Case 2
- Questions

Chief Complaint

- “I have horrible heartburn…”

History of Present Illness

”Jim”

- 32 yo M w/ chronic heartburn
- Worse at end of day
- Avoids spicy foods
- Present over 10 years
- Getting worse

Past Medical History

- PMHx: HTN
- PSHx: tonsillectomy

Medications, Allergies

- HCTZ
- OTC antacids
- NKDA

Family History

- No history of GI malignancies

Social History

- plumber
- Smokes 2 ppd
- Drinks 3-4 mixed drinks/day
- More on weekend

Review of Systems

- Constitutional: no fevers, chills, no wt loss
- EENT:no blurred vision, rhinorrhea, tinnitus
- CV:no chest pain, palpitations
- Resp: no dyspnea, chronic cough
- GI: +heartburn, no odynophagia, no melena
- GU:no dysuria
- MSK:+knee pain

Physical Examination

- Malodorous breath
- Poor dentition
- Wheezing

AES Question

- What is in your differential diagnosis?

Non-GERD causes

- Achlasia or Esophageal Dismotility
- EOE
- Reflux-like Dyspepsia
- Gastroparesis
- Cardiac

Subramanian CR, Triadafilopoulos. Refractory Gastroesophageal Reflux Disease. Gastroenterology Report 3. 2014 Sep 30; 41-53

AES Question

- How would you treat this?

Follow up #1

- Its been 8 weeks
- Initially helped
- Symptoms returning

AES Question

- What do you want to do now?

Reasons PPIs Fail

- Noncompliance
- Inadequate dosing
- Taking medication incorrectly
- Non-adherence to lifestyle modifications
- Increased volume reflux

Subramanian CR, Triadafilopoulos. Refractory Gastroesophageal Reflux Disease. Gastroenterology Report 3. 2014 Sep 30; 41-53

Risk Factors for Refractory Disease

- Increased BMI
- Sliding hiatal hernia
- Esophageal hypersensitivity
- Ineffective Esophageal Peristalsis
- Ultrastructural and functional change in esophageal epithelium

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Treating Refractory Disease

- Double PPI
- Extended Release PPIs
- Alternate PPI
- Add night time H2RA as needed
- Prokinetics

Subramanian CR, Triadafilopoulos. Refractory Gastroesophageal Reflux Disease. Gastroenterology Report 3. 2014 Sep 30; 41-53

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Noncompliance

- Not Always the patient
  - Minimal time educating
  - Excessive medical jargo or unclear instructions
- Health Coaching
- Shared Decision Making
- Close the loop

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Follow up #2 & #3

- Despite trying alternate ppi and adding H2 blocker patient still having symptoms
- Worked with health coach in the clinic and adhering to lifestyle changes
- Now complaining of food getting “Stuck” occasionally

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AES Question

- Would you recommend EGD? Why?

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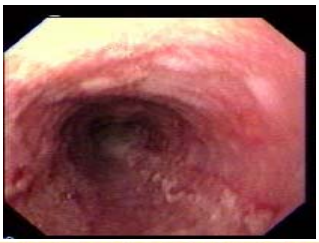
Erosive Esophagitis



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AES Question

- What other tests should you consider?

Functional Evaluation

- Manometry
- Ambulatory pH/Impedence monitoring
- EndoFLIP
- Gastric Scintingraphy

Subramanian CR, Triadafilopoulos. Refractory Gastroesophageal Reflux Disease. Gastroenterology Report 3. 2014 Sep 30; 41-53

High Resolution Manometry

- Evaluate for motor disorders/Peristalsis
- Closely spaced pressure sensors
- Chicago Classification for severity

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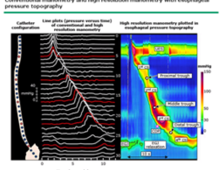
Conventional manometry and high resolution manometry with esophageal pressure topography



Manometry quantifies intraluminal esophageal and LES pressure during swallowing to detect abnormalities of peristalsis and sphincter relaxation. Conventional manometry achieved this with relatively few pressure sensors (red dots in schematic on the left and red lines in the center panel). Hence data from conventional manometry can only be accurately displayed as pressure versus time plots as in the center panel with large gaps in the esophageal lumen between pressure recording sites. High resolution manometry fills these gaps with a multitude of closely spaced pressure sensors (blue dots in the schematic on the left and white lines in the center panel). Alternatively, high resolution manometry can be displayed as a "Clouse plot" in esophageal pressure topography as in the right panel with pressure plotted as a continuum, interpolating values between the closely spaced sensors and displaying the pressure magnitude by color. When displayed in pressure topographic, stereotypic features of the topographic architecture of the peristaltic contraction become evident, labeled as the 1st, 2nd, 3rd, and 4th contractile segments and the proximal, middle, and distal pressure troughs. The 4th contractile segment is the LES. The onset of the swallow, timed by upper sphincter relaxation, is indicated by the vertical dotted line.
UES: upper esophageal sphincter; CDP: contractile deceleration point; EGJ: esophagogastric junction; CS: contractile segment; s: second; LES: lower esophageal sphincter.

UpToDate

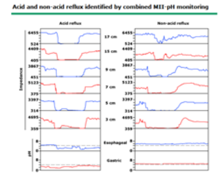
pH monitoring

- Catheter based (24 hrs)
- Wireless (48 hrs+)
- May evaluate on and off PPI

Impedence Monitoring

- Detects Retrograde bolus movement
- Usually combined with pH probe
  - Increases diagnostic yield by 17%

Acid and non-acid reflux identified by combined MII-pH monitoring



Reflux is identified by changes in impedance progressing distally to proximally as liquid advances from the stomach into the esophagus. Information from the pH electrode is used to classify reflux as acid (ie, pH drops from above to below 4) or non-acid (ie, pH remains above 4).
Courtesy of Radu Tutuian, MD and Donald O Castell, MD.

UpToDate

Reproduced with permission from: Tatuin R. Esophageal multichannel intraluminal impedance testing. In: UpToDate, Basow DS (Ed), UpToDate, Waltham, MA. (Accessed on [May 30, 2015].) Copyright © 2015 UpToDate, Inc. For more information visit www.uptodate.com.

EndoFLIP

- Cylindrical bag placed in distal esophagus
- Detects increased distension in EGJ
- Evaluation for large volume reflux
- Helpful for assessment of need for surgery

Subramanian CR, Triadafilopoulos. Refractory Gastroesophageal Reflux Disease. Gastroenterology Report 3. 2014 Sep 30; 41-53

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Follow up #4

- Abulatory ph and Impedence testing +
- Pt is concerned nothing will help

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AES Question

- How often does ppi therapy fail?
- Is he a candidate for surgery?

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Fundoplication

- Create per esophageal ring around GEJ
- LOTUS trial
  - Lower rates of heartburn/reflux at 5 yrs
- Complications
  - Dysphagia- Early vs Late
  - Gas Bloat Syndrome
  - Return of symptoms at 10 yrs-10%

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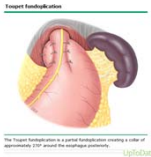
Partial Fundoplication

- Anterior
  - Less dysphagia and bloating
  - Similar heartburn scores/patient satisfaction
- Toupet (posterior)
  - Less dysphagia
  - Similar response rates
  - Surgery of choice BMI<40



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Gastric Bypass

- Preferred anti reflux surgery for BMI>40
- BOLD
  - RGB-56%
  - Banding 46%
  - Sleeve 41%
- Lower post op complications

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Treatment Gap

- 40% Fail aggressive medical therapy
  - 5% undergo fundoplication
- Fear of complications or treatment failure
- Alternative treatment
  - LINX
  - EndoStim
  - Stretta
  - Medigus

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Practice Recommendations

- There is no significant difference in equivalent doses of PPIs for nonerosive GERD (SORT: A)
- Anti reflux surgery should be reserved if there are contraindications to PPIs or PPI therapy is insufficient to control symptoms (SORT: C)
- H. pylori should be tested and treated for dyspepsia, but not GERD alone (SORT: C)

Burning Belly PBL

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Practice Recommendations

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References

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Associated Session

- Gastroesophageal Reflux Disease: The Burning Belly, Review of GERD and Dyspepsia

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