

A large, modern multi-story hospital building with a mix of glass and brick facades, set against a blue sky with white clouds. The building has several wings and a central entrance area. In the foreground, there is a landscaped area with green grass, young trees, and a paved walkway.

Current management of GERD

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Disclosures

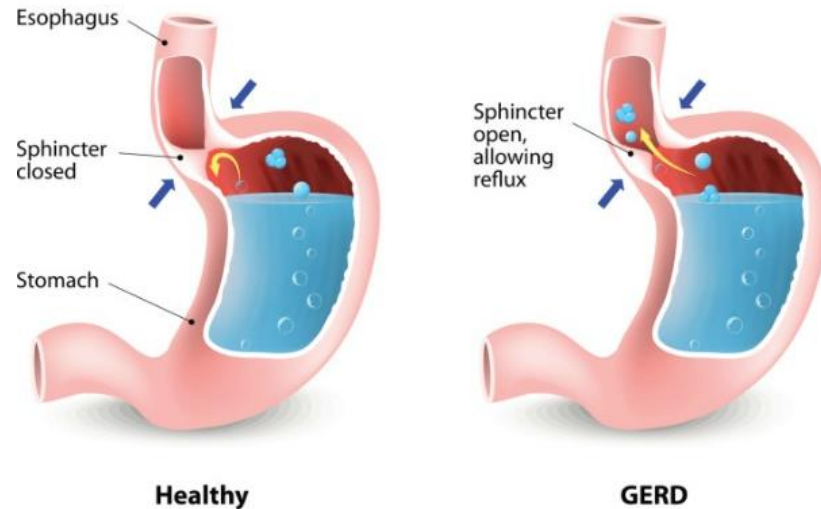
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Objectives

- Discuss the initial treatment of GERD
- List the indications for invasive testing in the setting of GERD
- Describe the relationship of GERD to Esophageal cancer
- Review the pros and cons of antireflux surgery

Gastroesophageal reflux disease (GERD)

- Abnormal reflux of gastric contents into the esophagus, pharynx or lung
- Sub-classified based on presence or absence of mucosal damage
 - Non-erosive reflux disease (NERD)
 - Erosive reflux disease (ERD)



GERD

- Commonly encountered by primary care providers and gastroenterologists
- Most common benign medical condition of stomach and esophagus
- Prevalence of 10-20% in the Western world
 - <5% in Asia

Symptoms

- Typical: Heartburn, acid regurgitation
- Atypical: epigastric fullness, epigastric pressure, epigastric pain, dyspepsia, nausea, bloating, belching
- Extraesophageal: chronic cough, bronchospasm, wheezing, hoarseness, sore throat, asthma, laryngitis, dental erosions

Warning/Alarm symptoms

- Weight loss
 - Anemia
 - Dysphagia
 - Persistent vomiting
-
- Consider upper endoscopy, especially in patients over 60 yo



Differential Diagnosis

- Peptic ulcer disease
- Achalasia
- Gastritis
- Dyspepsia
- Gastroparesis



Diagnosing GERD

- Clinical symptoms
- Response to acid suppression
- Objective testing
 - EGD
 - pH monitoring



Initial Management

- Presumptive diagnosis can be made in the setting of typical symptoms
 - Cardiac cause should be excluded in patients with chest pain
 - UGI or EGD is not required with typical symptoms
- Lifestyle Modifications
- Empiric PPI therapy

Lifestyle Modifications

- Weight Loss
- Head of Bed Elevation
- Avoid meals 2-3 hours before bedtime
- Consider dietary modifications, but routine elimination diets not recommended
 - (chocolate, caffeine, EtOH, acidic/spicy foods)



Proton Pump Inhibitor Therapy

- No major differences in efficacy between different PPIs
- 8 week course is recommended
- Initiate with once daily dosing, before first meal of the day
- Lowest effective dose recommended
- Step-down therapy or on-demand use in patients with NERD

Table 1: Proton Pump Inhibitors

Prescription

Dexlansoprazole (Dexilant)
Esomeprazole (Nexium)
Lansoprazole (Prevacid)
Omeprazole (Prilosec)
Pantoprazole (Protonix)
Rabeprazole (Aciphex)

OTC^a

Prevacid 24h
Nexium 24h
Prilosec OTC
Zegerid (a combination of a PPI
with an antacid)

^a Available in brand and generic forms.
PPI: proton pump inhibitor.
Source: Reference 5.

PPI vs H₂Blocker

- Histamine receptor antagonist
 - Lower cost
 - More effective in non-erosive disease
- PPIs demonstrate faster healing rates of esophagitis and faster symptom relief

PPI Therapy

- High rates of non-compliance with therapy – up to 40%
- Therapy compliance should be assessed in patients with partial or no response
- If Partial response:
 - Increase to twice daily for partial response or night-time symptoms, OR
 - Switch to a different PPI
- If No response:
 - Refer for evaluation

Long-term PPI Use

Malabsorbtion

- Calcium
 - Increased risk of osteoporosis
 - Existing osteoporosis is NOT a contraindication to PPI unless another risk of hip fracture exists
- Magnesium
 - More common in older patients
 - Average of 5.5 years of PPI use
 - Higher risk in patients also on diuretics

Infectious

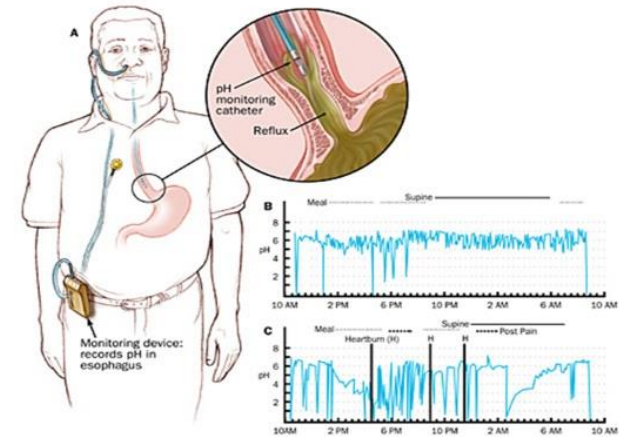
- *Clostriduim difficile*
 - 2.9x increased risk
 - Increased risk of recurrence (42%) when on PPI during *C. diff* treatment
- Pneumonia
 - 2.23x increased risk
 - Risk increased in patients on any acid suppression
 - Related to short-term use, not necessarily long-term use

Diagnostic Testing in GERD

Diagnostic test	Indication
PPI trial	Classic GERD symptoms without alarm symptoms
pH monitoring	Refractory symptoms; pre-operative evaluation in NERD
EGD	Alarm symptoms, PPI unresponsive patients, high risk for Barrett's
Barium swallow	Evaluation for dysphagia, otherwise not necessary
Manometry	Prior to anti-reflux surgery, otherwise not necessary

pH Monitoring

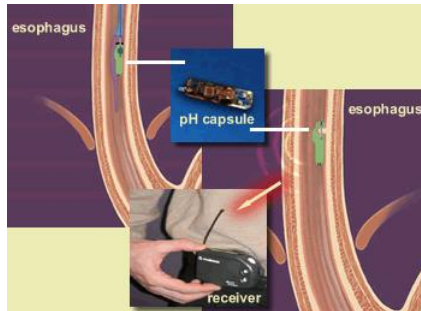
- Evaluate persistent symptoms despite medical therapy
 - Especially in the absence of erosive damage
- Monitor control of reflux in patients with persistent symptoms
- Recommended prior to anti-reflux surgery in patients without erosive disease (NERD)
- Either a wireless capsule or transnasal catheter
- Can be done on or off of suppression therapy
- Patients also record symptoms during the testing



pH Monitoring

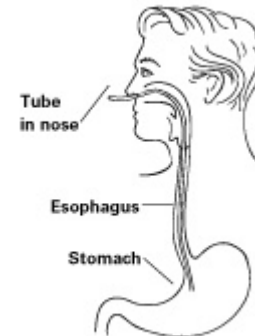
Wireless capsule

- Requires endoscopic placement
- Decreased patient discomfort
- Longer recording time (48 hrs)
- Capsule is placed 6 cm above the squamocolumnar junction
- Less migration during recording phase



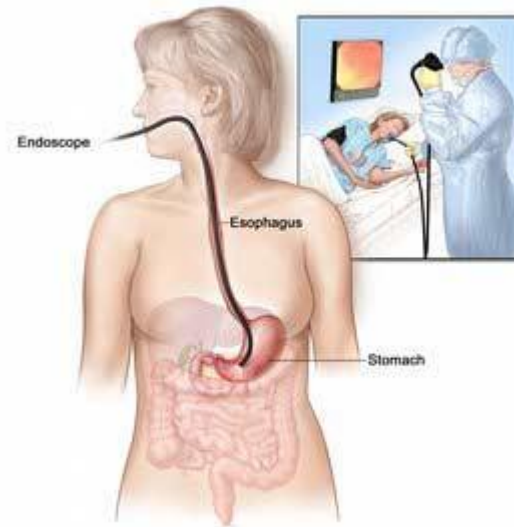
Transnasal catheter

- More discomfort for patients
- 24 h monitoring
- Can also perform impedance testing
 - Distinguish acid and non-acid reflux
- Test of choice for on PPI testing



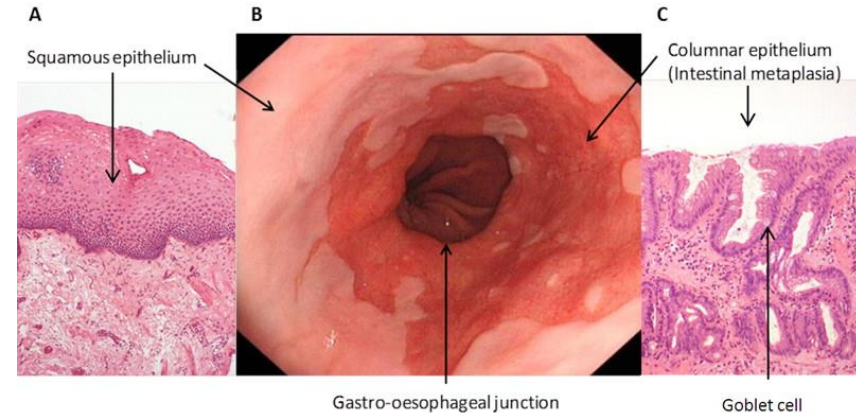
Upper Endoscopy (EGD)

- Esophagitis or Barrett's esophagus can confirm GERD diagnosis
- Normal endoscopy does not refute GERD diagnosis
 - Most patients with typical symptoms will have normal EGD



Barrett's Esophagus

- Intestinal metaplasia
 - Normal squamous epithelium → columnar epithelium
- Increased Risk:
 - Age >50 yrs
 - Male
 - Caucasian
 - Chronic GERD
 - Hiatal hernia
 - Elevated BMI
- No correlation to frequency or severity of symptoms
- Patients may develop dysplasia → increased risk for cancer
 - Annual cancer risk estimated 0.5 – 1% per year
 - 40x higher than general population

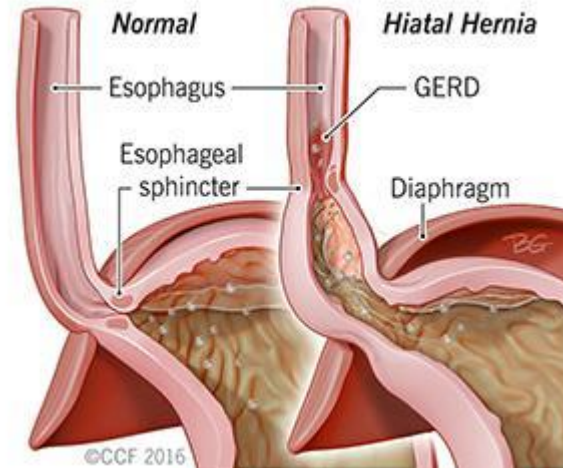




ANTI-REFLUX SURGERY

Indications for Surgery

- Unwillingness to continue on long-term medications
- Intolerance of medical therapy
- Medically refractory symptoms
 - with evidence of GERD on endoscopy and/or pH monitoring
- GERD with large hiatal hernia



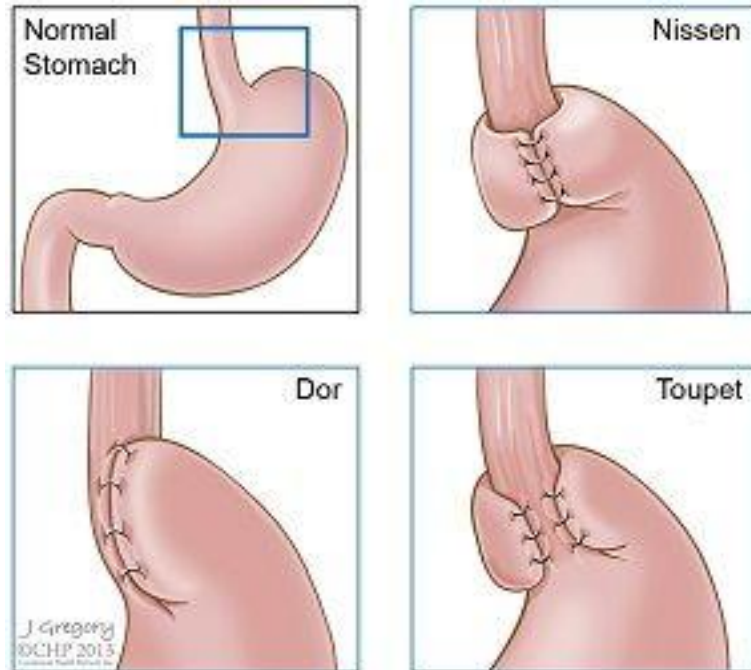
Patient selection

- Patients with typical symptoms who respond to PPI
 - Abnormal pH testing with good symptom correlation
- Highest response to surgery*
- Patients with atypical symptoms or extraesophageal symptoms have lower improvement with surgery
 - Patients with morbid obesity who are candidates for bariatric surgery should consider RYGB vs other options

Anti-Reflux Surgery

- Goal is to augment the LES with complete or partial upper stomach wrap
- Replace high pressure zone in the abdomen
- Repair hiatal hernia
- Pre-operative work-up must include manometry testing to rule out esophageal dysfunction
- Currently most often performed laparoscopically

Anti-Reflux Surgery



Symptomatic GERD

endoscopy - barium swallow - esophageal manometry - (ph monitoring)

hypotonic - normotonic LES
normal esophageal length
normal esophageal motility

→ Nissen fundoplication

hypotonic LES
normal esophageal length
poor esophageal motility

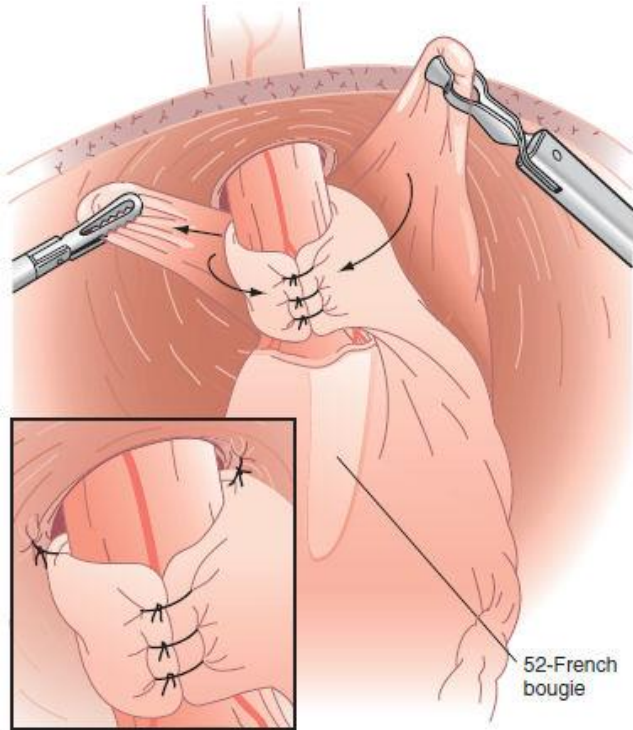
→ partial fundoplication

hypotonic LES
short esophagus

→ Collis gastroplasty
partial fundoplication
Nissen fundoplication
Thoracic approach (Belsey -Nissen)

B.Dallemagne

Nissen Fundoplication



Surgical Outcomes

- 5 year follow-up, Resolution or Maintained improvement of:
 - Heartburn 90%
 - Regurgitation 92%
 - Dysphagia 75%
 - Hoarseness 69%
 - Cough 69%
- In the long-term, patients will likely need to go back on acid suppressing meds
 - At 12 years, 62% of patients take anti-reflux medications regularly (vs 92% of medically treated patients)
- Complications:
 - Dysphagia
 - Gas-bloat

Surgical Therapy vs Medical Therapy

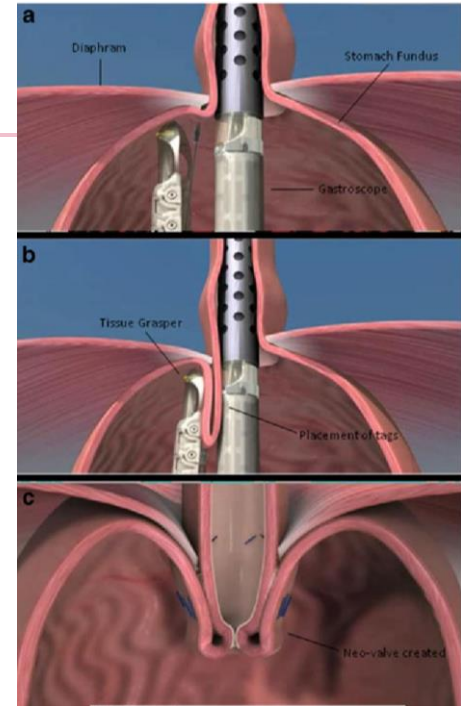
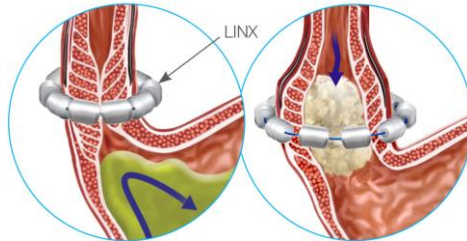
Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice, 20e > Chapter 42. Gastroesophageal Reflux Disease and Hiatal Hernia

Table 2. Randomized Controlled Trials Comparing Surgical and Medical Therapies for GERD

<i>STUDY</i>	<i>STUDY GROUPS</i>	<i>FOLLOW-UP</i>	<i>OUTCOME</i>
Anvari et al, ⁴⁶ 2011	PPI, <i>n</i> = 52; ARS, <i>n</i> = 52	3 years	ARS and PPI provided equal symptom control; ARS provided more heartburn-free days
Grant et al, ⁴⁷ 2008	PPI, <i>n</i> = 179; ARS, <i>n</i> = 178	1 year	Reflux score: PPI, 73; ARS, 85; <i>P</i> < .05
Lundell et al, ²⁹ 2009	Omeprazole, <i>n</i> = 71; ARS, <i>n</i> = 53	12 years	Treatment failure: Omeprazole, 55%; ARS, 47%; <i>P</i> = .022
Lundell et al, ²⁸ 2007	Omeprazole, <i>n</i> = 119; ARS, <i>n</i> = 99	7 years	Treatment failure: Omeprazole, 53%; ARS, 33%; <i>P</i> = .002
ARS, antireflux surgery; PPI, proton pump inhibitor.			

New Options

- Endoscopic transoral incisionless fundoplication (TIF)
 - Still being studied
 - Not currently recommended by society guidelines
- LES augmentation
 - LINX





SUMMARY

Objectives – Answered...

- Discuss the initial treatment of GERD
 - Lifestyle Modifications, PPI therapy
- List the indications for invasive testing in the setting of GERD
 - Alarm symptoms, partial or no response to PPI therapy
- Describe the relationship of GERD to Esophageal cancer
 - Chronic inflammation → intestinal metaplasia → dysplasia → adenocarcinoma
 - Low rates of cancer, but increased risk in middle-aged, obese, white males with long-standing GERD
- Review the pros and cons of antireflux surgery
 - Pro: decreased use of medications, may see regression of Barrett's changes
 - Cons: complications, no guarantee to be off medications forever, surgical risk

Questions?

