Other side of GERD/Hiatal Hernia
Medical VS Surgical Management

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Question: 1

Which of the following surgical procedure will effectively improve symptoms of GERD?

A. Heller myotomy
B. Gastric Lap band
C. Gastric sleeve
D. Roux-en-Y gastric bypass surgery
E. Vertical banded gastroplasty

Answer

Roux-en-Y effectively reduces the gastric acid hence provides added benefit to GERD. Other options will make GERD worse.
GERD Overview

• The Montreal Classification: A condition that develops when the reflux of stomach contents causes troublesome symptoms and/or complications.

• 20% of patients from Westernized countries experience heartburn, reflux or both intermittently.

Risk factors

- Obesity
- Reflux heartburn
- Smoking
- Nonsteroidal anti-inflammatory drugs (NSAIDs)
- Chronic respiratory, gastrointestinal reflux or peptic ulcer infection, lower respiratory, or severe acidosis
- Aging
- Irritable bowel syndrome
- Anemia/depression
- Family history of GERD

Symptoms

- Heartburn
- Regurgitation
- Dysphagia
- Chest pain
- Acid/liquid Brash
- Globus sensation
- Odynophagia
Diagnosis

- ASGE 2015: symptoms & by a favorable response to antisecretory medical therapy.
- EGD: weight loss, dysphagia and hematemesis. Risk of Barrett’s.
- > 50 yrs, male sex, white race, FHx of BE or esophageal Ca, prolonged reflux symptoms, smoking, and obesity.
- EGD not recommended: Responsive to medical therapy, choking, coughing, hoarseness, asthma, laryngitis, chronic sore throat, or dental erosions.
ASGE 2015

TABLE 2: Indications for endoscopy in patients with GERD

- Gastroesophageal reflux disease symptoms that persist or progress despite appropriate medical therapy
- Dysphagia or odynophagia
- Involuntary weight loss > 5%
- Evidence of GI bleeding or anemia
- Finding of a mass, stricture, or ulcer on imaging studies
- Screening for Barrett’s esophagus in selected patients (as clinically indicated)
- Persistent vomiting (>7-10 days)
- Evaluation of patients before or with recurrent symptoms after endoscopic or surgical antireflux procedures
- Placement of wireless pH monitoring

EGD

- Erythema
- Erosions
- Ulceration
- Peptic strictures
- BE

pH/impedance monitoring

- Quantification of the degree of esophageal acid exposure and the correlation of symptoms with reflux events.
- 90% accurate in GERD patients.
- The total time with pH < 4 as recorded by a probe placed 5 cm above the LES:
  a) Total esophageal acid exposure time.
  b) Upright acid exposure time.
  c) Supine acid exposure time.
  d) Number of episodes of reflux.
  e) Number of reflux episodes lasting more than 5 minutes.
  f) Duration of the longest reflux episode.

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Questions#2

- 35 yo female with heartburn, chest pressure for a year. Symptoms occur several times a day with nocturnal complaints, denies dysphagia, no association with meals. EGD 6 months ago showed 2 cm HH with esophagitis, biopsies negative for EoE. No response to BID PPI for 9 months. She is begging to be referred for surgery. What should be done next?
  a) Repeat EGD
  b) pH impedance test on PPI
  c) 48 hour pH study off PPI
  d) Esophageal manometry
  e) Barium swallow

Answer

- Patient who has previously documented GERD is sent for pH impedance test ON PPI.
- Patient with unclear GERD diagnosis should be sent for prolonged pH test off PPI before surgery is considered.
Hiatal Hernias

- 50 to 94 percent of patients with GE reflux disease (GERD) have a type I hiatus hernia as compared with 13 to 59 percent of normal.
- Hypotensive LES → GERD
- Patients with type I hiatus hernia have prolongation in acid clearance especially while recumbent.
- Paraesophageal hernia → Gastric volvulus
- Type II, III, IV → epigastric or substernal pain or retching
- Cameron lesions → UGB
- Respiratory complications

Diagnosis

- EGD
- Barium Swallow
- CT
- Manometry
Medical management

- Type I: Management of GERD symptoms
- Lifestyle modifications
- Acid suppressive therapy
- Prokinetic agents (Domperidone, Metoclopramide, erythromycin)
- Paraesophageal Hernia: No definite medical therapy

Endoscopic Approach

- Endoscopic approach:
  a) RFA
  b) Endoscopic suturing of the LES (transoral incisionless fundoplication TIF)

In a prospective, randomized trial of radiofrequency ablation vs placebo, Corley et al showed that, at the 6-month follow-up, there was no difference in daily medication use or in esophageal acid exposure times.

Meta-analysis of 4 trials (153 patients) by Lipka showed that RFA was not better than PPIs with respect to LES pressure, percentage of time pH was below 4, or quality of life.

JAMA Surg. 2016 Jan;151(1):73-8
Transoral incisionless fundoplication (TIF)

https://www.youtube.com/watch?v=qXS4jHCWko

In a recent multicenter randomized controlled trial with 696 patients, by Hunter et al.
- 6-month follow-up, resolution of regurgitation occurred in 65% of patients who underwent TIF vs 45% in PPI group.

Gastroenterology. 2015 Feb;148(2):324-333

Endoscopic Reduction

https://www.youtube.com/watch?v=RTNcl21J0uM
Indication of surgery in Type I

- Failed medical management
- Opt for surgery despite successful medical management
- Complications of GERD
- Extra-esophageal manifestations

A regression from LGD to BE was observed in 12 of 19 (63.2%) patients in the medical group and in 15 of 16 (93.8%) patients in the surgical group (p=0.03)

Preoperative Workup

- EGD
- pH study on vs off PPI
- Esophageal manometry
- Barium swallow
- CT scan
- GES

Question #3

- Which one of the following is the best predictor of success of anti reflux surgery?
  A. Age
  B. Postoperative "diaphragmatic stressors"
  C. Normal LES pressure on manometry
  D. Response to preoperative PPI
  E. Preoperative gastric emptying
Answer

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Surgical approach

- Nissen in 1956,
- Toupet in 1963,
- Dor in 1964,
- Belsey in 1966,
- Lind in 1966,
- Rossetti in 1967,
- Hill in 1967
- Guarner in 1975
- MSA

- Controls reflux
- Lasts over time
- Minimal adverse effects

Basics of Techniques

- Extensive mediastinal dissection in order to have about 3 cm of esophagus without any tension below the diaphragm.
- Transection of the short gastric vessels is performed in order to have a tension-free fundoplication.
- An approximation of the right and left pillar of the crus using nonabsorbable sutures is made in order to restore the synergistic action of the diaphragm with the LES and to avoid recurrent herniation of the stomach.
- A bougie is used to avoid a fundoplication that is too tight and postoperative dysphagia.
- Total vs Partial fundoplication
Surgical technique

- https://www.youtube.com/watch?v=j9Dewvv6ldk

What if surgery fails?

- Laparoscopic reoperative antireflux surgery is feasible, safe, and effective but has higher complication.

  - Outcomes
    - A. Typical symptoms of GERD improve
    - B. Barrett’s esophagus, elderly patients, and patients with and without preoperative esophagitis.
    - C. Cough, Hoarseness, sore throat, aspiration, asthma, wheezing been shown to significantly improve - 93%

Complications

- 2.4-24%
- Gastric and/or Esophageal perforation 0-4%
- Pneumothorax 0-1.5%
- Wound infections 0.2 - 3.1%
Question#4

- Which of the following would be an optimum candidate for anti reflux surgery?
  A. 50 yo with Barrett's metaplasia without GERD symptoms.
  B. 62 yo with Barrett's metaplasia with LGD.
  C. 68 yo with Barrett's metaplasia with HGD
  D. 72 yo otherwise healthy male with nodular dysplastic lesion just above the GE junction.

Answer#4

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Barrett's esophagus

- Antireflux surgery may be performed in Barrett's without dysplasia, CIS or neoplasia.
- Does not alter the need for continued surveillance endoscopy
Paraesophageal Hernia

- All symptomatic paraesophageal hiatal hernias should be repaired.
- Routine elective repair of completely asymptomatic paraesophageal hernias.
- Acute gastric volvulus requires reduction of the stomach with limited resection if needed.
- Repair should be reserved for patients with symptoms of gastric outlet obstruction, those with severe GERD or anemia, and those with possible gastric strangulation.

Incidental Hernias

- During operations for Roux-en-Y gastric bypass, sleeve gastrectomy and the placement of adjustable gastric bands, all detected hiatal hernias should be repaired.
- Better outcome.

Surgical technique

- https://www.youtube.com/watch?v=j9Dewvv6dk
Post Op

- Postoperative nausea and vomiting should be treated aggressively to minimize poor outcomes.
- Gastric distension should be recognized and managed early.
- NG vs G-tube.
- Early postoperative dysphagia rates are up to 50%.
- Most patients will lose 10-15 pounds.
- Weight loss >20 lb or persistent dysphagia should be investigated.

Quality of life after NF

- Retrospective analysis of all patients who underwent LNF for GERD between January 2004 and January 2016.
- One hundred and seventy-five (77.1%) of the 227 operated patients returned the questionnaire. The median follow-up was 3.7 (0.1-10.3) years.
- Re-operation rate was 13.6% either due to Recurrent GERD or dysphagia.
- Median total score of 70.

Summary

- Hiatal hernia can be diagnosed by various modalities.
- All symptomatic paraesophageal hiatal hernias should be repaired.
- All detected hiatal hernias should be repaired if detected during BS.
- Attention should be paid to adequate caloric and nutritional intake post operatively.
- Aggressive control of post op nausea, vomiting and gastric distension.
Thank you