

What is new in reflux world

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Learning objectives

- 1 describe the pathophysiology of reflux
- 2 describe what is new in armamentarium to tackle reflux
- 3 describe what can be done in a small hospital setting

What is Gastroesophageal Reflux Disease (GERD)?

- An abnormal lower sphincter muscle allows stomach contents to back up into the esophagus.
- GERD can be caused by hiatal hernia, obesity, pregnancy, medications & smoking as well as other conditions.



Normal LES valve keeps food in the stomach.



Weak LES valve allows food to wash back into the esophagus

What are the symptoms of GERD?

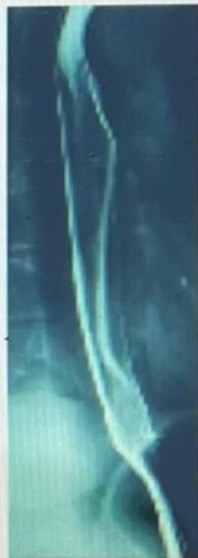
- Heartburn & regurgitation
- Difficulty swallowing
- Dry or chronic cough
- Wheezing
- Asthma
- Recurrent pneumonia
- Nausea & vomiting
- Sore throat (laryngitis)
- Painful swallowing
- Chest or upper abdomen pain
- Dental erosion & bad breath

How is GERD diagnosed?

- Talking about your symptoms
- A trial of acid suppression medication
- Upper endoscopy (biopsy)
- Manometry
- Acid study
- Barium swallow x-ray



Flexile fiber, small brush and third instrument used in endoscopy.



Barium swallow image of the esophagus.

What are the treatment goals of GERD?

Prevent ongoing injury to:

- Esophagus
- Oropharynx
- Tracheobronchial tree
- Lungs

Alleviate symptoms of:

- Heartburn
- Regurgitation
- Food intolerance
- Cough
- Hoarseness
- Asthma

Medical Treatment of GERD

- Diet and lifestyle changes:
 - Avoid spicy and acidic foods
 - Avoid caffeine, alcohol & chocolate
 - No eating for several hours before bed
 - Keep head elevated while in bed
- Acid suppression medication to relieve heartburn
- Medications to speed digestion provide limited benefit

Problems with medical therapy for treating GERD?

- Mostly directed at reducing acid
 - It's normal to have acid in stomach
 - Lack of acid can limit absorption of calcium and iron
 - Medication has side effects
 - Bile/non-acid reflux may cause damage & symptoms
- Does not address primary cause of reflux
 - Inadequate lower esophageal function
 - Hiatal Hernia
 - Regurgitation
- Provides only 70% overall symptom control
- Drug resistance can develop

How does surgical therapy treat GERD?

- Directed at eliminating reflux
 - Improves lower esophageal sphincter pressures
 - Prevents acid and non acid/bile reflux
- Repair of the hiatal hernia
 - Improves esophageal function and stomach emptying
- Leaves normal acid production intact
- Greater than 90% elimination of reflux
 - Not only is heartburn gone, but other symptoms as well

What are the indications for the surgical treatment of GERD?

- When lifestyle is limited
 - The patient cannot be as active
 - Unwilling to take medication (Proton Pump Inhibitors, PPI) during pregnancy
 - Eating late or acidic foods
- When medical therapy fails to completely control the symptoms
- When complications occur
 - Barrett's esophagus
 - Esophageal stricture
- When a patient cannot afford medication any longer

What are the signs that medical therapy for GERD has failed?

- Poor acid suppression
 - Increased dosage or change of medications needed
- Bland reflux causes symptoms
- Bile reflux
- Stricture (tightening of the esophagus)
- Patient does not have GERD

What are the pre-operative considerations for the surgical treatment of GERD?

- Best results when:
 - There is a good initial response to acid suppression
 - Typical symptoms are present
 - An abnormal acid study
- Good response to medical therapy does not always last
- Results of surgery for GERD with atypical symptoms are not as good

What are the pre-operative tests for the surgical treatment of GERD?

Endoscopy (EGD) – a test that examines the lining of the esophagus with a scope

- Proof
 - Inflammation of the esophagus (esophagitis)
 - Biopsy
- Complication
 - Stricture (narrowing or tightening of the esophagus)
 - Barrett's Epithelium (BE) - biopsy if present



What are the pre-operative tests for the surgical treatment of GERD?

Acid study

- The definitive test for acid reflux
- Necessary only if there is no severe esophagitis
 - If needed to prove acid reflux
 - Measures the amount of time the acid is in esophagus
 - If patient has all atypical symptoms
- False negative studies can happen

What is an impedance study?

- Measures presence of fluid in esophagus
- Confirms direction of the flow (swallowed versus reflux)
- Also measures acid
- Measures how high up in esophagus reflux goes
- The best overall study for documenting reflux
- Requires a catheter through the nose

What are the pre-operative tests for the surgical treatment of GERD?

Esophageal manometry

- This is mandatory before surgery
- Rules out other problems as cause of symptoms
 - Such as spasm or achalasia (failure of smooth muscle fibers to relax)
 - Helps to determine the best surgical procedure

What is the pre-operative evaluation for the surgical treatment of GERD?

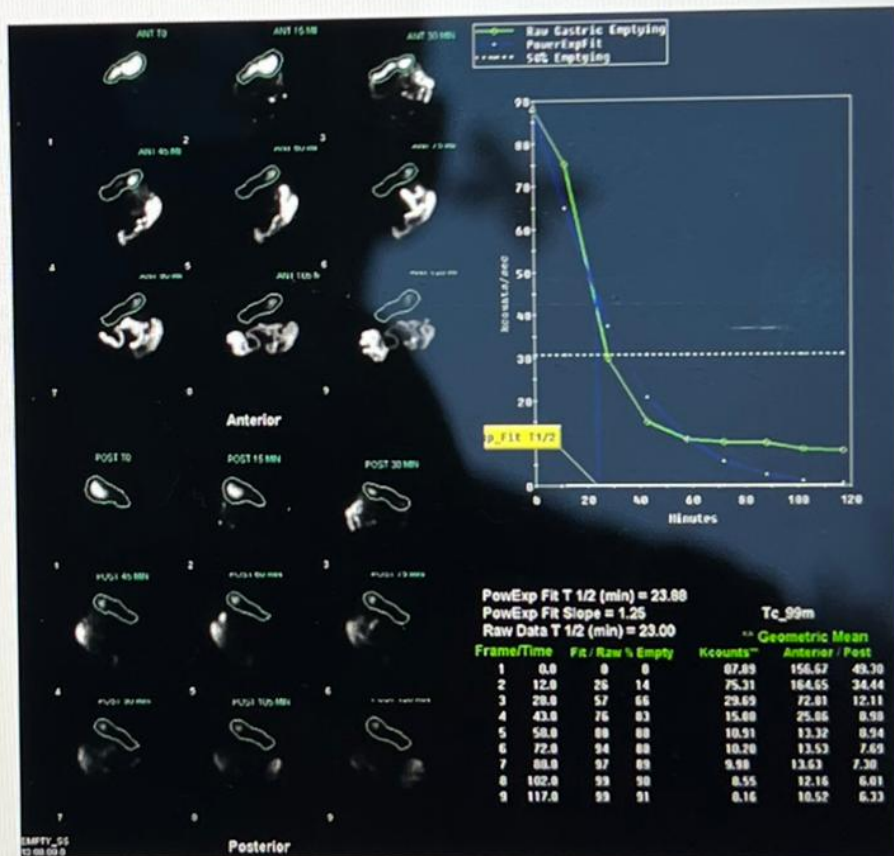
Barium study

- Swallow liquid under an x-ray
- Identifies a dilated esophagus
- Identifies a hiatal hernia
- Is usually not necessary if there is a good endoscopy
- Not very accurate to detect reflux

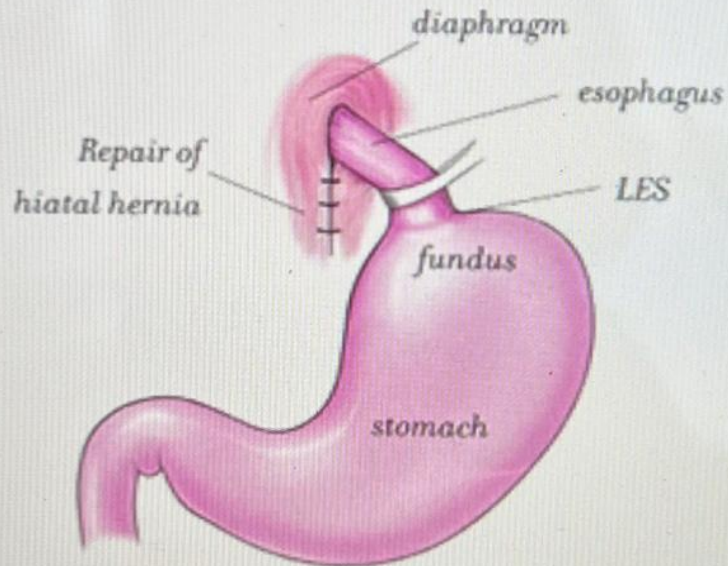


What is a gastric emptying study?

- Eat a labeled meal
- Camera follows how much of the meal stays in stomach
- Delayed stomach emptying can cause GERD



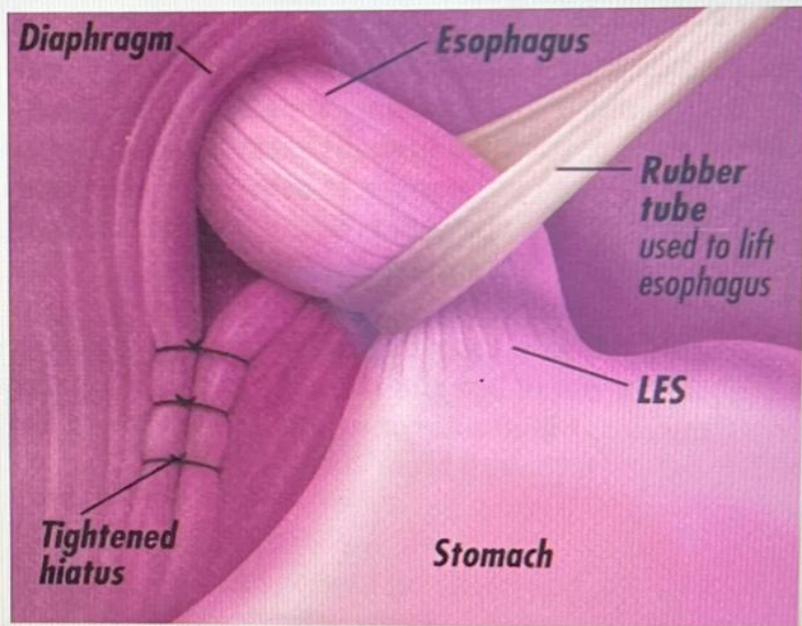
Surgical treatment of GERD



A repair of a hiatal hernia by suturing the diaphragm

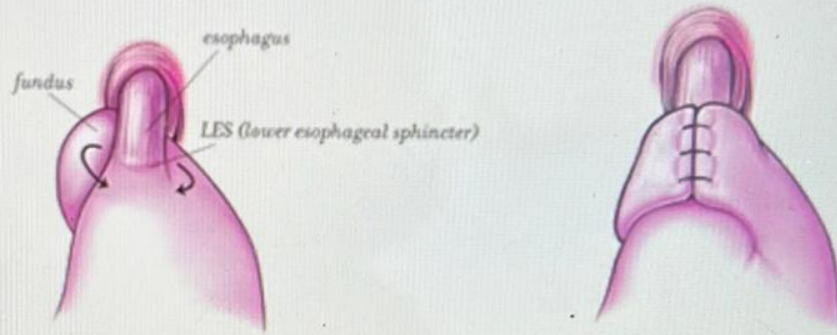
Surgical technique for the treatment of GERD

- Reduce the hiatal hernia
- Insure a segment of intra-abdominal esophagus
- Close the diaphragm posteriorly



Surgical technique for the treatment of GERD

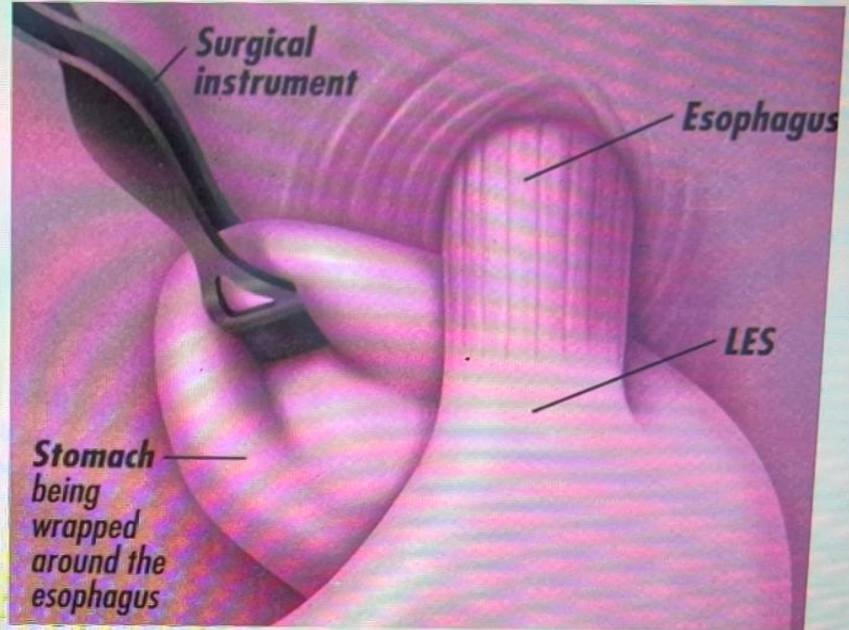
- Reinforce esophageal sphincter muscle using top of stomach
- This is called fundoplication



The fundus (top of stomach) is wrapped around the esophogastric junction (the connection between the stomach and the lower esophagus).

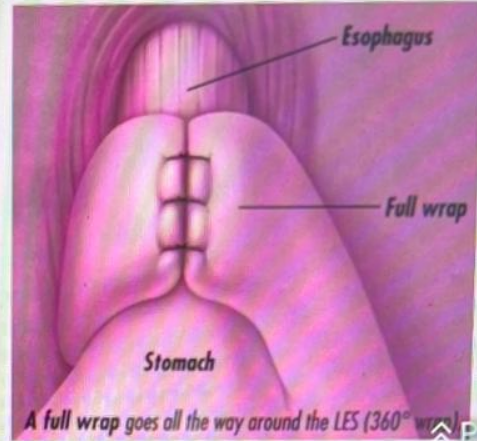
Surgical technique for the treatment of GERD

- Window posterior to the esophagus
- Wrap the mobilized fundus posteriorly around the esophagus from left to right



What are the different types of fundoplication?

- Nissen fundoplication
 - 360 degree wrap
 - Best long term results
 - May have more side effects
- Toupet fundoplication
 - 270 degrees behind the esophagus
 - Excellent results
 - Less side effects
- Dor fundoplication
 - 180 degree anterior wrap



⌘ Pull up for precise seeking



Surgical techniques for the treatment of GERD

Minimally invasive laparoscopic approach
Laparoscopic fundoplication
Laparoscopic esophagectomy
Laparoscopic esophagectomy



NEWER TECHNIQUES

TIF

ARMS

ARMA

STRETTA

LINUX

<https://www.youtube.com/watch?v=nYJPBCcyc5w&list=PLMikYZwu7SrcmJRuUxMNwLD9ZfdCCjqWE&index=6&pp=gAQBiAQB>

TIF

https://www.youtube.com/watch?v=B4uv-cYNKpY&list=PLMikYZwu7SrcmJRuUxMNwLD9ZfdCCjqWE&index=4&pp=gAQBiAQ_B

LINUX

https://www.youtube.com/watch?v=Qh_WNhW_KNo&list=PLMikYZwu7SrcmJRuUxMNwLD9ZfdCCjqWE&index=7&pp=gAQBiAQ_B

ARMS

Anti Reflux
Mucosectomy
(ARMS) for
Gastro-
Esophageal
Reflux
Disease
(GERD)

TAKE HOME MESSAGE

<https://www.youtube.com/watch?v=lbsn7VhBJXE&list=PLMikYZwu7SrcmJRuUxMNwLD9ZfdCCjqWE&index=8&pp=gAQBiAQB>

<https://www.youtube.com/watch?v=cmYC8j0tMG0&list=PLMikYZwu7SrcmJRuUxMNwLD9ZfdCCjqWE&index=1&pp=gAQBiAQB>

The surgical treatment of GERD should be considered when:

- Daily recipients of medication (proton pump inhibitors):
 - Want a more complete relief of symptoms
 - Do not want to take medication any more
 - Cannot afford the medicine any longer
 - Want to get pregnant
- Barrett's Esophagus patients
- Complicated GERD patients
 - Stricture
 - Aspiration or pulmonary complications
 - Laryngeal, pharyngeal, or dental complications

When should GERD be treated surgically versus medically?

- Occasional symptoms of GERD should be treated symptomatically with lifestyle and diet change.
- Frequent or daily symptoms of GERD should be treated with continuous medication.
- Acid suppression may continue indefinitely as long as symptoms are well controlled and if patient is willing to accept side effects and vitamin/mineral issues.

OUR PROPOSAL FOR ARMA

Sent to the hospital for study feasibility

30 patients

Grant application

FRUSTRATION

PLAN B

references

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NORTH WITH THE SNOW CAPS
AND CANADA.

LOVIN' THE
CRAZY TALK,
DONALD!



NOTHING CHANGES IF NOTHING CHANGES