

Gastroesophageal Reflux Disease (GERD)



Overview

- Symptoms or mucosal damage produced by the abnormal reflux of gastric contents into the esophagus.
- 40% of American people have reflux on a monthly basis, 20% on a weekly basis, and 7% on a daily basis.
- Typical symptoms
 - heartburn
 - regurgitation
 - chronic nausea

atypical symptoms:

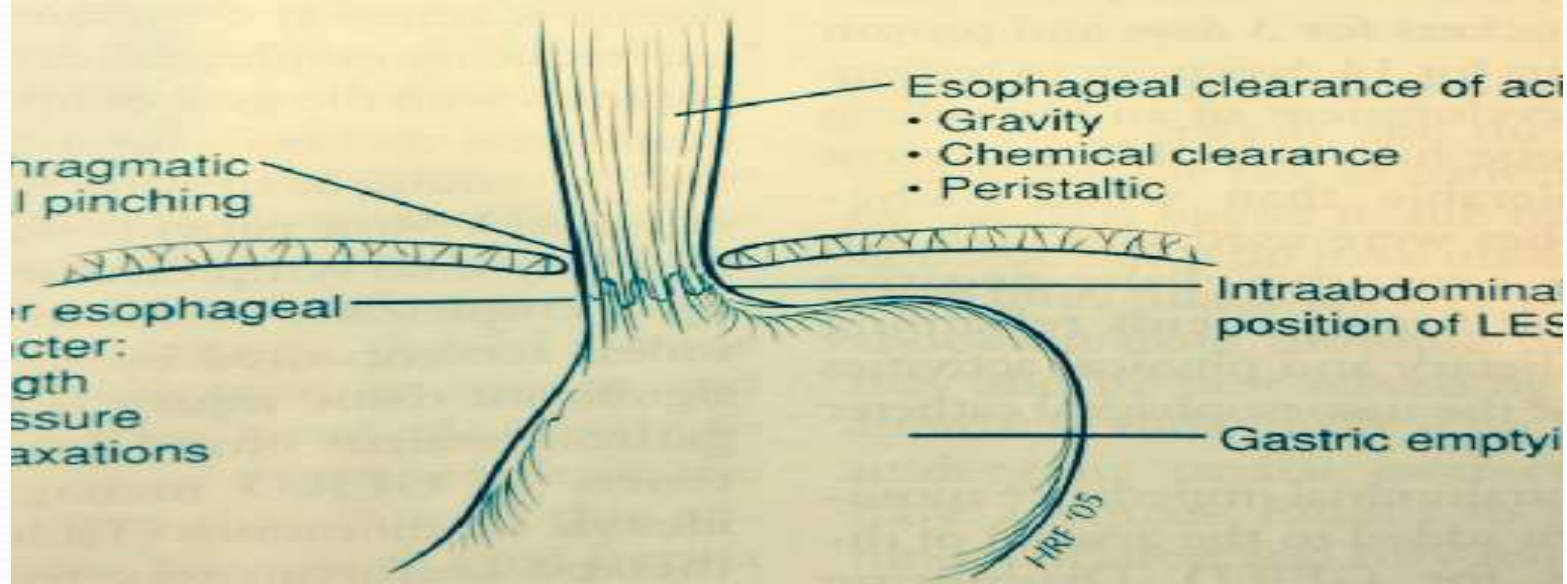
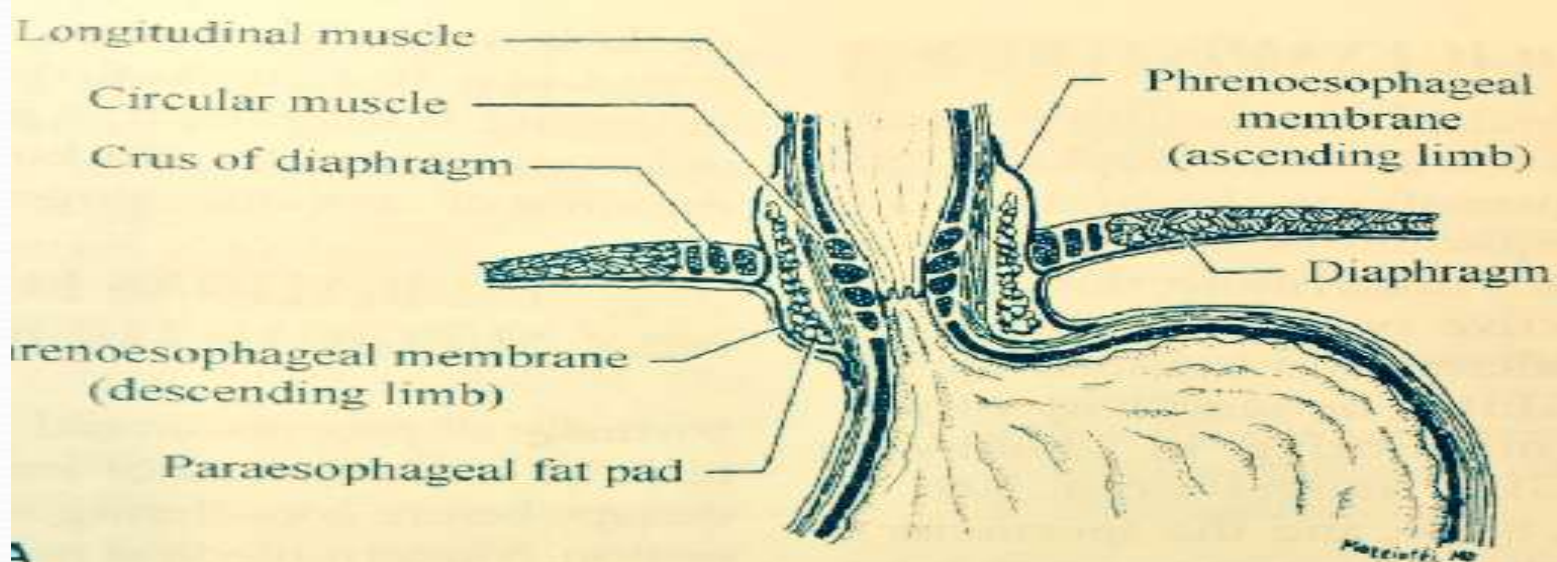
- chest pain
- dysphagia
- aspiration
- asthma
- cough
- dental erosions



Pathophysiology

- GER occurs in all healthy individuals to a limited degree.
- It is a phenomenon known as transient relaxation of LES (non swallow-initiated) events.
- Barriers:
 - tonic pressure of the LES
 - diaphragmatic crura
 - angle of Hiss
 - esophageal clearance of acid
 - gastric emptying
 - intraabdominal portion of the esophagus





1. Gastroesophageal junction (GEJ) Anatomic component



Pathophysiology

- The progressive mucosal inflammation will lead to more LES dysfunction and further reflux.
- Also it may lead to esophageal dysmotility that may prevent normal esophageal clearance.
- 60% of GERD pts will have normal mucosa at endoscopy.
- Barrets esophagus occurs in 10%.
- Barrets increases the risk of malignancy 40-100 folds.



Diagnosis

- Function of the esophageal body (pump):
 - gravity
 - saliva
 - peristalsis
 - Function of the stomach (reservoir).
 - Function of the sphincter.
- * So any pathology of these parts may lead to reflux and preoperative testing of these parts is important



Diagnostic testing

- Anatomic delineation:
 - endoscopy+-biopsy
 - Ba swallow
- Physiologic examinations:
 - 24-h PH monitoring
 - esophageal manometry
 - scintigraphy(esophageal and gastric emptying study)



Preoperative testing

- History of recurrent heartburn is usually adequate for Dx of GERD and initiate medical therapy.
- Indications for investigations:
 - persistent symptoms
 - symptoms and signs indicating severe tissue injury like dysphagia, anemia, positive occult blood
 - uncertain diagnosis
 - before surgery



Anatomic delineation

- Endoscopy:
 - In pts with typical symptom endoscopy is the minimal diagnostic evaluation.
 - mandatory for pts before surgery.
 - pts with persistent or severe GERD should have at least one endoscopy to assess mucosal status.
- Barrets esophagus with severe dysplasia treatment is resection rather than antireflux surgery as it has 50% chance of Ca.

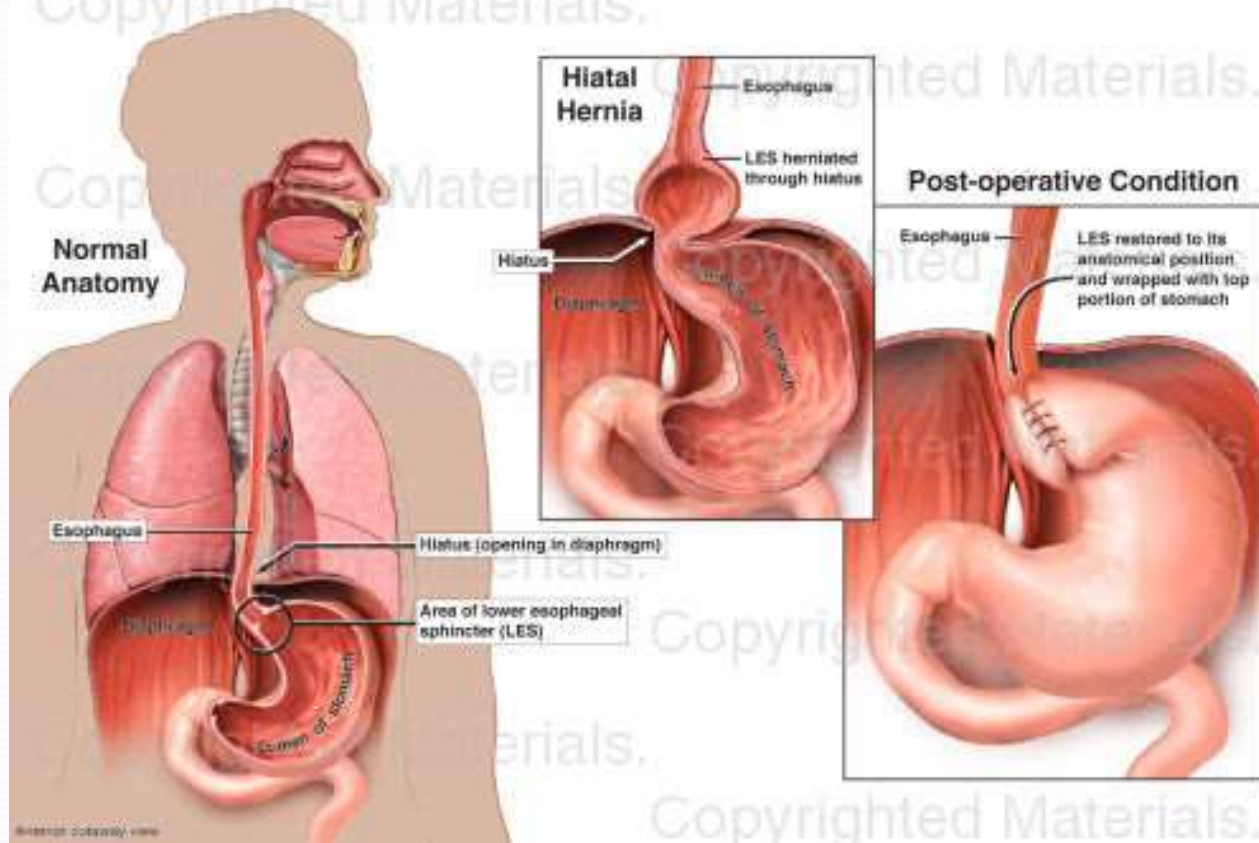


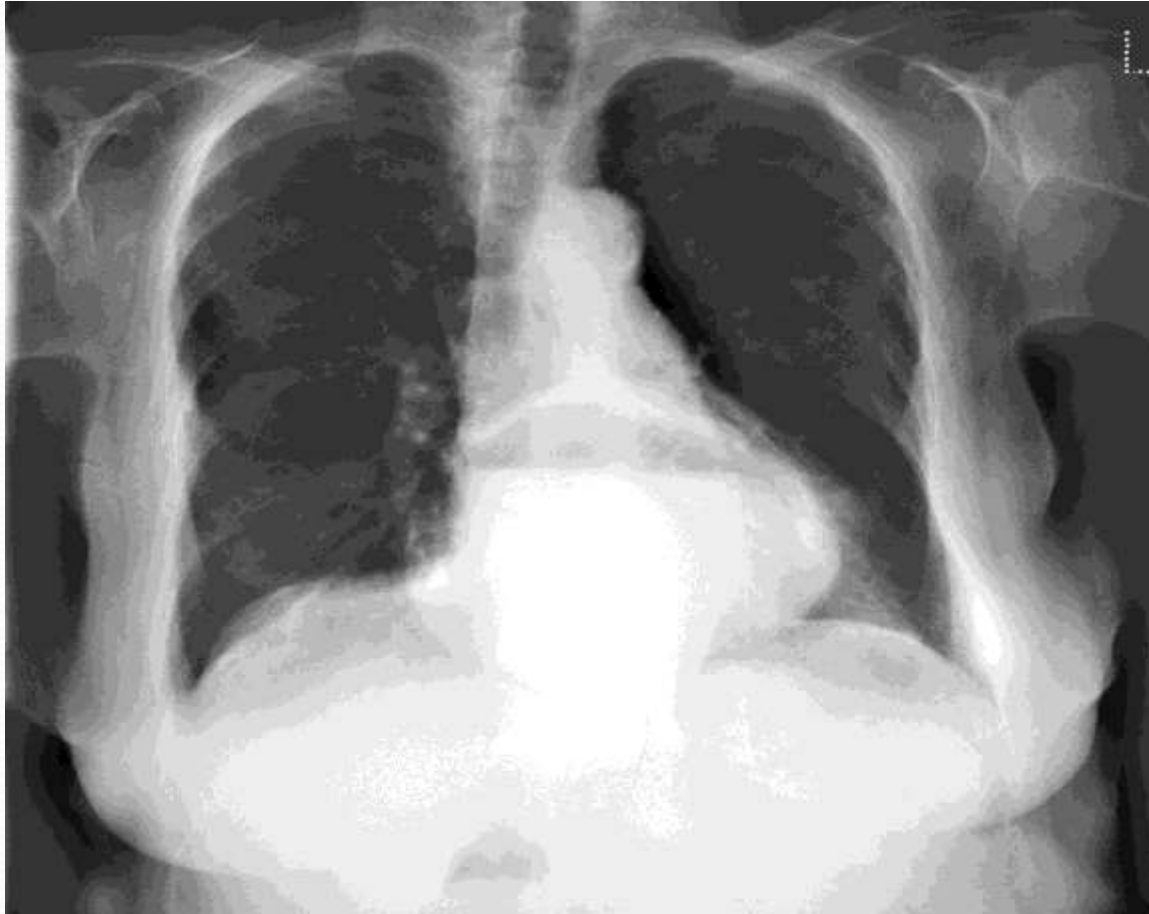
Anatomic delineation

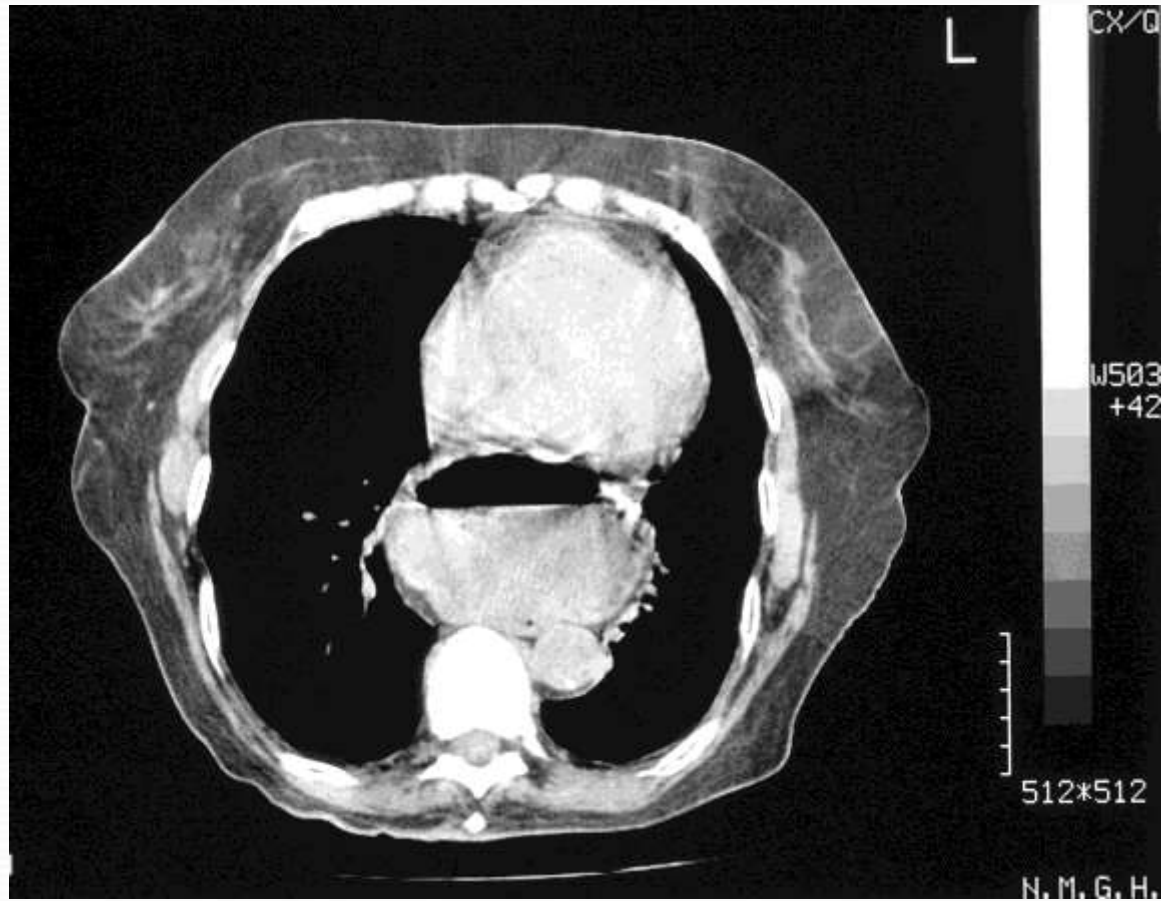
- Ba swallow:
 - to assess the size and type of associated HH
 - types of HH
 - to localize precisely the GEJ in relation to the hiatus
 - to assess the peristalsis of the esophagus



Surgical Treatment of Hiatal Hernia







Physiologic examination

- 24-h PH monitoring:
 - informative but not mandatory in pts with typical symptoms and esophagitis
 - indicated in:
 - * atypical symptoms
 - * absence of esophagitis
 - * atypical response to medical treatment



Physiologic examination

- shows the number and duration of reflux of episodes
- differentiate between upright and supine reflux
- procedure
- sensitivity 50-100% with higher specificity
- should stop H₂ blockers 3 days, PPI 14 days before the test
- some reflux are mixed alkaline, non acidic, low acidic



Physiologic examination

- Esophageal manometry:
 - mandatory preoperatively
 - assessment of the sphincter status and quality of esophageal peristalsis.
 - tailoring of the procedure depending on the pump function (esophagus)



Physiologic examination

- Scintigraphic gastric emptying:
 - for pts with significant nausea and vomiting.
 - in severe diabetes.
 - if gastric delay is significant addition of pyloroplasty to antireflux procedure may be mandatory.



Treatment

- Recent development of MIS has lowered the threshold for surgical treatment.
- Despite of prove that surgery is more effective in complicated reflux, many prefer medical therapy over open surgery to avoid laparotomy.
- In 1991 Dallemagne did the first LNF and it was revolution in the treatment of this pathology.
- All pts should receive intensive medical therapy (2 months) before considering surgery
- Life style modifications:



Indications for surgery

- complications of reflux not responding to medical treatment
- symptoms interfering with lifestyle despite medical therapy
- presence of paraesophageal hernia
- chronic reflux requiring continuous medical therapy (financial and pt's desire, young age)
- intolerance to medical therapy



Indications for surgery

- features suggestive of poor response to medical therapy detected by preoperative testing, so early surgery is indicated:
 - * markedly hypotensive LES
 - * severe erosive esophagitis
 - * Barrett esophagus (controversial), indicate long standing reflux.

Surgery is preferable option, it decrease intestinal metaplasia in 35% of pts and regression of low grade dysplasia in 75% of pts.



Contraindications for surgery

- Presence of comorbidities
- Coagulopathy
- Poor response to medical treatment?
- Obesity ?
- Previous upper abdominal surgery ?



Basic surgical steps

- Restoration of an effective LES
- Get a good length of intraabdominal esophagus
- Excision of the sac
- Wrapping of the esophagus with the fundus
- No tension (migration of wrapp)
- Reconstruction of crura over tube (56-60 Fr)



Choice of approach

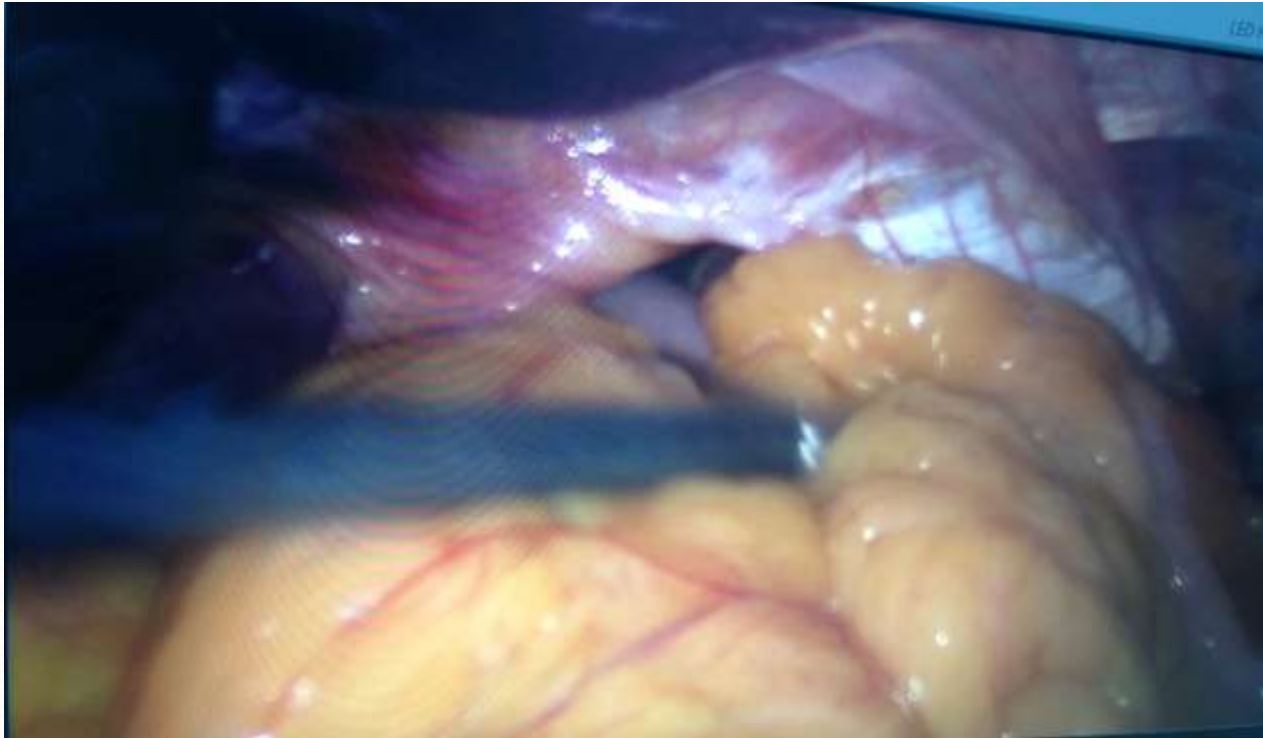
- Transabdominal vs transthoracic
- Complete versus partial wrap
- Using mesh or not
- Short esophagus (lengthening procedure)
- Pts with esophageal dysmotility (partial wrap)
- Presence of dysplasia (resection)



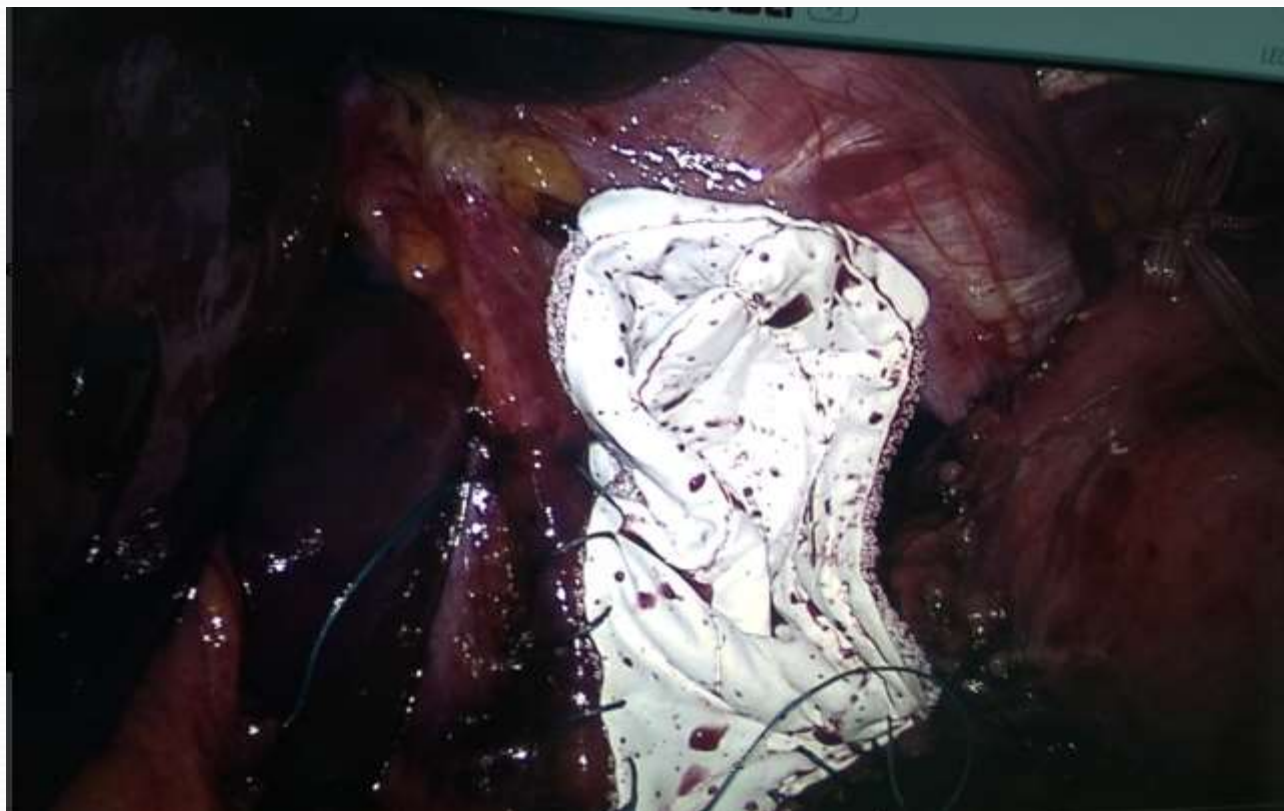
complications

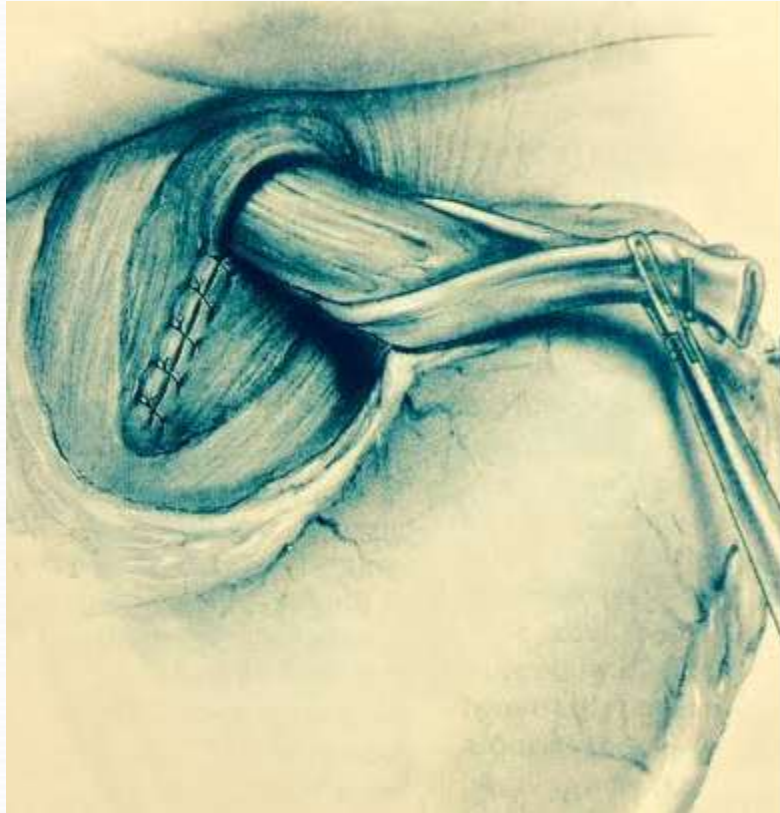
- Dysphagia (early 10-90%, late 5-10%)
- Gas bloating syndrome
- Inability to belch
- Flatulence
- Failure 5-10%
- migration

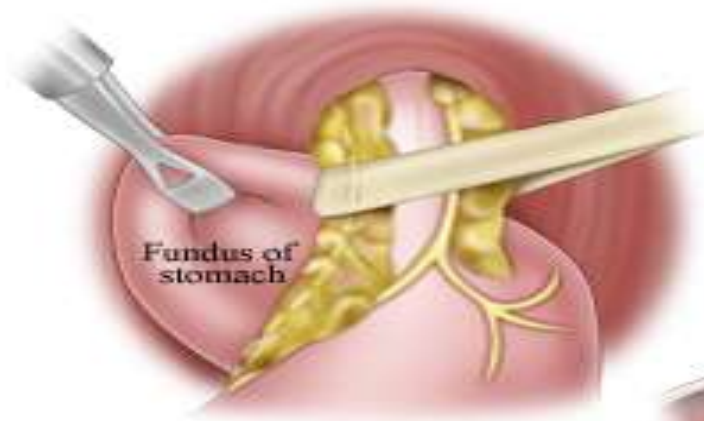












Nissen Fundoplication

