

# **Gastro-oesophageal reflux disease and Hiatal Hernia**

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- A 40 year old man is referred to you for consideration of antireflux surgery.

# Definition

- “a condition which develops when the reflux of stomach contents causes troublesome symptoms and/or complications”

# Pathophysiology

- Mechanical disorder caused by a defective lower oesophageal sphincter (LOS), a gastric emptying disorder or failed oesophageal peristalsis
- Key components of antireflux barrier incompletely understood
  - LOS, crura, Phreno-oesophageal ligament, sling fibres of cardia, transmitted pressure of abdominal cavity

# Symptoms

- 'Heartburn'
- Regurgitation
- Dysphagia
  - Stricture
  - Solids vs liquids
- Extra-oesophageal
  - Cough
  - Hoarseness
  - Aspiration
  - Wheeze

- A 40 year old man is referred to you for consideration of antireflux surgery. He gives a history of 10 years of increasingly troublesome heartburn though now it is reasonably well controlled on a PPI once a day.

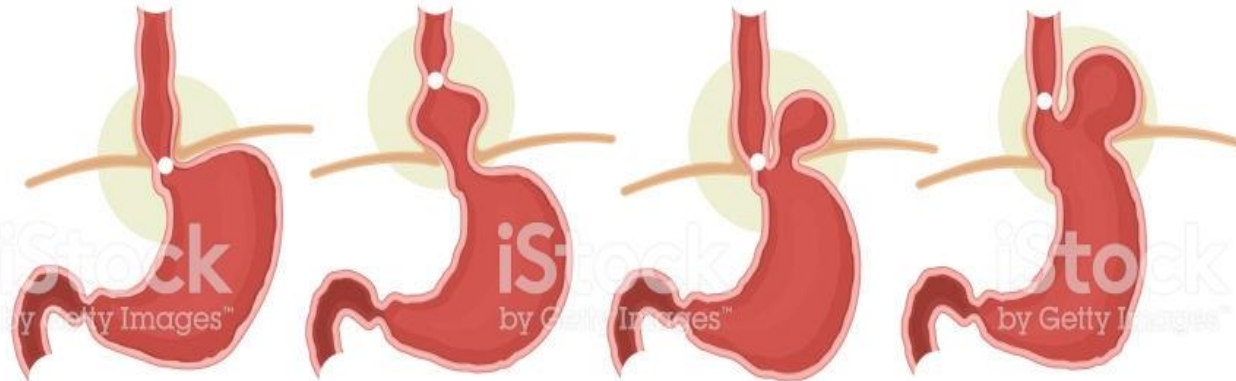
# Investigations

- Endoscopy
  - ESSENTIAL
  - Mucosal break (oesophagitis)
  - Complications (Barrett's, stricture)
  - Hiatus hernia
- pH study
  - Gold standard in absence of endoscopic evidence
  - Total time with pH <4 5cm above LOS
  - Composite score (total acid exposure time, upright acid exposure time, supine acid exposure time, number of episodes of reflux, number of episodes >5 mins, duration of longest episode) = DeMeester score

- Esophageal manometry
  - Advocated by experts to exclude achalasia or modify type pf wrap
  - No support in literature
- Barium Swallow
  - For delineation of anatomy esp hiatal hernia
- Multi channel oesophageal impedance
  - Insufficient evidence



# TYPES OF HIATAL HERNIA



NORMAL  
ESOPHAGUS  
AND STOMACH

HIATAL HERNIA  
**Type 1**  
*(sliding)*

HIATAL HERNIA  
**Type 2**  
*(rolling)*

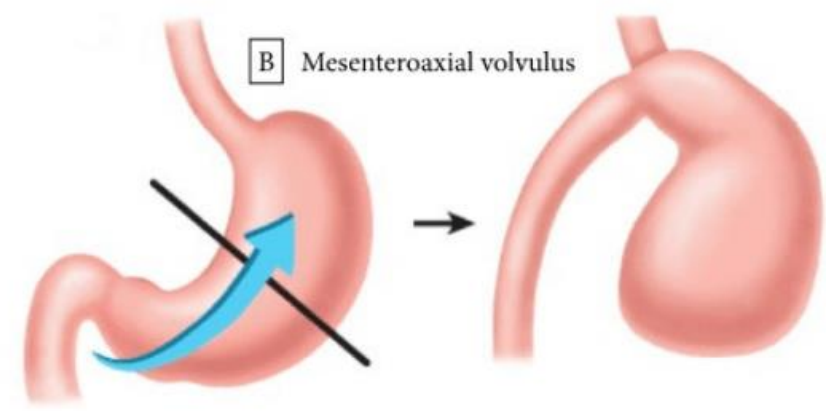
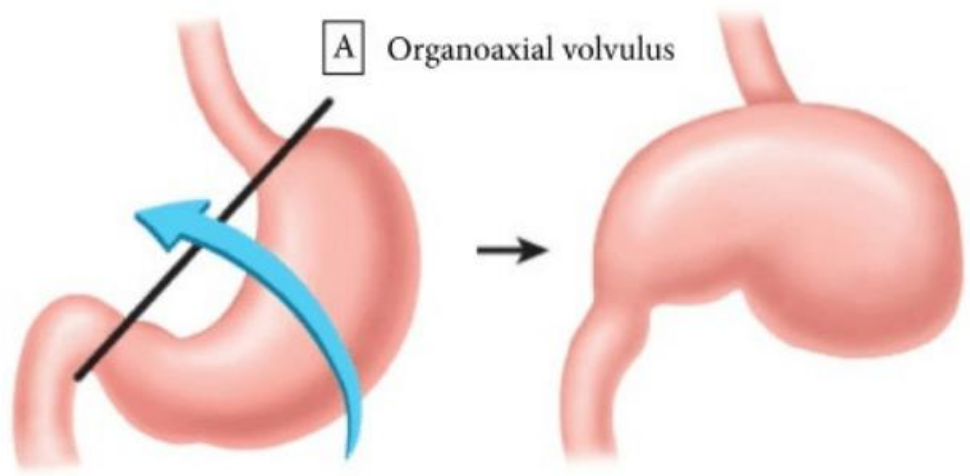
HIATAL HERNIA  
**Type 3**  
*(mixed)*

# Hiatus Hernia types

- Type 1 – sliding
  - most often assoc with reflux
  - 95% of hiatal hernias
- Type 2 – rolling
  - Least common
- Type 3 – mixed
  - Most common
- Type 4 – complex (other structures)

# Gastric volvulus

- Rare
- Most commonly associated with paraesophageal HH
- Classified according to the axis of rotation; organoaxial (most common) and mesenteroaxial



- Elderly patients.
- Progressive chest pain, severe vomiting, and epigastric distention
- Borchartt's triad, severe epigastric pain, unproductive retching, and inability to pass a nasogastric tube, represent total gastric obstruction

- A 40 year old man is referred to you for consideration of antireflux surgery. He gives a history of 10 years of increasingly troublesome heartburn though now it is reasonably well controlled on a PPI once a day. A gastroscopy performed whilst he was on a PPI revealed a small hiatus hernia, but no macroscopic oesophagitis.

# Medical vs surgical treatment

- Seven RCTs with follow-up up to 10 years
- Surgery is an effective alternative for patients with good symptom control and partial symptomatic relief on PPI
- Improved or comparable quality of life
- Off medication in 79-91% at 8 years

# Indications

- 1) Have failed medical management
- 2) Opt for surgery despite successful medical management
- 3) Have complications of GERD (Barett's, peptic stricture)
- 4) Extra-oesophageal manifestations (asthma, hoarseness, cough, aspiration)



# Indications Hiatal Hernia

- Repair of a type I hernia in the absence of reflux disease is not necessary
- All symptomatic para-oesophageal hiatal hernias should be repaired (particularly those with acute obstructive symptoms)

- Routine elective repair of completely asymptomatic para-oesophageal hernias may not always be indicated
- Acute gastric volvulus requires reduction of the stomach with limited resection if needed

# By who

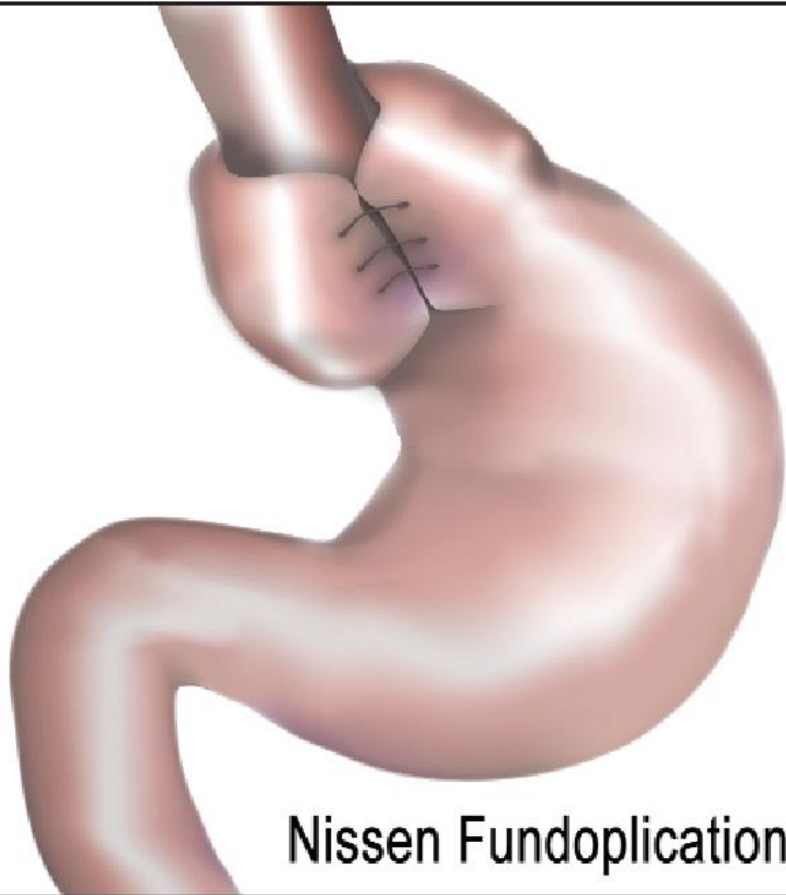
- Subject to learning curve
  - Poorer outcomes from inexperienced surgeons
  - Supervision of first 15-20 cases or appropriate training

# How

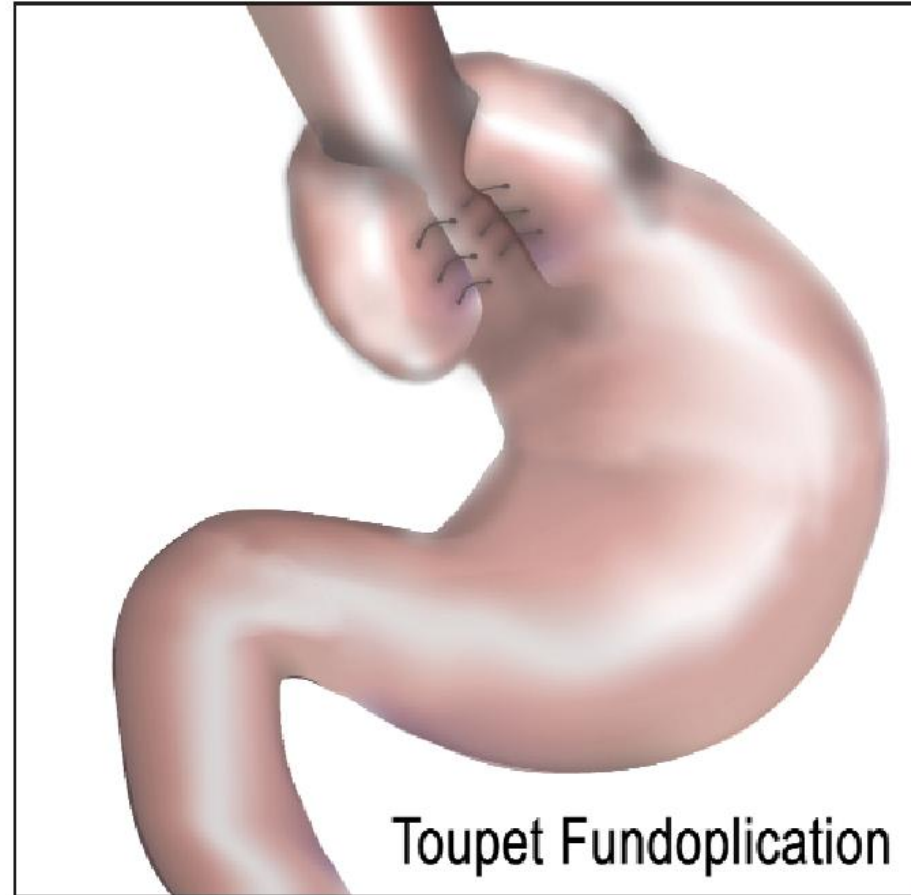
- Lap preferred to open
  - Superior outcomes and less complications
- Reduce any hernia and excise sac
- Crural repair +/- mesh
- Aim for 2-3cm intra-abdominal oesophagus



**Figure 1.**  
**Nissen Fundoplication**



**Figure 2.**  
**Toupet Fundoplication**



- Partial vs total

- No differences in perioperative morbidity
- Total higher postop dysphagia, bloating, flatulence and reoperation rate
- No difference in oesophagitis, heartburn, reflux, or patient satisfaction

- Tailored approach unwarranted

- Division of short gastrics not necessary

- Oesophageal bougie of 56Fr leads to decreased dysphagia
- In the morbidly obese BMI >35
  - Gastric bypass should be the procedure of choice



# Who

- Compliance with antireflux medications
  - Increased improvement in quality of life
- Age
  - No difference in outcomes apart from pts >65 longer LOS
- Post op diaphragmatic stressors
  - Early gagging, belching and vomiting predispose to failure

- Major depression shown to negatively impact postoperative quality of life
- Atypical symptoms respond less well to fundoplication
  - Best predictor of success is good symptom correlation with reflux episodes on pH monitoring
- Response to preoperative PPI excellent predictor

# Post operative

- Aggressive antiemetics as postop nausea and vomiting associated with poorer outcomes
- Progressive diet over 6 weeks (fluids, pureed, mashed/minced, solids)
- Severe dysphagia, severe abdominal or chest pain, fever

# Outcomes

- Effective treatment for typical symptoms (90% 3 yr, 67% 7 yr) with improvement in dysphagia, heartburn and regurgitation
- Atypical symptoms improve in the majority but less so than typical
- Inconclusive evidence about resolution or improvement of Barrett's