Surgical Management of GERD

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Objectives

• Which antireflux operation?
• Should GT be placed routinely at the time of fundoplication?
• Should fundoplication be performed at GT placement?
  – Neurologically impaired pts
  – Normal pts
• Surgical options for failed fundoplication?
GERD procedures

- **Nissen**
  - Gold standard, full 360° wrap
  - Best antireflux control
  - Caution in dysmotile esophagus (e.g., TEF)

- **Collis-Nissen, Rosseti**

- **Toupet**
  - 270° wrap
  - Less dysphagia but less GE reflux control

- **Thal**
  - Anterior 180° wrap
  - Rarely used
  - Ineffective operation
Newer Endoscopic Therapies

• Injections
  – Thicken wall of distal esophagus
• Radiofrequency Ablation
• Transoral incisionless fundoplication (TIF)

** Not well-studied, not universally applied in children
Operative Approach

- **Open**
  - Previous laparotomies, anatomic deformities
  - Certain patient populations may not tolerate pneumoperitoneum

- **Laparoscopic**
  - Less pain
  - Faster postoperative recovery
  - Lower incidence of adhesive small bowel disease

- **Robotic**
  - Improved visualization and articulation of instruments
  - Limited by size of platform
Fundoplication & Gastrostomy

- laparoscope 30°
- trocars (4-5) 3.5-5mm
- liver retractor, graspers
- cautery, needle holder
- sutures on ski needles
- Bougie/NGT
- gastrostomy kit
- operating time ~1.5 hr
- hospital stay 2 days
Laparoscopic Fundoplication
Nissen Fundoplication

- standard 360° wrap, especially in neurologically impaired patients
- better control of reflux, but higher incidence of dysphagia
Toupet Fundoplication

- posterior 270° wrap
- less dysphagia
- higher failure rate of reflux control, especially in neurologically impaired patients
Gastrostomy

- Mickey-, Mini-button
- MIC
- Pezzer, Malecot
- Bard GT button
- GJ tube
- PEG
GT buttons
Gastrostomy
Pezzer (Malecot) GT
MIC G-Tube
Bard GT button
Complications

• Recurrent GERD
  – Must evaluate for infection, poor swallowing, impaired esophageal emptying, overfeeding, slow/rapid gastric emptying

• Gas-bloat
  – Related to delayed gastric emptying
  – Reverse with prokinetic agents or gastric drainage procedure

• Dumping syndrome
  – Eliminate dissacharides, do small volume or continuous feeds

• Paraesophageal hiatal hernia

• Small bowel obstruction
Failed Fundoplication

• Etiology
  – Floppy wrap
  – Slipped wrap
  – Unwrap

• Surgical challenges
  – Vagal nerve injury -> pyloroplasty
  – Esophageal perforation

• Outcomes
Hiatal closure
Pyloroplasty
Summary

• Which antireflux operation? **Nissen**
• Should GT be placed routinely at the time of fundoplication? **No**
• Should fundoplication be performed at GT placement? **Not routinely**
  – Neurologically impaired pts: **more likely**
  – Normal pts
• Surgical options for failed fundoplication? **Re-do wrap**
Case 1

• 6 mo M, 7 kg s/p Glenn procedure for HLHS
• Fed continuously via NJ tube
Case 2

- 7 yo M with cerebral palsy
- Is not gaining weight
- Has been on H2 blocker for years