

Evaluation of Recurrent Reflux After Failed Fundoplication

Steve DeMeester, MD

Thoracic and Foregut Surgery, The Oregon Clinic

No disclosures

Evaluation of Recurrent Reflux After Failed Fundoplication

- Is it really reflux?
 - What are the symptoms? Are they persistent, recurrent or new?
 - Heartburn? Could it be esophageal distension related to the fundoplication? Does belch relieve it?
 - Regurgitation? Is it bland or bitter? Esophageal outflow obstruction rather than reflux?
 - Dysphagia? Tight fundoplication or crural closure rather than recurrent hernia or slipped / misplaced fundoplication?
 - Timing of the symptoms: early vs late
- Has the fundoplication failed?
 - Three types of failure after a fundoplication:
 - Anatomic
 - Functional
 - Symptomatic

Symptoms Often \neq Reflux

- Patients with GERD often have a variety of symptoms
- A fundoplication only addresses symptoms related to GERD
- Study of 86 patients with symptoms after a fundoplication*
 - Primary symptom: Hb (43%), dysphagia (14%), epigastric pain (12%), chest pain (9%), regurgitation (6%), cough (4%), other (12%)
 - 43% taking acid suppression medications for their symptoms
 - Median interval from surgery to evaluation was 18 months
 - All patients had pH study, only 23% showed increased esophageal acid exposure)
 - High likelihood of abnormal pH test when fundoplication abnormal on EGD

*Lord RV, et al. *J Gastrointest Surg*, 2002

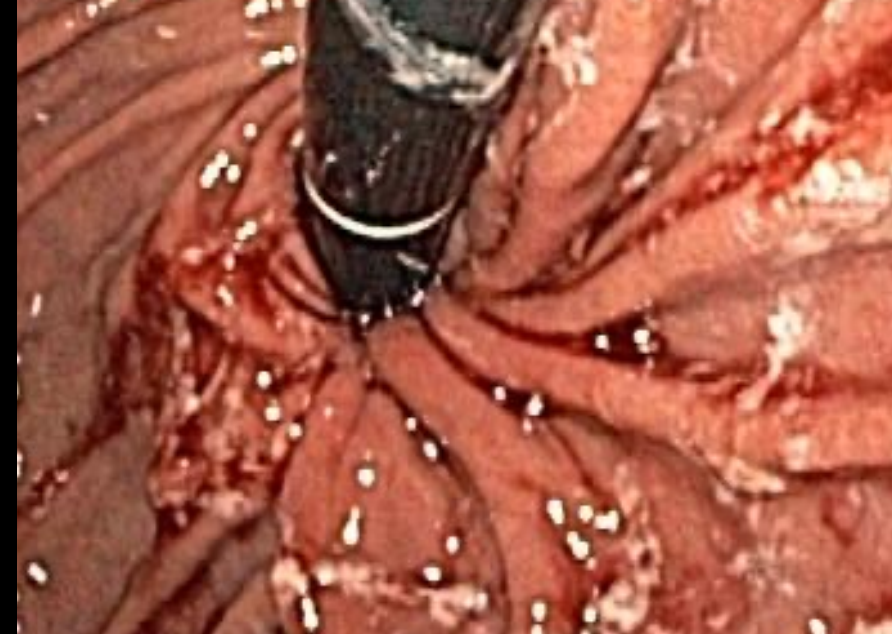
EGD Evaluation of a Fundoplication

- Esophagitis?
- Location of the GEJ relative to the pinch of the fundoplication?
 - Should be aligned or close, gap between them suggests “slipped” fundoplication
- Difficulty passing scope through fundoplication?
- Appearance on retroflex:
 - Symmetric?
 - Recurrent hernia?
 - Excessive bulk of the fundus?
 - May suggest low or slipped fundoplication

Intact Fundoplication



Anatomic Failure



Slipped, herniated or disrupted fundoplication

Functional Failure

- Intact or perhaps slightly loose appearing fundoplication but increased esophageal acid exposure on pH testing
- Intact or perhaps slightly tight fundoplication with persistent dysphagia symptoms and evidence of esophageal outflow obstruction on physiologic testing
 - Nissen that is too long or tight
 - Nissen in patient with poor esophageal motility

Symptomatic Failure

- Normal appearance to the fundoplication on endoscopy
- Normal function by physiologic testing
 - No increased esophageal acid exposure by pH testing
 - No esophageal outflow obstruction by UGI with barium tablet or by HRM
- Persistent troublesome symptoms that were “expected” to improve with the fundoplication leaving patients dissatisfied
 - More likely with extra-esophageal symptoms
 - Cough
 - Chest or epigastric pain
- Severe troublesome post-fundoplication side-effects
 - Bloating, diarrhea

My Algorithm for Evaluation of Post-Fundoplication Symptoms

- Early dysphagia: reassurance unless severe then EGD ± dilation
 - Early dilation may increase recurrent hernia risk
- Early heartburn / regurgitation: reassurance, drink warm tea or coffee with meals, evaluation if persists beyond 3 months
- Late heartburn / regurgitation: EGD ± Bravo pH, UGI
- Late dysphagia: UGI with barium tablet, EGD
- HRM in selected cases with dysphagia or before reoperation
- GES in selected cases or before reoperation

Treatment for Recurrence

- Much more likely to recommend reoperation for anatomic or severe functional failure than symptomatic failure
- Most common form of anatomic failure is recurrent hernia
 - Often are minimally symptomatic and pH testing confirms fundoplication is effectively controlling reflux
 - Reoperation when recurrent reflux is documented or there is new onset dysphagia or other symptoms thought to be related to the hernia
 - Review prior op note for method of hiatal closure, esophageal length, use of mesh
 - New operative plan should address likely cause of failure
 - Mesh, crural relaxing incision, Collis gastroplasty
 - Avoid the “I can do it better” approach to reoperations....remember Einstein’s definition of insanity: doing the same thing over and over and expecting a different outcome

Treatment for Recurrence

- Persistent or recurrent heartburn with abnormal pH test:
 - Acid suppression medications
 - Review original symptoms and op note
 - Consider reoperation only after an understanding of why / how the first operation failed
- Persistent or new onset dysphagia with esophageal outflow obstruction
 - Assess for esophagitis or stricture
 - Severe with malnutrition may need PEG pre-op
 - Review original symptoms and op note (mesh use, division of short gastrics)
 - HRM (compare to original if it was performed)
 - Redo Nissen versus conversion to partial fundoplication

Treatment for Symptomatic Failure

- Go slowly and carefully
- Fully review original symptoms and op note
- Persistent symptoms unlikely to be improved with revision since they likely are not reflux related, or are multifactorial with reflux being only a part of the issue
- Post-fundo side effects (bloating, diarrhea) often improve with time
 - ER KUB to evaluate where the abdominal distension is from: colon vs stomach
 - PEG tube to allow gastric venting for gastric distension
 - In my experience typically only needed for 8-12 weeks and issue resolves
 - Reoperation with conversion of Nissen to Toupet (or LINX)
 - Study with 6 patients showed improvement in all with conversion to Toupet*

*Schwameis K, et al. *J Gastrointest Surg*, 2017

Conclusions

- Best therapy for recurrence after a fundoplication is prevention
- Select the best operation for the patient based on symptoms and physiologic testing, don't skimp on testing or make assumptions on the diagnosis (heartburn \neq GERD)
- Carefully discuss with patients which symptoms are likely to resolve, which might improve but persist, and which might not change at all (ie set expectations BEFORE surgery)
- Do the operation perfectly, don't settle
- Recognize that the most common form of anatomic failure is a recurrent hernia, and do everything you can to address this in your repair
- Lots of reassurance goes a long way in the early post-op period, but when things clearly aren't right EGD and UGI will sort most things out