Supplement Digital Appendix 1

Sample Resident Answers to GERD Pre-Session Questions for Core Curriculum Sessions Using the Combined Just-in-Time Teaching/Peer Instruction Format, General Surgery Residency Program, Northwestern University Feinberg School of Medicine, 2010-2011

Question 1: What are the indications for antireflux surgery?

Example resident answers:

1. objectively documented severe GERD. erosive esophagitis, stricture, Barret's. mechanically defective cardia: lower esophageal sphincter LES pressure less than 6 mm Hg, short sphincter length, large hiatal hernias. patients with aspiration related symptoms. young noncompliant patients with medical therapy. high progression risk. medical therapy is financial burden vs single intervention.

2. Antireflux surgery is indicated for patients with severe GERD, as evidenced by erosive esophagitis, esophageal stricture, Barrett esophagus, and any patient who requires PPIs for symptom relief, regardless of the level of mucosal injury.

3. erosive esophagitis, stricture, Barrett esophagus, PPI dependency, atypical symptoms or respiratory symptoms w inadequate reponse to medical therapy alone

Question 2: What is the relative risk of developing adenocarcinoma in Barrett's esophagus?

Example resident answers:

1. 0.5-1% per year absolute risk

2. If metaplasia only, 0.5-1% annual risk

3. 30 to 60 fold higher than the average population

Question 3: What evaluation should be done preoperatively?

Example resident answers:

1. Endoscopic assessment. diagphragmatic cura, GE junction, squamocolumnar junction identified. assessment of esophageal length. radiographic eval: hiatal hernia presence, function of esophagus

2. Endoscopic evaluation of the esophagus; 2) 24-hour ambulatory pH monitoring; 3) assessment of esophageal length; 4) radiographic evaluation; 5) assessment of esophageal function (via manometry); and 5) assessment of duodenogastric function (via gastric emptying studies, gastric acid analysis, 24-hour gastric pH monitoring, and ambulatory bilirubin monitoring of the esophagus and stomach).

3. 24-hour esophageal pH monitoring, upper GI endoscopy, measurement of esophageal length, Combined MII-pH monitoring, video esophagram, esophageal manometry, tests of duodenogastric function (eg. gastric emptying studies)

Question 4: What are contraindications to laparoscopic Nissen fundoplication?

Example resident answers:

1. Hypertensive LES and 2) Short oesophagus where esophageal lengthening is required. Other relative contraindications based on the experience of the surgeon are patients with large left lobe of liver, morbid obesity, previous upper gastrointestinal surgery, and large paraoesophageal hernia.

2. Absolute contraindications include any that would preclude laparoscopy: anesthesia intolerance, uncorrected coagulopathies, cardiac failure/ischemia, and pulmonary insufficiency. Relative contraindications specifically for laparoscopic procedures include splenomegaly, enlarged caudate lobe of the liver, and multiple previous laparatomies. Nissen fundoplication-specific contraindications include esophageal shortening, previous vagotomy, or previous gastrectomy.

3. short esophagus or inability to mobilize enough of esophagus, obesity, pulmonary pathology, sliding hiatal hernia that does not reduce below the diaphragm, previous hiatal hernia repair, concomitant surgery, severe esophageal dysmotility (partial wrap indicated; Belsey, toupee)

Question 5: Please tell us briefly what single point of the reading you found most difficult or confusing. If you did not find any part of it difficult or confusing, please tell us what parts you found most interesting.

Example resident answers:

1. what is the consensus for long-term success rate by symptom relief (no anti-reflux meds)?

2. relative vs absolute contraindications for lap Nissen unclear

3. I had difficulty understanding the various histological findings of esophageal disease.