

Peroral Endoscopic Myotomy (POEM) Procedures

Indications

- Spastic esophageal motility disorders such as Jackhammer esophagus, diffuse esophageal spasm (DES), hypertensive lower esophageal sphincter (HTLES) and Nutcracker esophagus can also be treated with POEM

Contraindications

- Prior esophageal radiation treatment; prior extensive esophageal mucosal resection or ablation in the POEM field (where the tunnel will be); severe pulmonary disease; severe coagulopathy; and cirrhosis with portal hypertension

ANESTHESIA FOR POEM PROCEDURES

Preoperatively:

- Patients prepared by PSS nursing staff. Variable fasting for solids depending on the degree of achalasia. If severe, they may be asked to fast for solids for 1-2 weeks
- Testing ordered as per medical directive
- The IV is started in SDAC and they receive IV pantoloc (ordered by Dr. Bechara)

Operating room:

- They will first need to do an endoscopy to suction any remaining undigested food. In some patients, there can be very significant amounts of solids remaining even after a long fast.
- Usually only need minimal sedation as they are at significant aspiration risk
- After suctioning, position supine and induce / intubate
- Patient positioned on their left side for the endoscopy. In the ACT room, it is helpful to set up as pictured on the stretcher for the initial scope and induction / intubation.
- Transfer to the OR table (in ACT) for the POEM procedure.
- Cefazolin 2 gm IV prior to the procedure
- Need to visualize neck and abdomen (risk of subcutaneous emphysema)
- Procedures take approximately 2-3 hours
- Some patients have moderate amount of pain – usually need some long-acting opioid
- Ketorolac usually OK as long as there are no bleeding concerns or other contraindications
- Antiemetics with dexamethasone and ondansetron (want to avoid retching / vomiting)
- No specific billing code – Use code for Heller myotomy S073 – 7 units

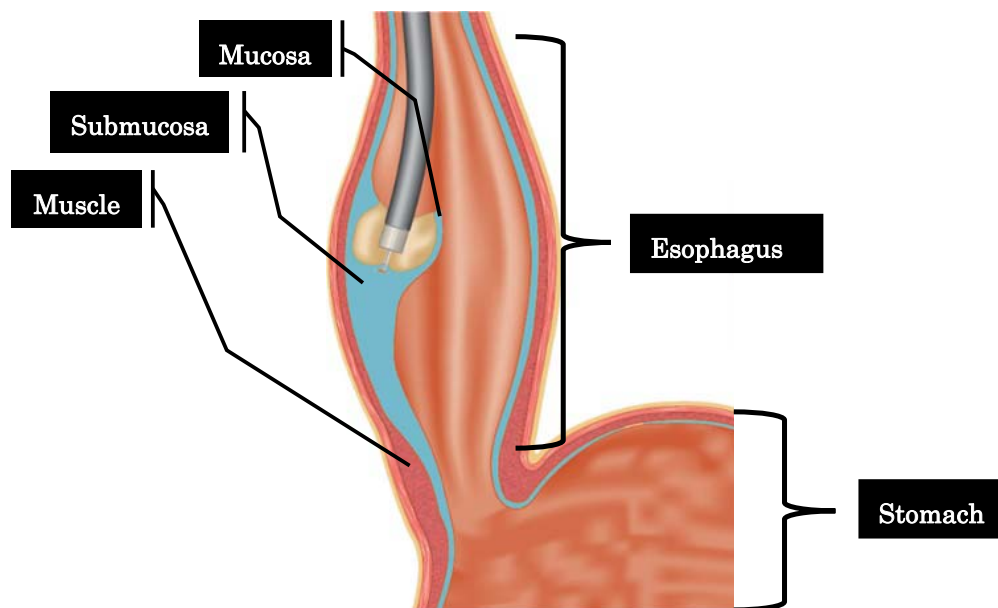
Postoperatively:

- Admitted overnight to medicine bed

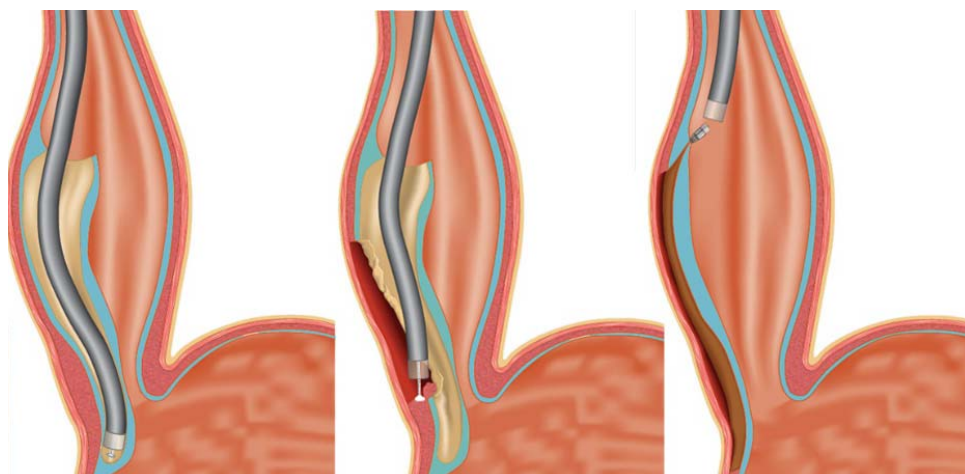


The POEM Procedure

1. The patient is on a liquid diet for 48 hours at home. On admission an endoscopy with minimal sedation is performed to suction out any residual debris.
2. The esophagus is composed of two main components: the mucosa and muscle layers. After injection of the voluven solution under the mucosa, a "submucosal tunnel" is created to allow the endoscope enter under the mucosa and gain access to the muscle.
3. After the tunnel is completed with the TT knife, the circular muscle myotomy is performed.
4. After the myotomy is completed, an antibiotic solution (tobramycin) is instilled into the tunnel and the entry site is closed with clips.



Start of Submucosal Tunnel



Completed Tunnel

Myotomy

Closure with clips

Adverse Events

Intra-procedural

- Severe bleeding during procedure ~0.1%
- Tense pneumoperitoneum Less than 10%
- Subcutaneous emphysema~25-30%
- Damage to esophageal wall (mucosal defect) ~1% (1 in 100)
- Hypercapnia requiring procedural pause less than 1% (< 1 in 100)
- Cardiac or respiratory complications ~0.1% (1 in 1000)

Post-procedure in Hospital

- Delayed bleeding ~0.1%
- Infection at site of POEM less than 0.1%
- Pneumonia ~0.1%
- There have been no reported mortalities from POEM, however this is very rare possibility

Delayed

- Reflux ~20% (can be successfully treatment with antacids)
- Treatment failure requiring second treatment ~ 5%