

# Robotic Esophagectomy

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# Disclosures

- Glaxo-Smith Kline
- Intuitive
- Covidien

# Objectives

- Review History of Esophagectomy
- Understand indications of Minimally invasive approaches to esophageal cancer
- Review technical pitfalls of esophagectomy
- Review optimal bedside assist techniques

# Esophagectomy

- Usually for Esophageal cancer (middle and lower thirds)
  - Can be done for end stage achalasia
- Esophageal and Gastric mobilization
- Conduit preparation
- Lymph node dissection
- Esophago-gastric anastomosis
  - Chest vs Neck

# Types of Esophagectomy

- Transthoracic
- 3-Field (3-Hole)
- Transhiatal

# Types of Esophagectomy

- Transthoracic
  - Ivor Lewis
  - Midline Laparotomy
  - Right Thoracotomy
  - Anastomosis is in the chest
- 3-Field (3-Hole)
- Transhiatal

# Types of Esophagectomy

- Transthoracic
- 3-Field (3-Hole)
  - Mckeown
  - Right thoracotomy 1<sup>st</sup>
  - Midline laparotomy and left neck incision
  - Anastomosis is in the neck
- Transhiatal

# Types of Esophagectomy

- Transthoracic
- 3-Field (3-Hole)
- Transhiatal
  - Pioneered by Mark Orringer
  - Midline laparotomy and left neck incision
  - Anastomosis is in the neck
  - First Minimally invasive Esophagectomy!!



# MIE versus Open Esophagectomy?

- What is an MIE?
- What is a robotic assisted MIE?

# MIE versus Open Esophagectomy?

- No Clear definitions
- What is an MIE?
  - Any portion of the case done using minimally invasive technology
  - Right VATS + midline laparotomy
- What is a robotic assisted MIE?
  - As above, but using robotic assistance

# Does the MIE matter?

- Not necessarily for laparotomy
- Can reduce pain from right thoracotomy
- LOS is >7-8 days no matter the approach
- Needs for successful esophagectomy
  - High volume center
  - Gastric conduit preparation is key
  - Ability to “rescue” patients from complications
  - Post-op care is as critical as technical surgery

# Open versus Minimally Invasive?

- VATS/laparoscopic is similar to Robotics
- Would approach most Right chest incisions with a Right VATS approach
- Open reserved for
  - T4 tumors (invading surrounding structures)
  - Concerns about conduit preparation (ie seeing the blood vessels)
  - Inability to visualize in the abdomen or the chest

# Pitfalls of Esophagectomies

- Visualization
- Bleeding
- Identifying the vascular supply to the conduit

# Pitfalls of Esophagectomies

- Visualization
  - Moving Camera in and Out
  - Troubleshooting Insufflation
- Bleeding
- Identifying the vascular supply to the conduit

# Pitfalls of Esophagectomies

- Visualization
- Bleeding
  - Minor bleeding, suctioning
  - Major bleeding, Spleen or Left gastric artery
- Identifying the vascular supply to the conduit

# Pitfalls of Esophagectomies

- Visualization
- Bleeding
- Identifying the vascular supply to the conduit
  - Ultrasound
  - Indocyanine Green Fluoroscopy (Firefly<sup>®</sup>)
  - Conversion to open



# Bedside Assist

- Port Placement
- Docking
- Placing instruments
- Troubleshooting Camera
- Removing specimens/Lymph Nodes
- Suctioning/advancing staplers

# Robotic Esophagectomy

- Video-approx 30 min

# Questions?

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