Disclosure Slide

- Consultant for Mallincrodt and Quark Pharmaceuticals
Case Presentation: Patient PH

82 y/o woman with HTN, PVD, BrCa

- 10 year history of dysphagia, GERD, chest pain with eating and known hiatal hernia
- Followed for a decade by GI and previously underwent EGD with dilations, capsule endoscopy, medical management
- 30 lb wt loss over 5 years, stable now
- “I’d rather die than go on like this…”
Case Presentation: Patient PH
Case Presentation: Patient PH
Minimally Invasive Foregut Surgery

• Why do it?
  – Laparoscopic is better than open (laparotomy or thoracotomy)\(^1\)
  – Yet many are still offered open surgeries

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Minimally Invasive Foregut Surgery

• Why do it?
  – We need to do laparoscopic better.
  – PEH: 57% recurrence rate at 5 years

Minimally Invasive Foregut Surgery

• Why do it?
  – We need to do laparoscopic better.
  – GPEH: 33% radiographic recurrence rate at 1 year\(^1\)
  – But GERD-HRQL better in operative group

Prospective study of giant paraesophageal hernia repair with 1-year follow-up

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Robotic Foregut Surgery

• Why do it? The data for robotic giant PEH repair.
  – Single center series: 19 patients underwent robotic giant PEH repair.¹
    • No deaths or recurrences 15 mo median f/u
    • 1 conversion
  – Single center series: “case-control study” of 12 robotic, 17 laparoscopic, and 13 open. ²
    • Decreased LOS and post-operative complications compared to open
    • Similar to laparoscopic

Robotic Foregut Surgery

Why do it? The data for robotic giant PEH repair.

- Single center series: 14 patients underwent robotic giant PEH repair.\(^1\)
  - No deaths or robotic related morbidity
  - Felt to be superior for hiatal dissection
- Single center series: 40 patients with large PEH underwent robotic repair with 1 year follow-up. \(^2\)
  - Subjectively, surgeons felt robotics was helpful
  - Relatively low recurrence rate

Robotic Foregut Surgery

• How do we do it? Everytime
  – Complete resection of the hernia sac from mediastinum.
  – Adequate esophageal mobilization
  – Proper hiatal closure
  – Fundoplication (?)
Robotic Foregut Surgery

• How do we do it? Sometimes
  – Anterior gastropexy¹
  – Crural mesh augmentation²
  – Esophageal lengthening (wedge gastroplasty)

Robotic Foregut Surgery

• How do we do it? Set-up
  – Placement of ports in robotic surgery more critical than in laparoscopic.
  – Si technology does not allow for camera “port hopping”…Xi does.
  – Do not have unrestricted movement of the ports.
Robotic Foregut Surgery

- How do we do it? Set-up
Port Placement
All ports may need minor adjustments based on the patient’s BMI and body habitus. Port locations should be placed after insufflation with 15 mmHg. Position the remote center on the cannula (thick black band) at the level of the peritoneum.

- **da Vinci Camera Port, 12 mm (Blue):** Place port 2 cm lateral to the umbilicus in the left upper quadrant.
- **da Vinci Instrument Arm ① Port, 8 mm (Yellow):** Place the port a minimum of 8 cm away from the camera port in the left upper quadrant ~2-3 cm medial to the left MCL.
- **da Vinci Instrument Arm ② Port, 8 mm (Green):** Place the port a minimum of 8 cm from the camera port in the right upper quadrant. It should be high enough to reach the epigastrium.
- **da Vinci Instrument Arm ③ Port, 8 or 5 mm (Red):** Place the port ~8 cm lateral and 2-3 cm inferior to instrument arm ②.
- **Assistant Port, 12 mm (A), Optional:** Place the port in between instrument arm ② and camera port, at least 5 cm away from either port.
- **Liver Retractor, 5 mm (B), Optional:** Insert the liver retractor 2 cm subxiphoid.
Robotic Foregut Surgery

• How do we do it? Set-up

- 5 or 8 mm robot port
- Long 12 mm lap port
- 5 or 8 mm robot port
- Nathanson liver retractor
- Standard 12 mm lap port

• How do we do it? Set-up

- 5 or 8 mm robot port
- Long 12 mm lap port
- 5 or 8 mm robot port
- 8 mm robot port or 5 mm lap port
- Standard 12 mm lap port
- 5 mm lap port
• How do we do it? Set-up

**Instrumentation**

- 8 mm robot port
- Fenestrated bipolar
- Large needle driver
- 5 mm robot port
- Thoracic or bowel grasper
- Needle driver
• How do we do it? Set-up

Instrumentation

- 8 mm robot port

- Cardiere forceps

- Large suture cut needle driver

- Hot shears™ or Permanent spatula or Monopolar hook

- Vessel sealer™ or Harmonic
• How do we do it? Set-up

**Instrumentation**

- 5 mm robot port
- Thoracic or bowel grasper
- Needle driver
- Monopolar cautery hook or spatula
- Harmonic shears
• How do we do it? Set-up

**Instrumentation**

- 12 mm laparoscopic port
- Specimen retrieval
- Suture passing
- Stapler insertion
• How do we do it? Set-up

Miniaturation

› 8.5 mm endoscope with cannula
› 5 mm robot ports x2
› 5 mm lap ports x2
› Suture on ski needle
• How do we do it? Set-up

\textit{Caveats}

› Phase shift cephalad for mediastinal dissection

› Port selection can depend upon OR staff

› 8 cm minimum between robot ports

› Narrow or thick abdomen may benefit from long robot ports
Reduction and Dissection of Hernia Sac
Modified Gastroplasty
Crural Repair
Fundoplication
Versatility
Re-do GPEH with Linx