

# Paraesophageal Hernia

## *Three Points for Better Operative Repairs*

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*Center for Esophageal and Gastric Surgery*

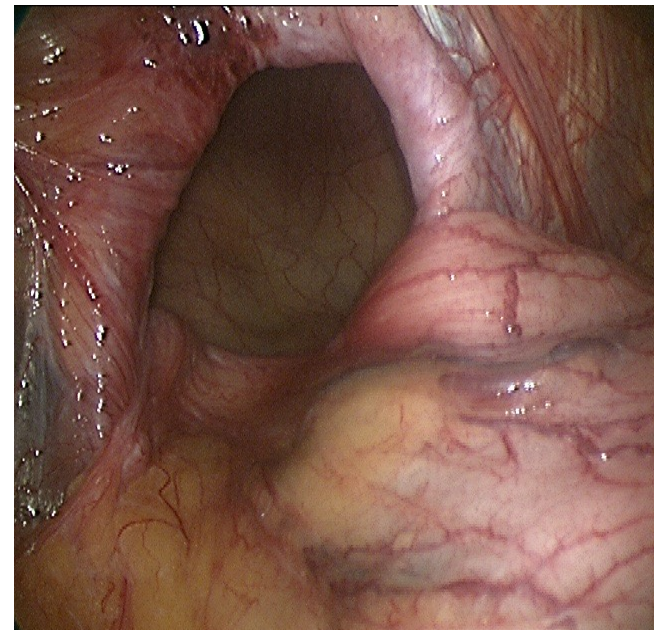
*University of Washington*

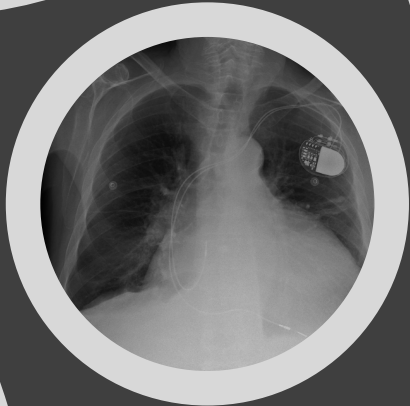
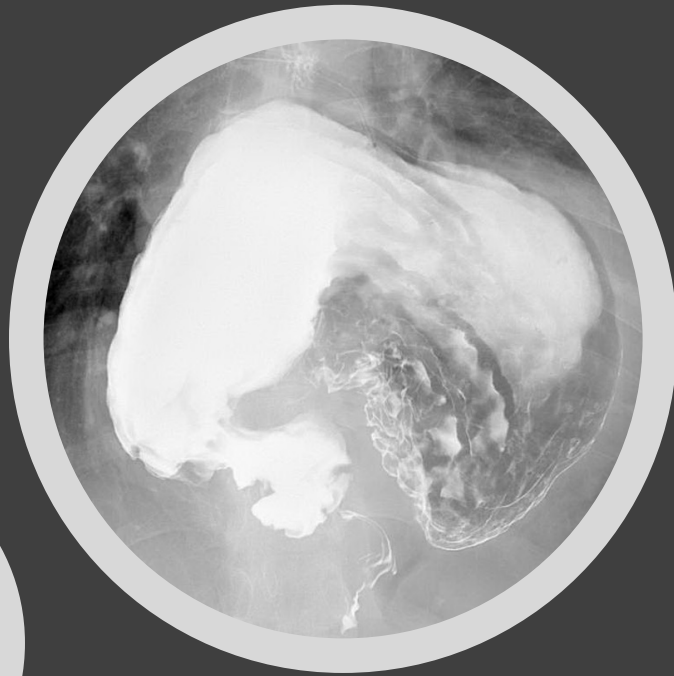
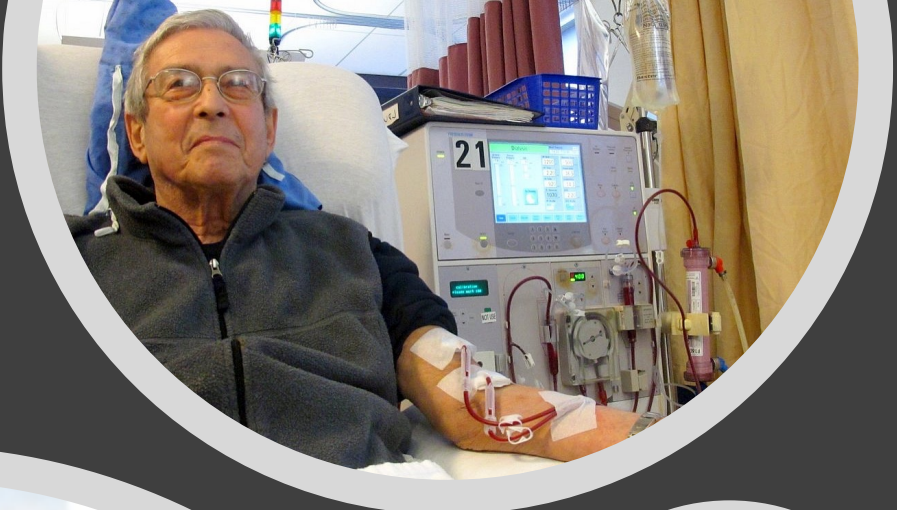
# Disclosures

- No conflicts of interest

# *Presentation Agenda*

- Patients with High Operative Risk
- Elevated Tension at the Esophageal Hiatus
- Creation of the Fundoplication



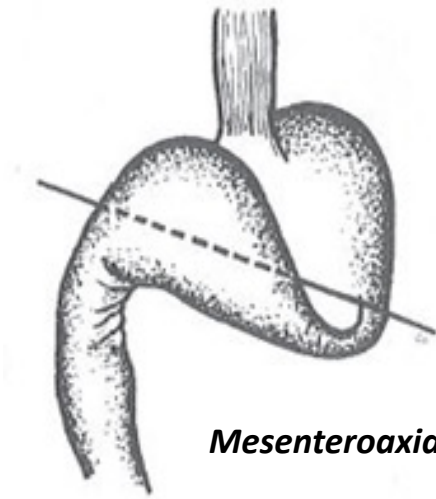
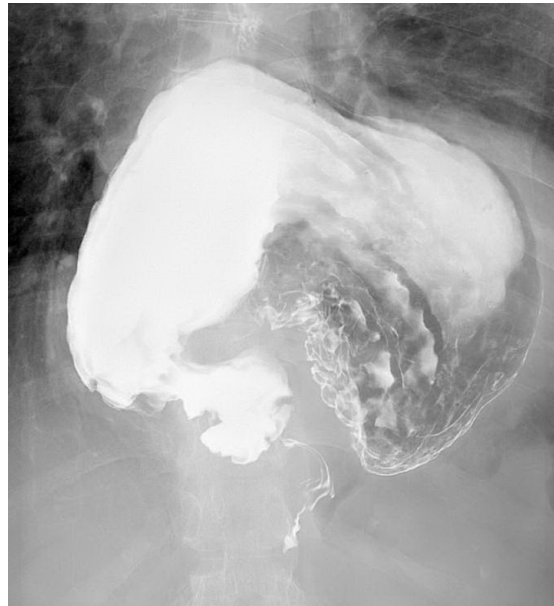


## Part I: Patients with High Operative Risk

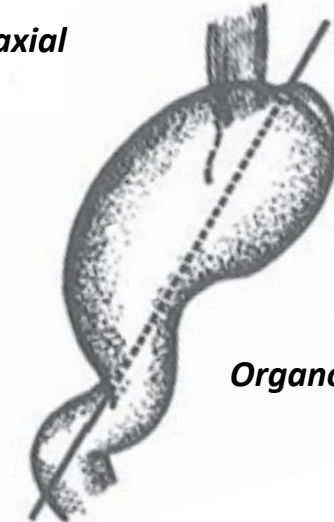


# *Symptoms of Gastric Volvulus*

- Early satiety
- Post-prandial abdominal
- Chest pain/pressure
- Dysphagia
- Vomiting/Dry Heaving

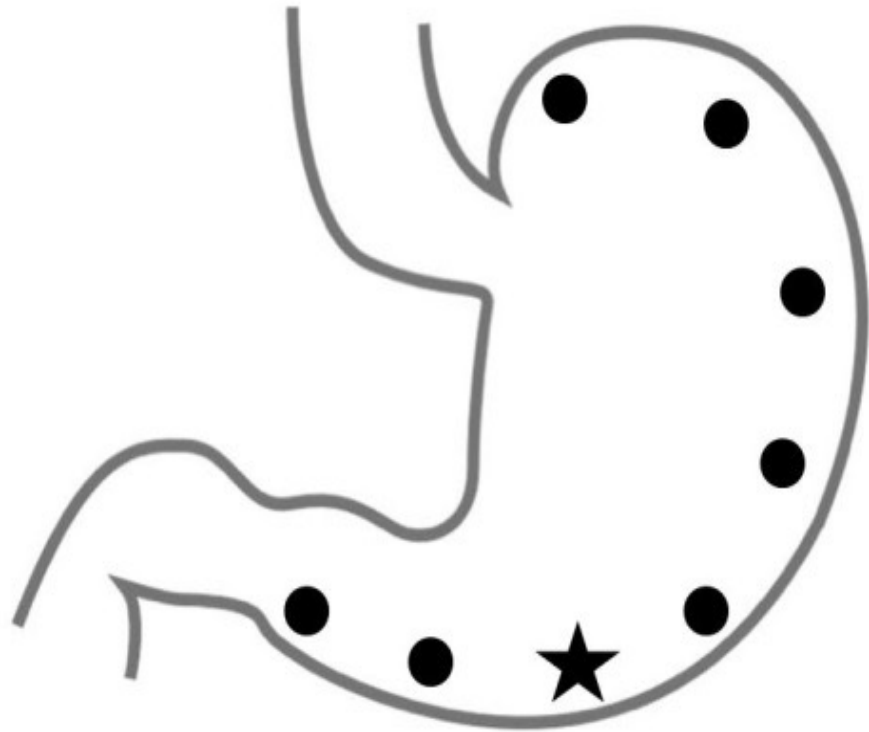


*Mesenteroaxial*

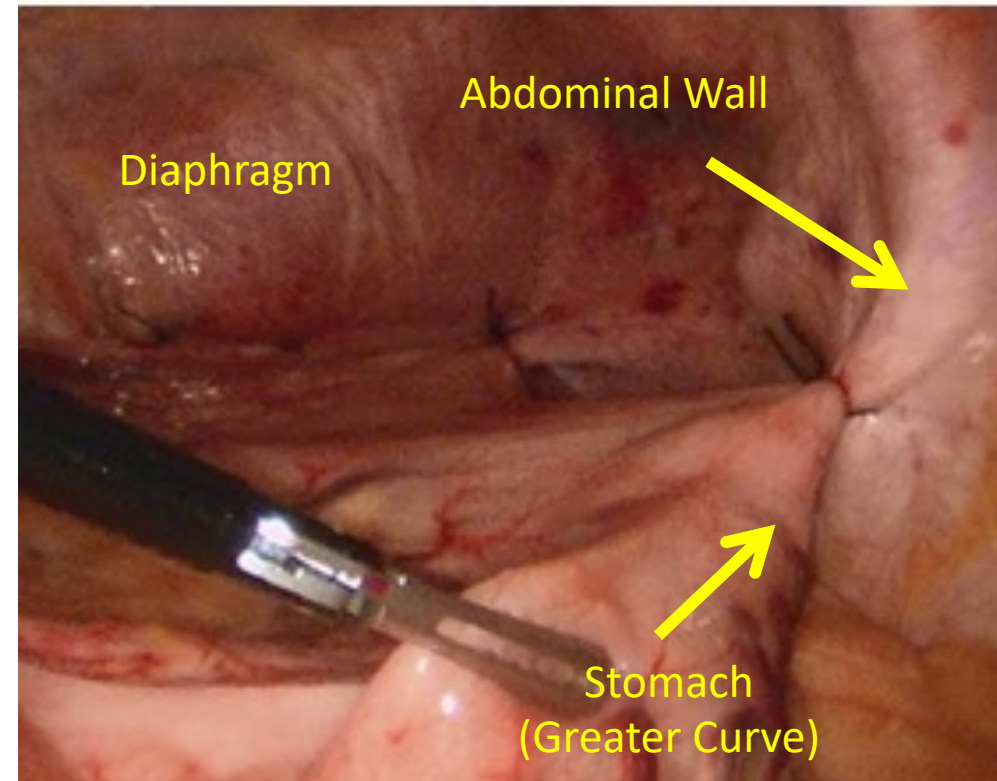


*Organoaxial*

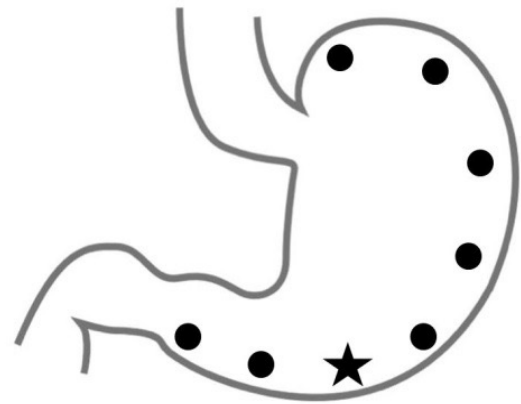
# Laparoscopic Anterior Abdominal Wall Sutured Gastropexy



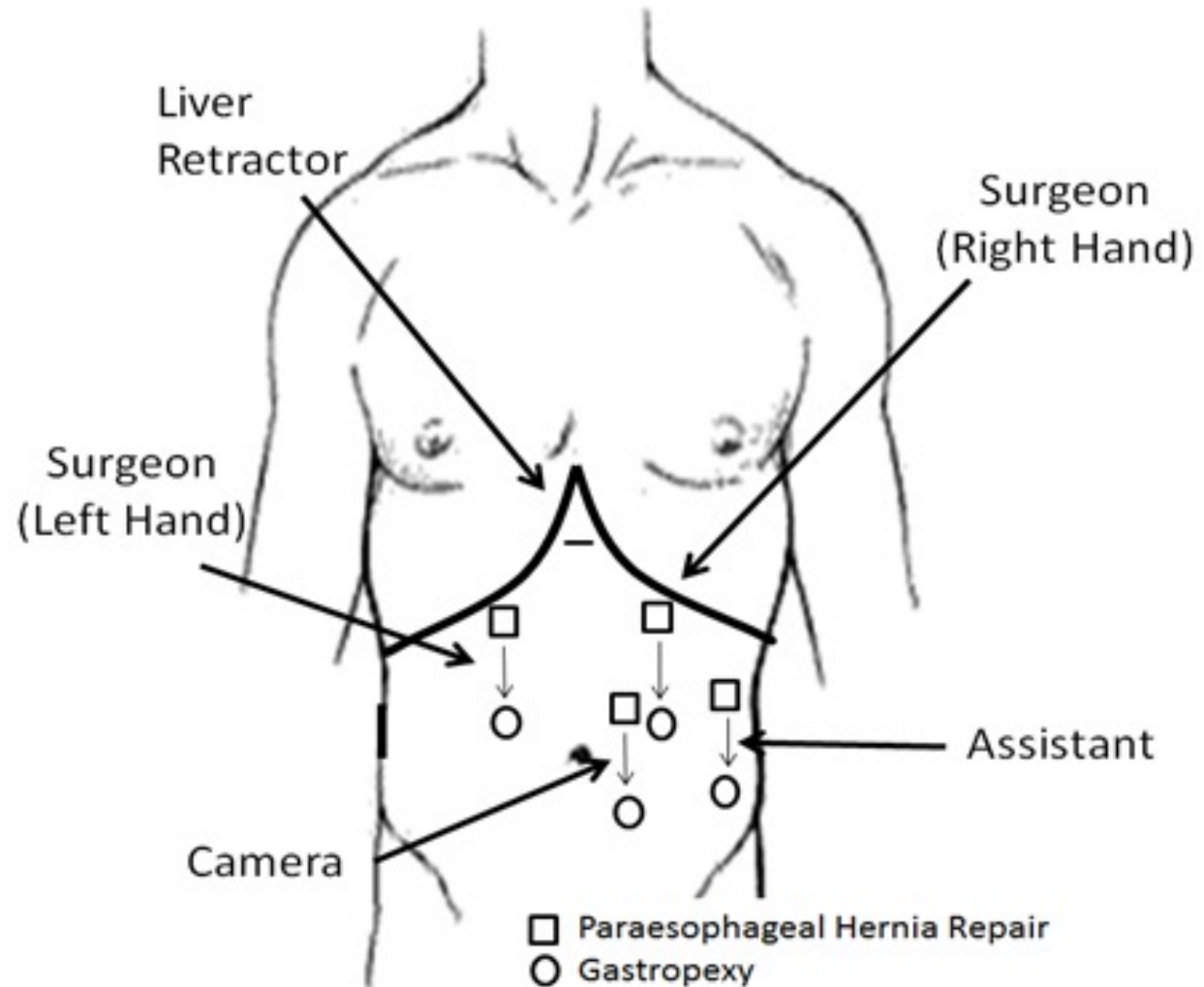
- Suture Gastropexy
- ★ Gastrostomy Tube

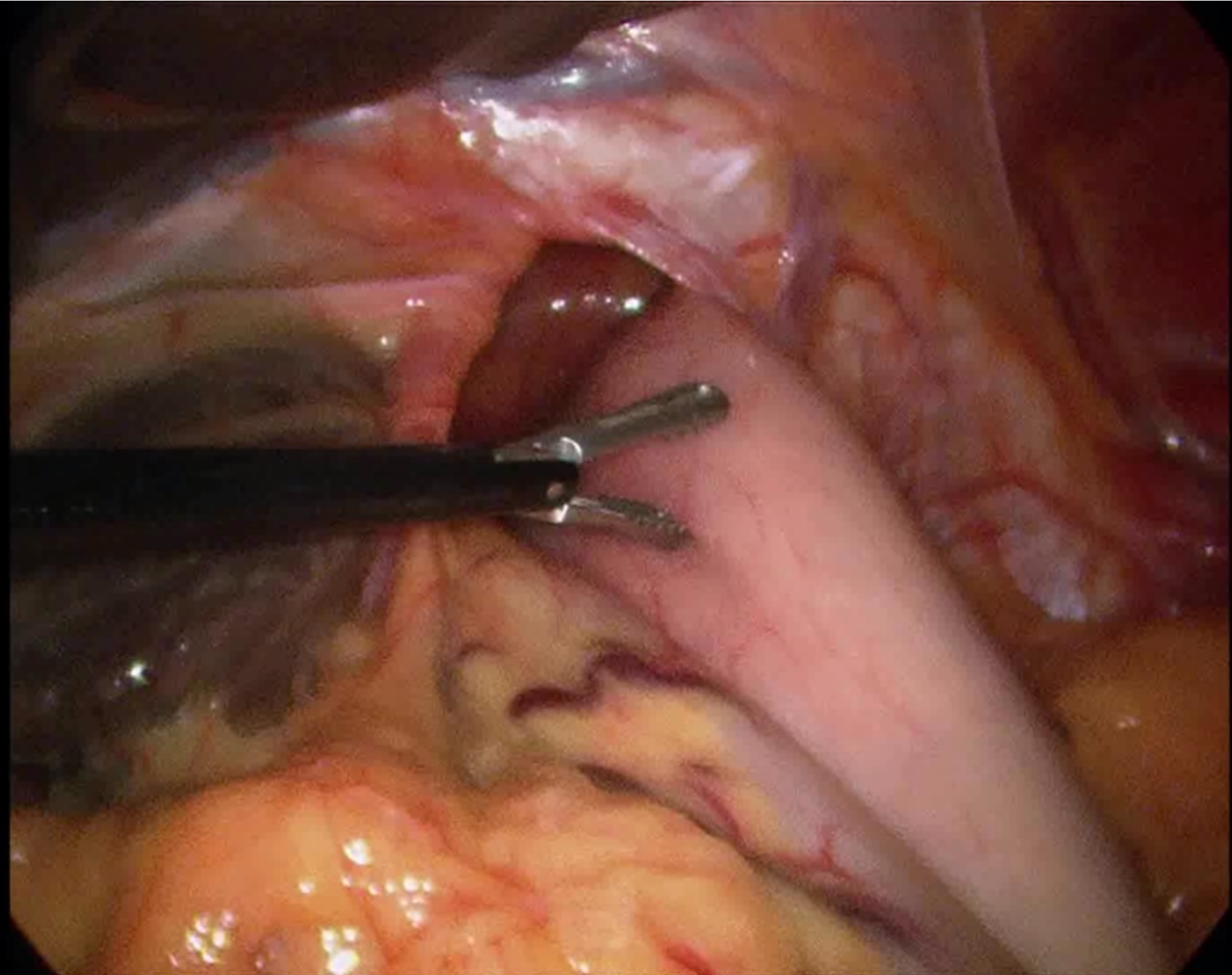


# Operative Set-up for Laparoscopic Gastropexy



- Suture Gastropexy
- ★ Gastrostomy Tube





# Gastropexy Pearls ...

- Minimize tension on stomach
- 'Recurrent hiatal hernia'
- Postoperative PPI use
- Gastropexy as a bridge to PEH repair

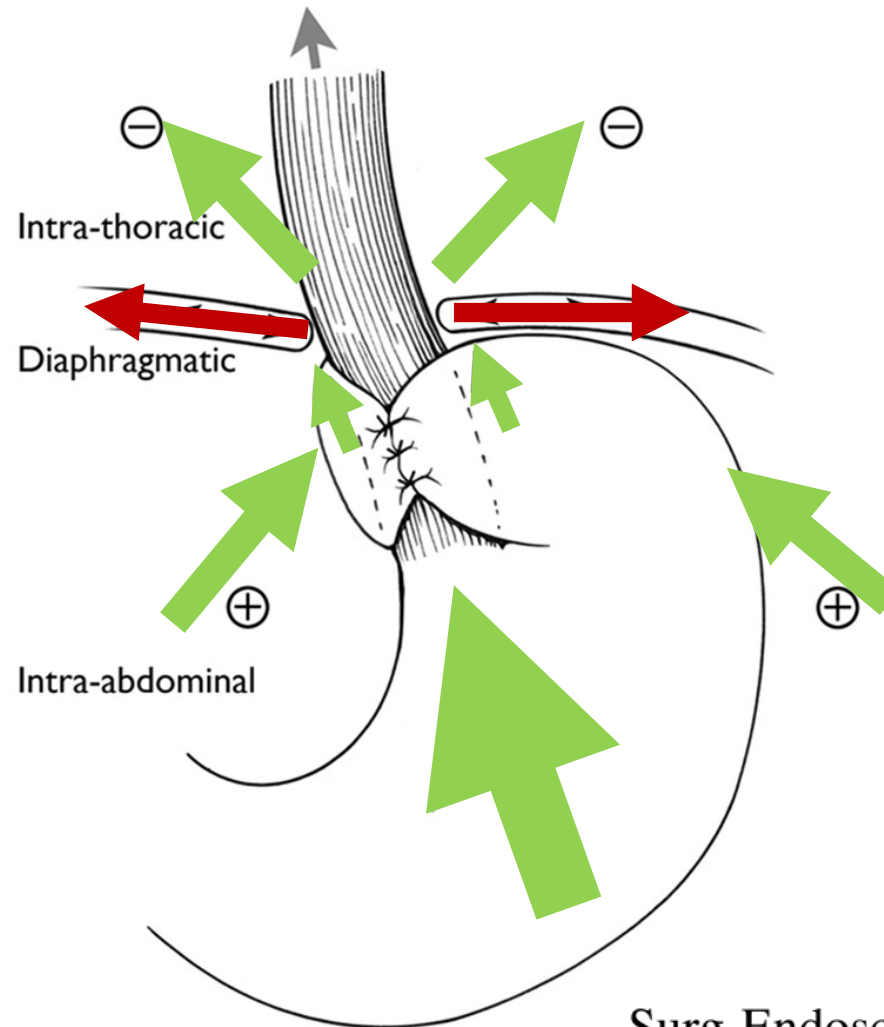


## Part II: Tension at the Hiatus

# Forces Exerted at the Esophageal Hiatus

- Axial

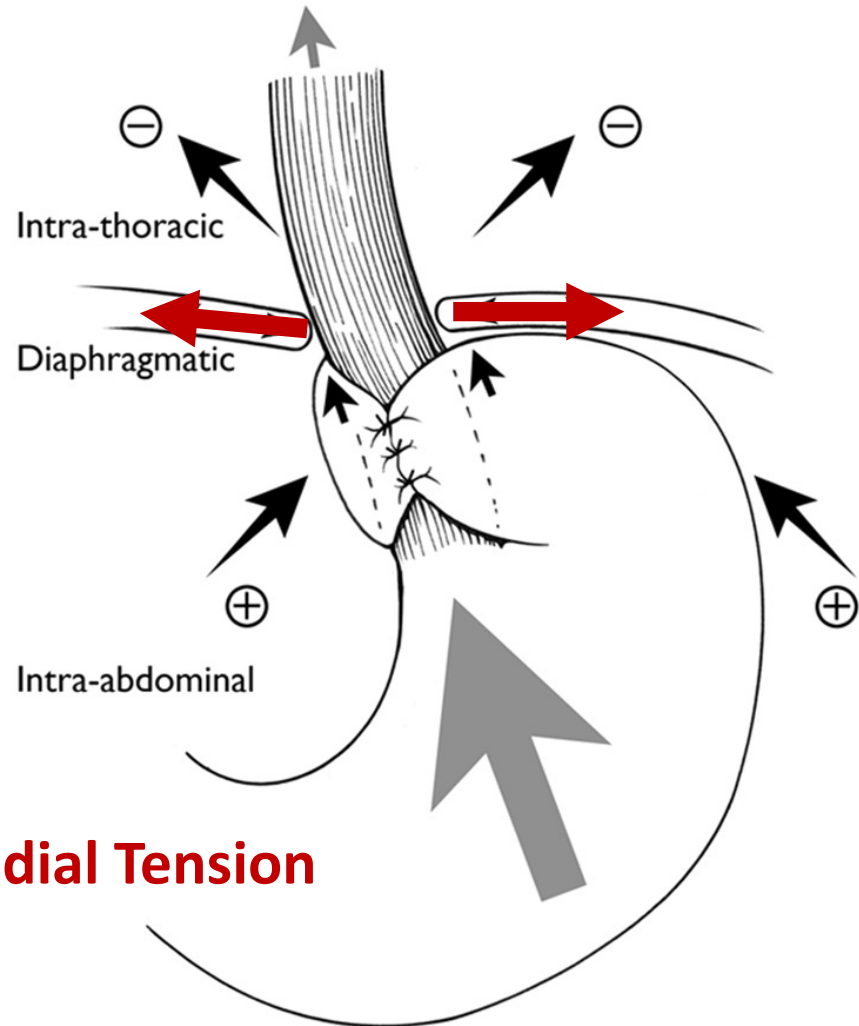
- Radial



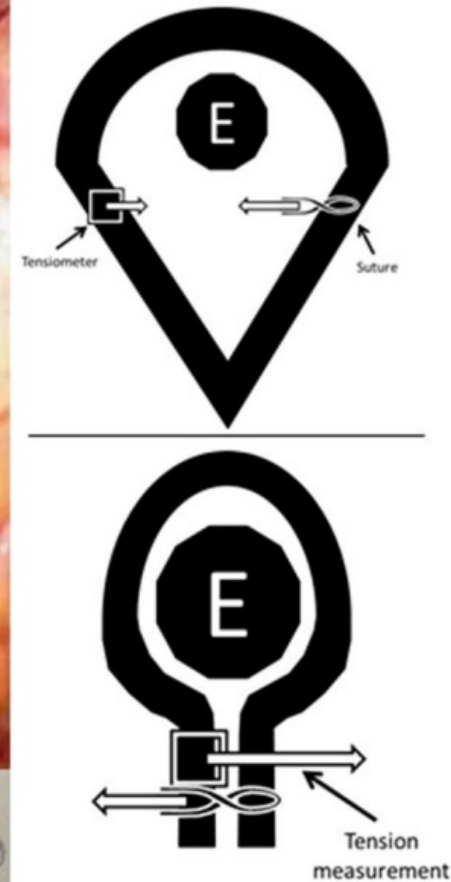
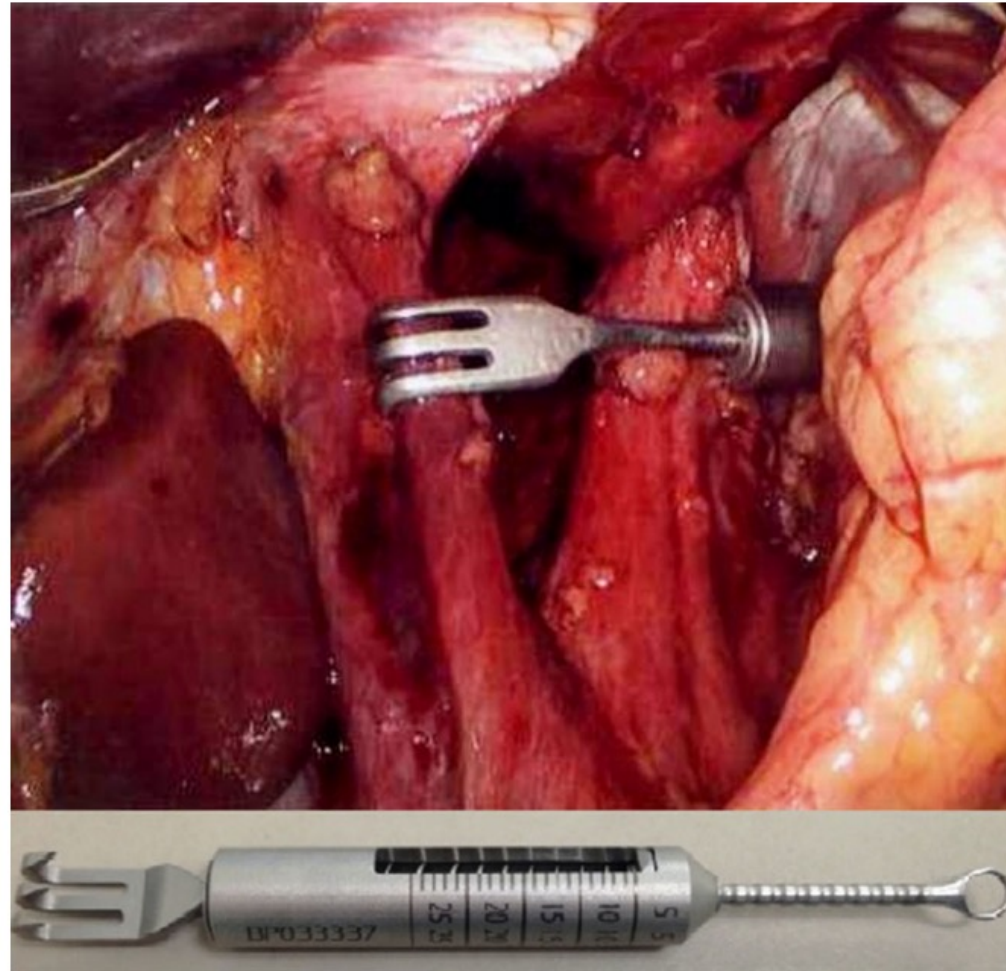
# Assessment and reduction of diaphragmatic tension during hiatal hernia repair

Surg Endosc (2015) 29:796–804

Daniel Davila Bradley · Brian E. Louie ·  
Alexander S. Farivar · Candice L. Wilshire ·  
Peter U. Baik · Ralph W. Aye



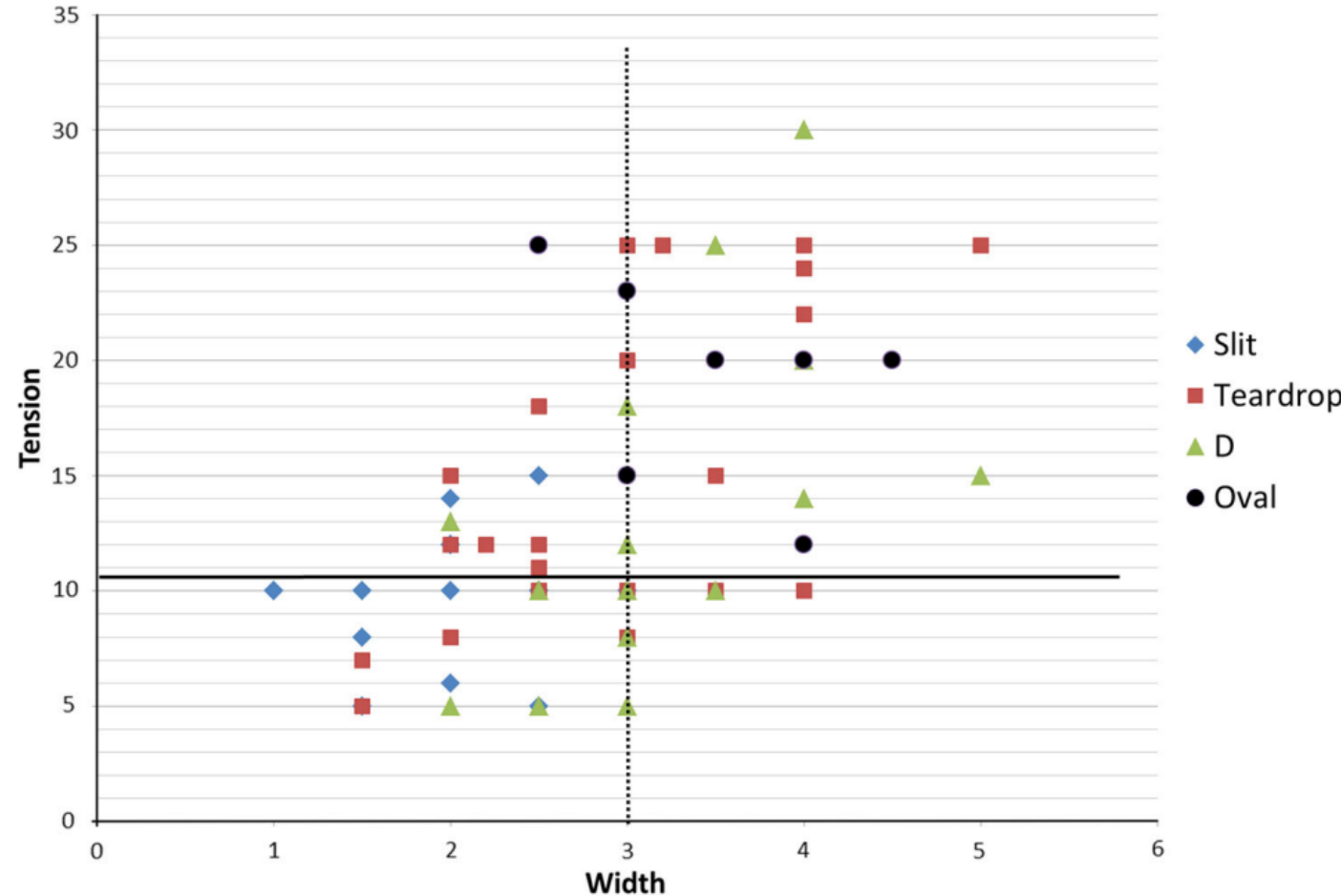
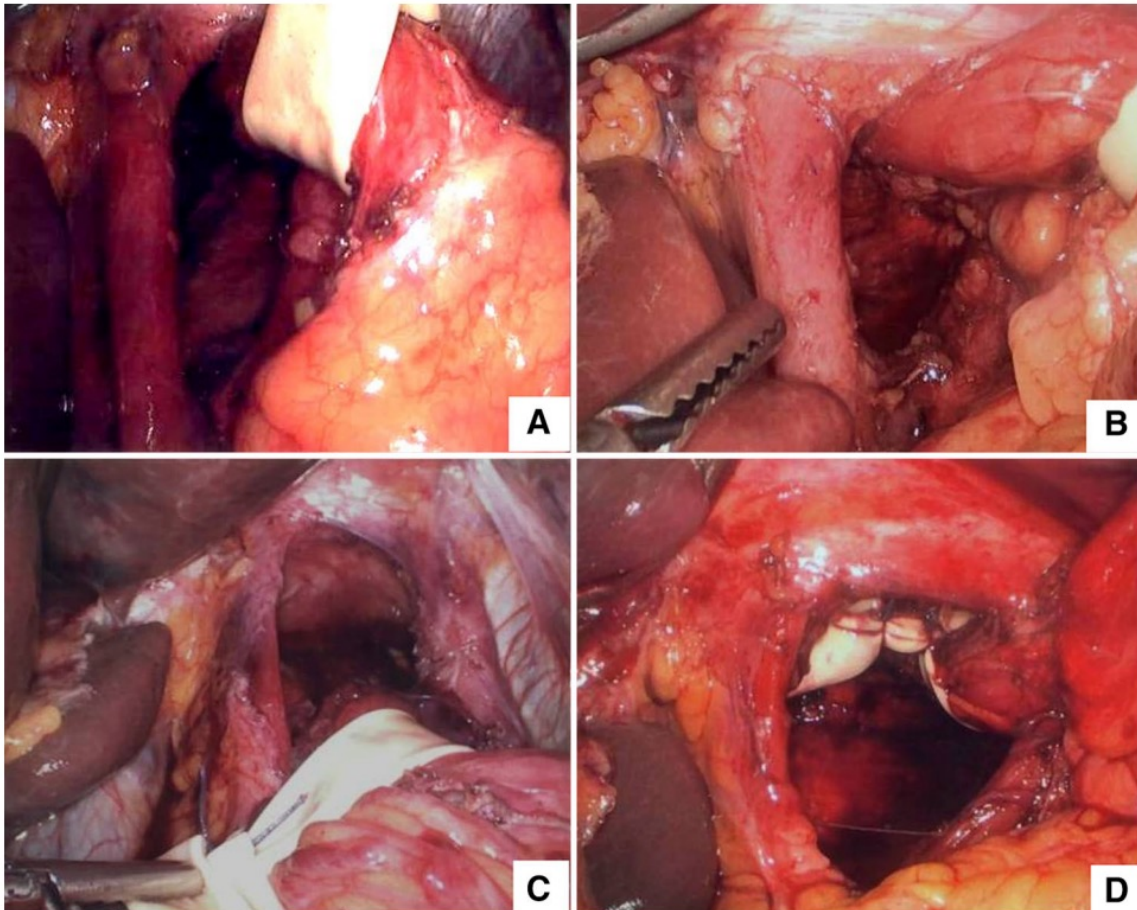
- **Radial Tension**



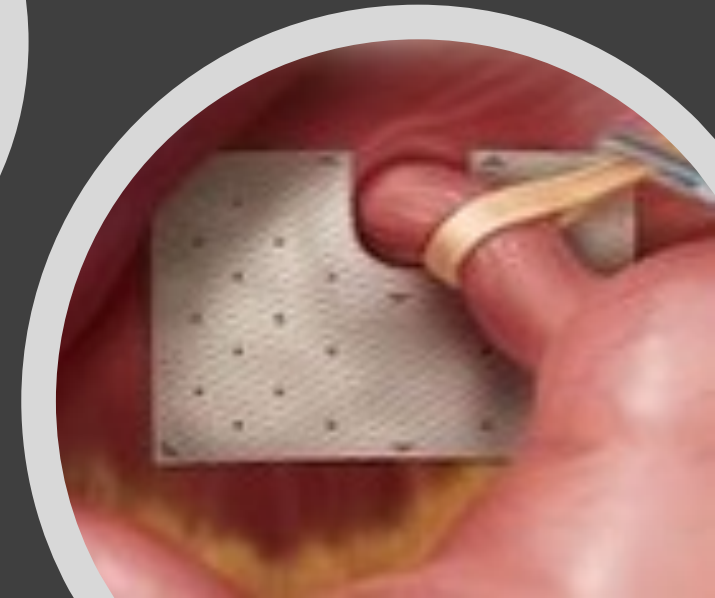
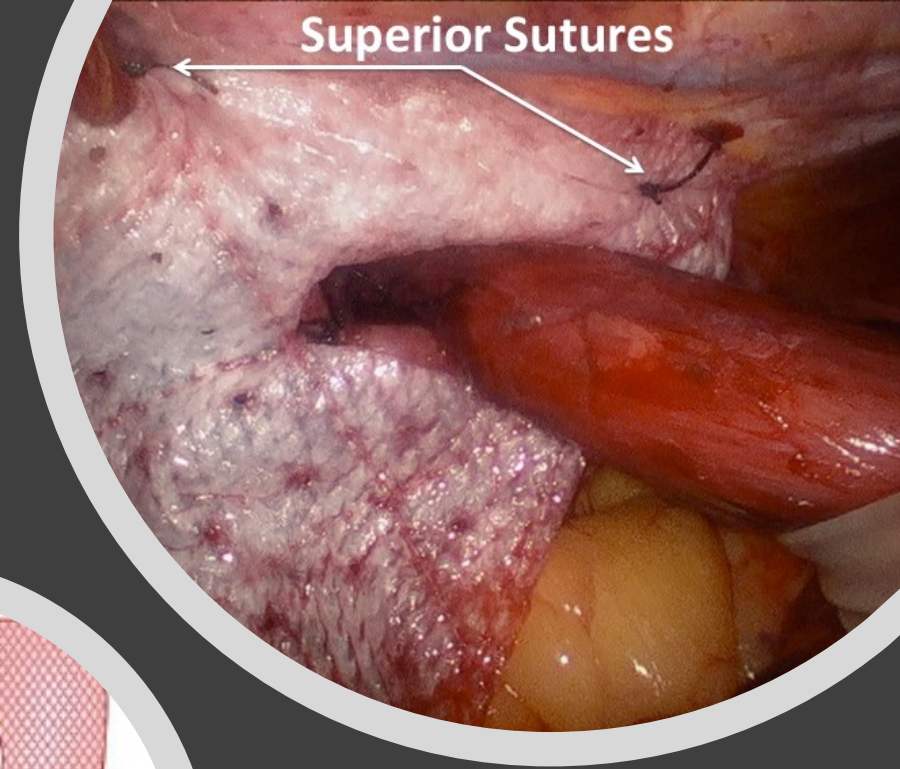
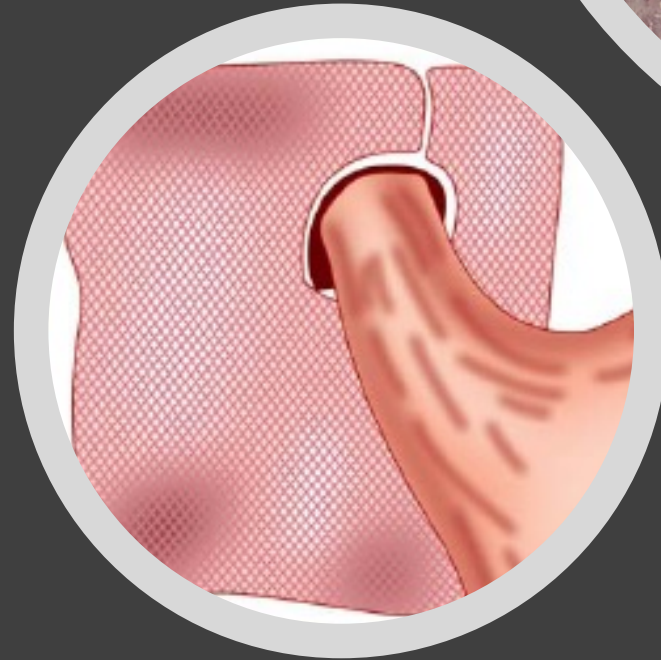
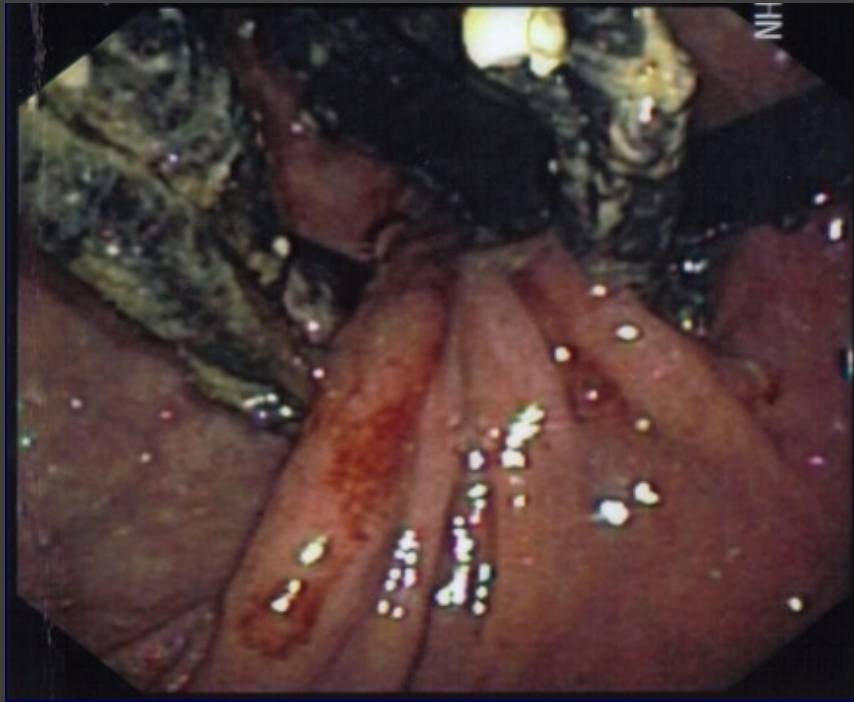
# Assessment and reduction of diaphragmatic tension during hiatal hernia repair

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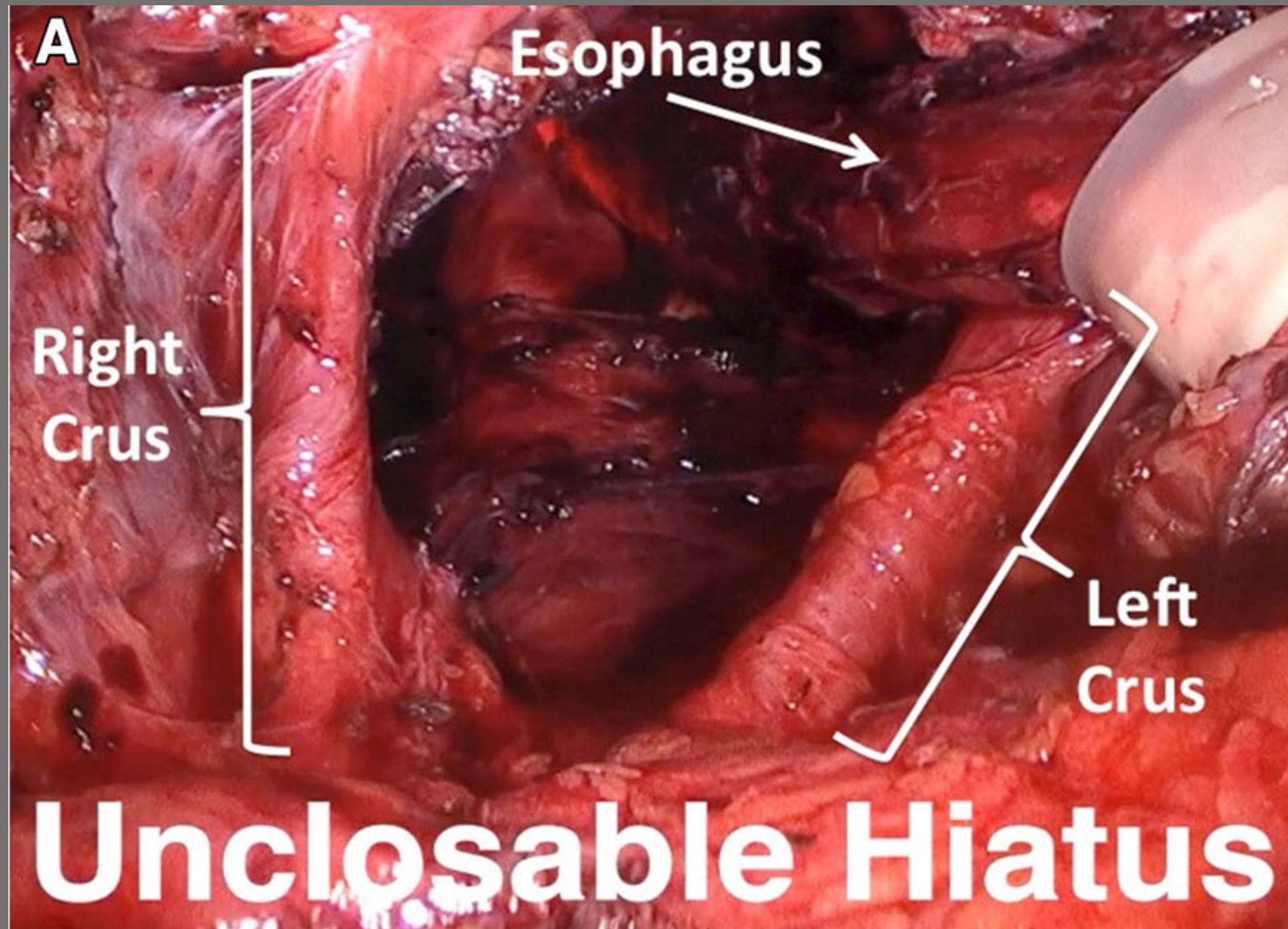
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# Mesh Reinforcement of Hiatal Closure



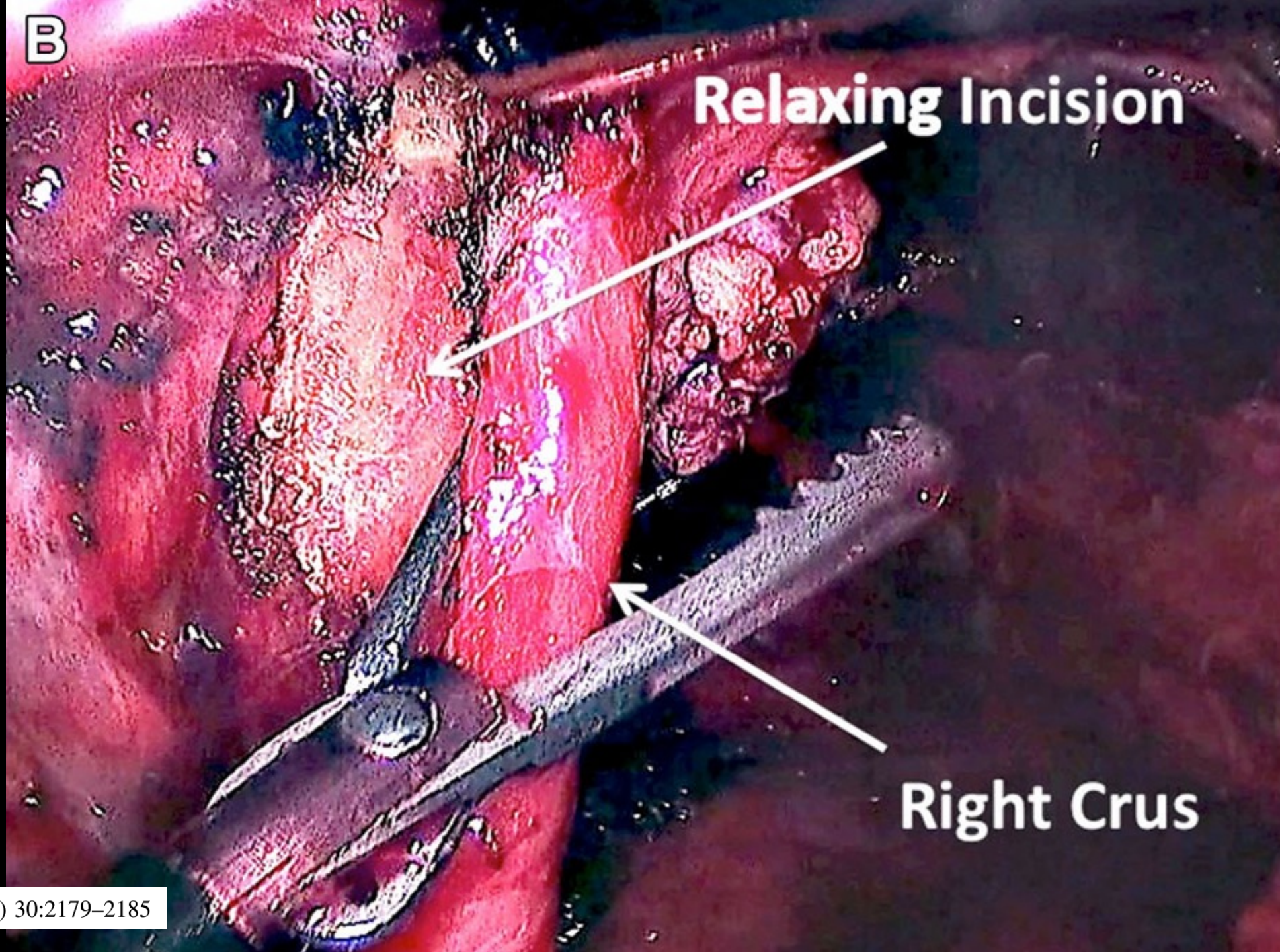
# Diaphragmatic Relaxing Incision



**B**

**Relaxing Incision**

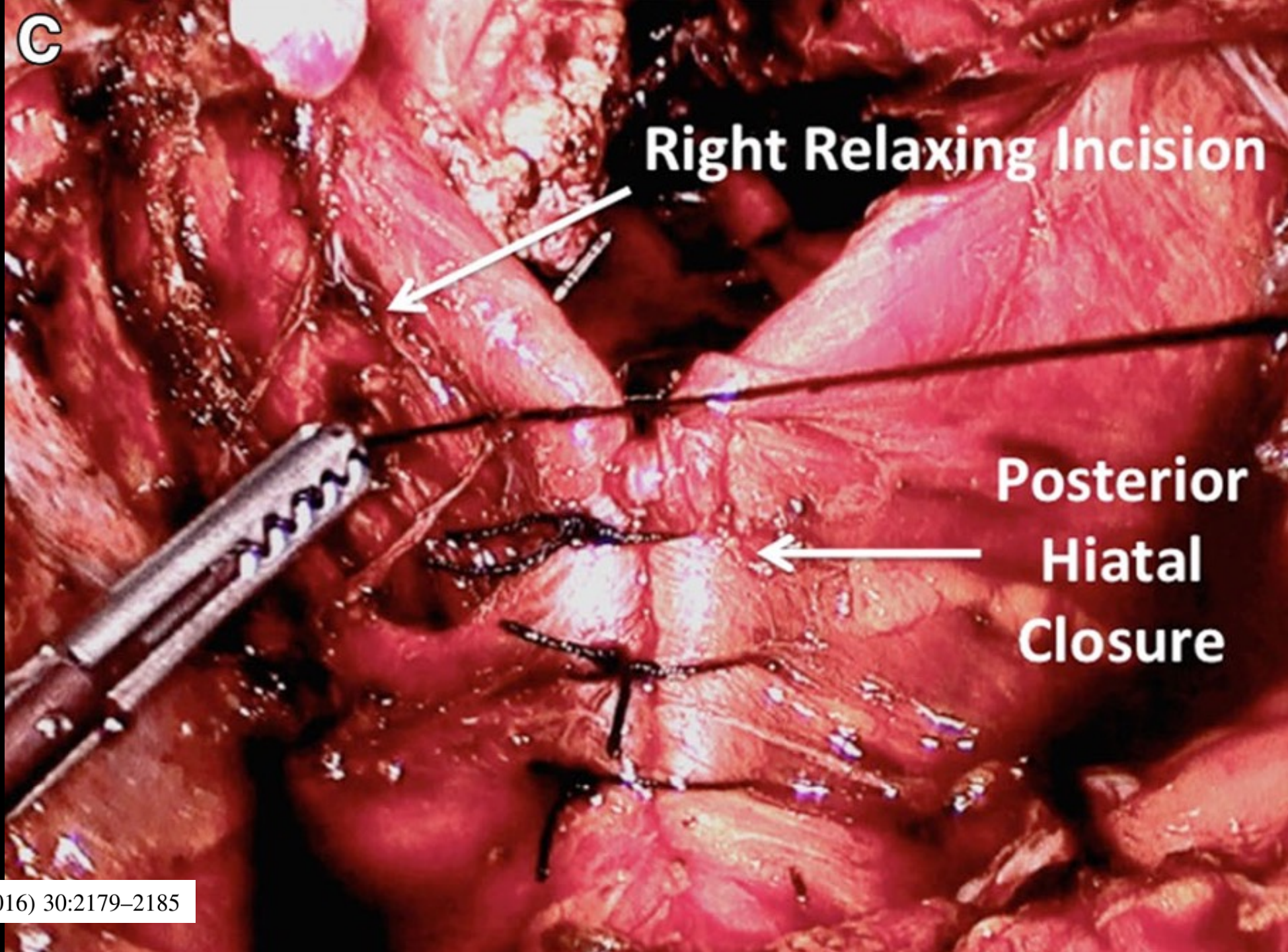
**Right Crus**

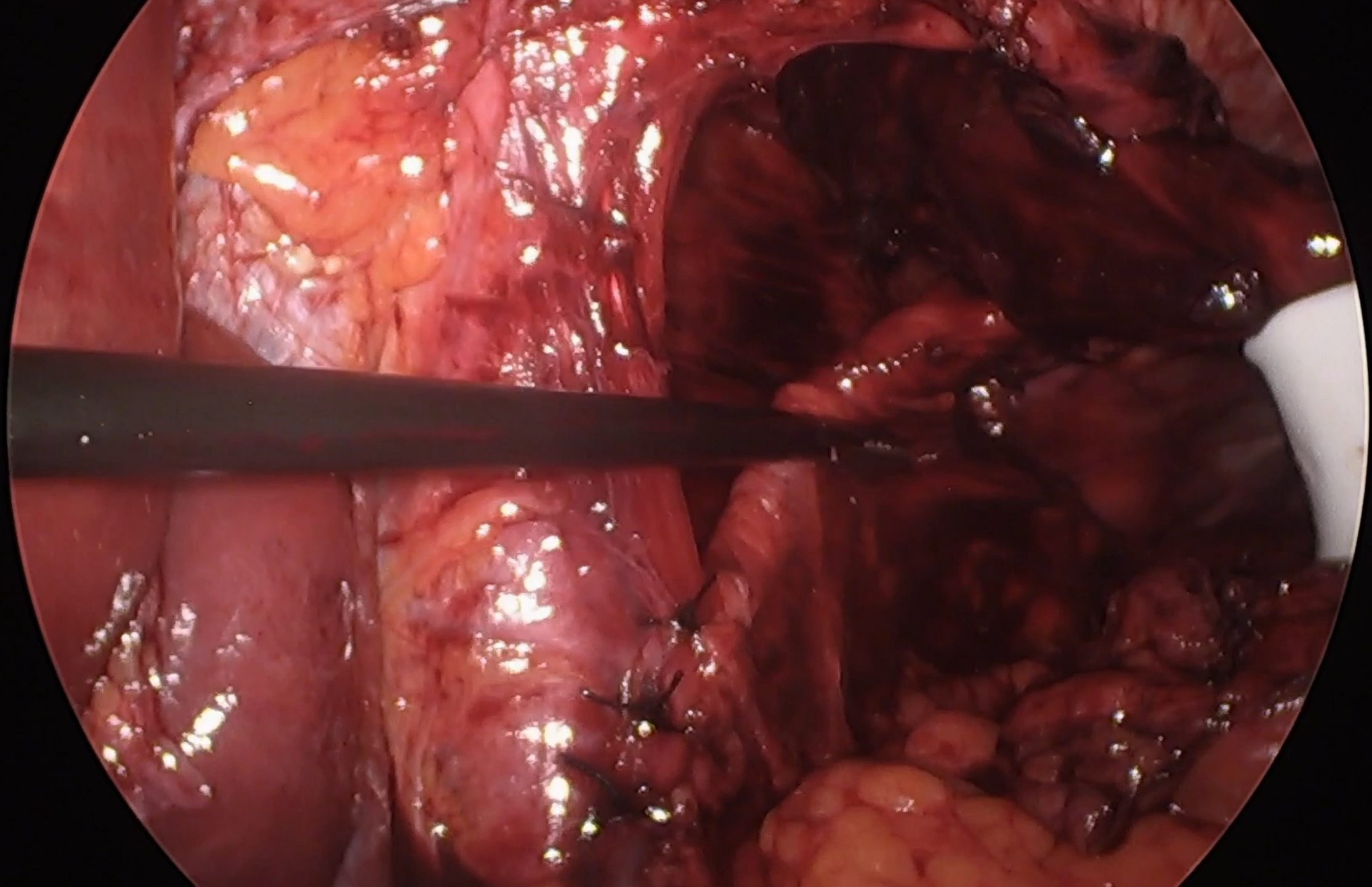


C

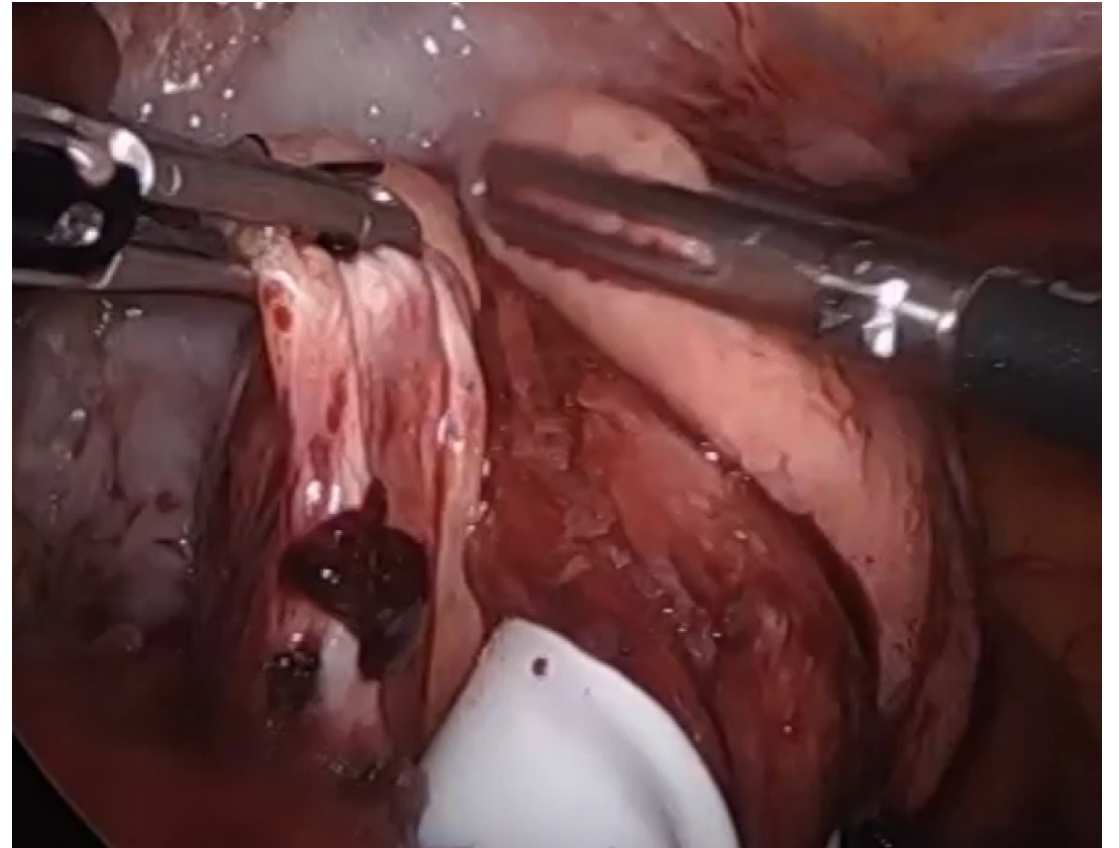
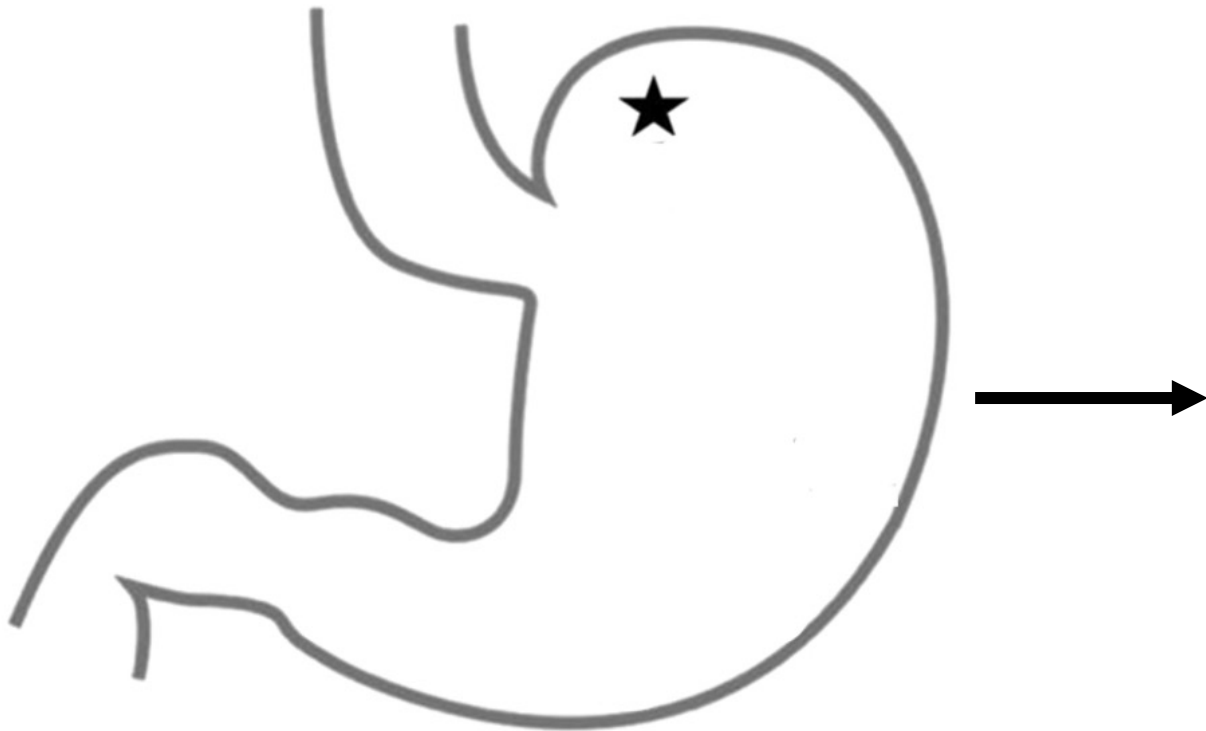
Right Relaxing Incision

Posterior  
Hiatal  
Closure



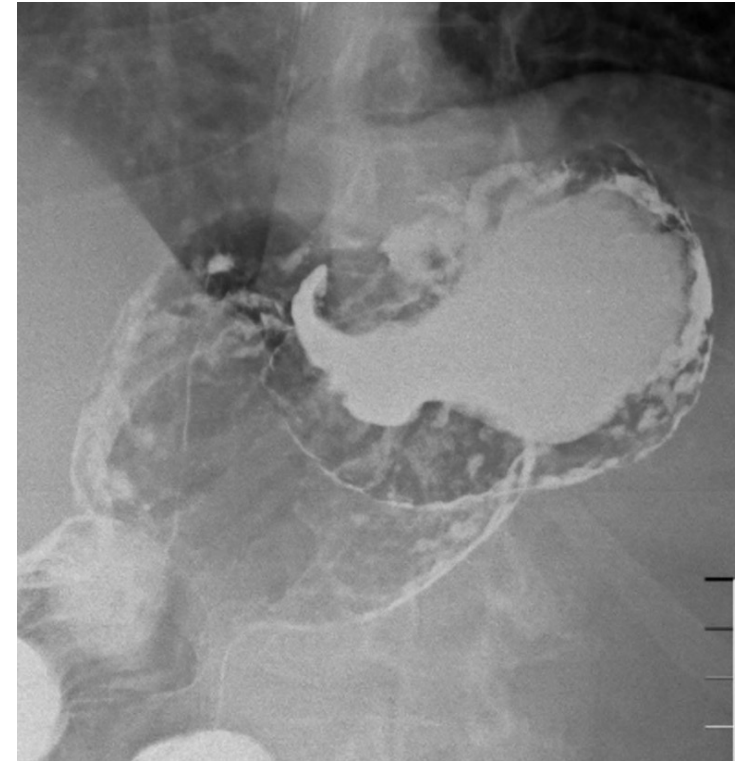
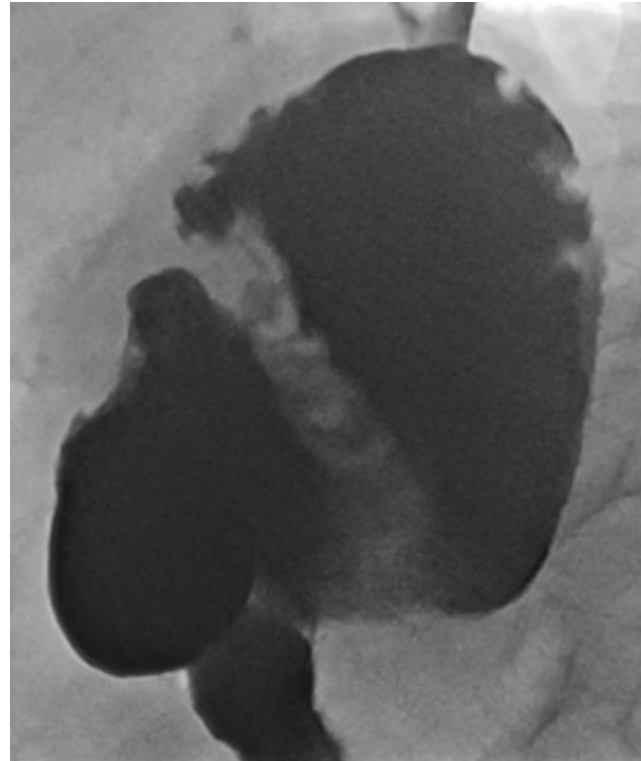
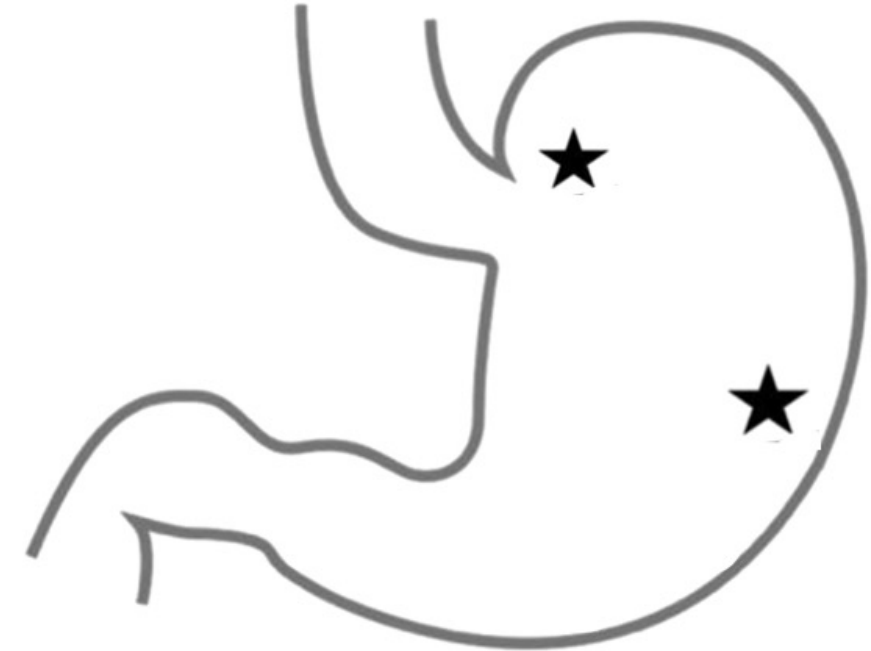


# Part III: Creating the Perfect Fundoplication

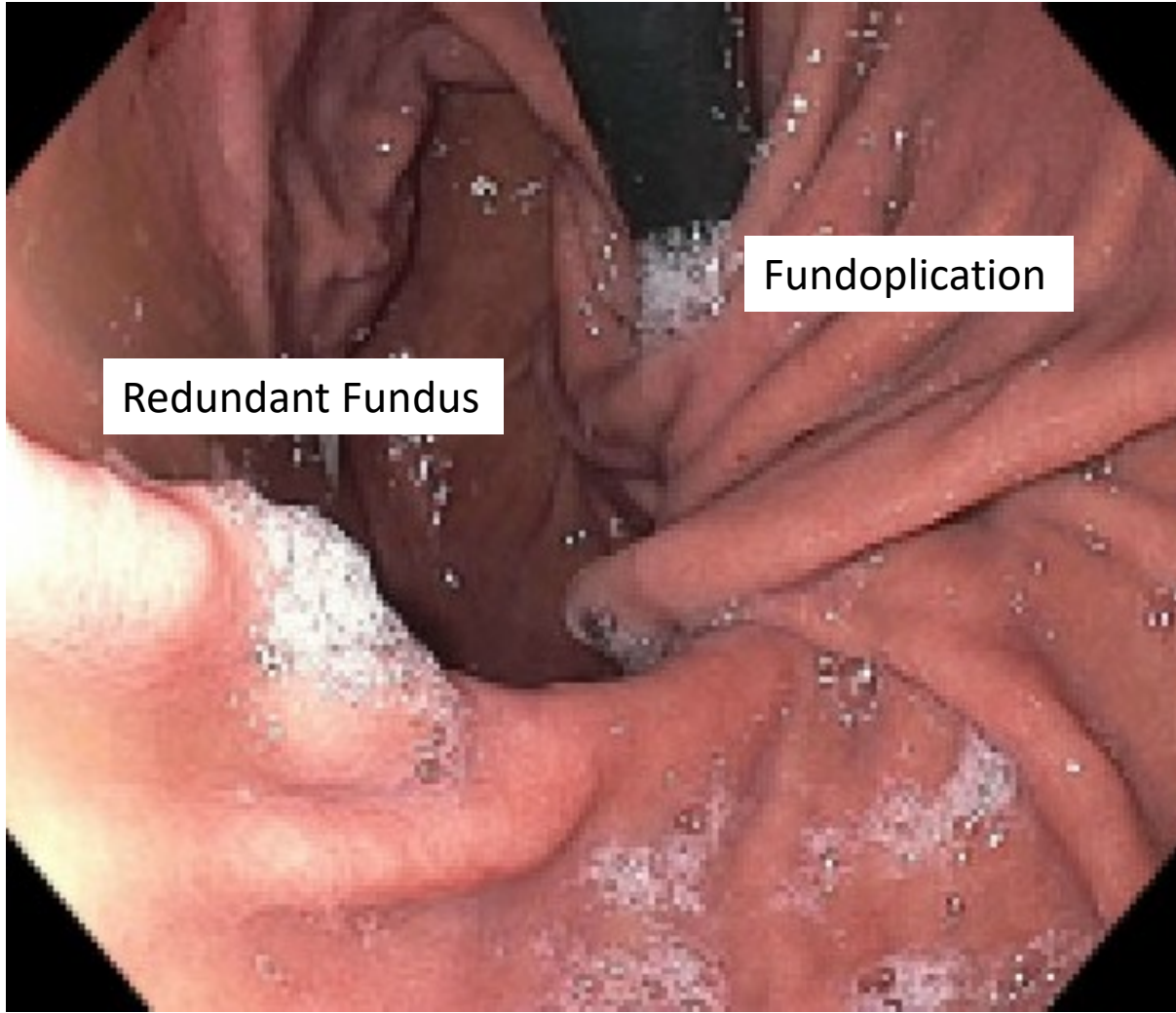
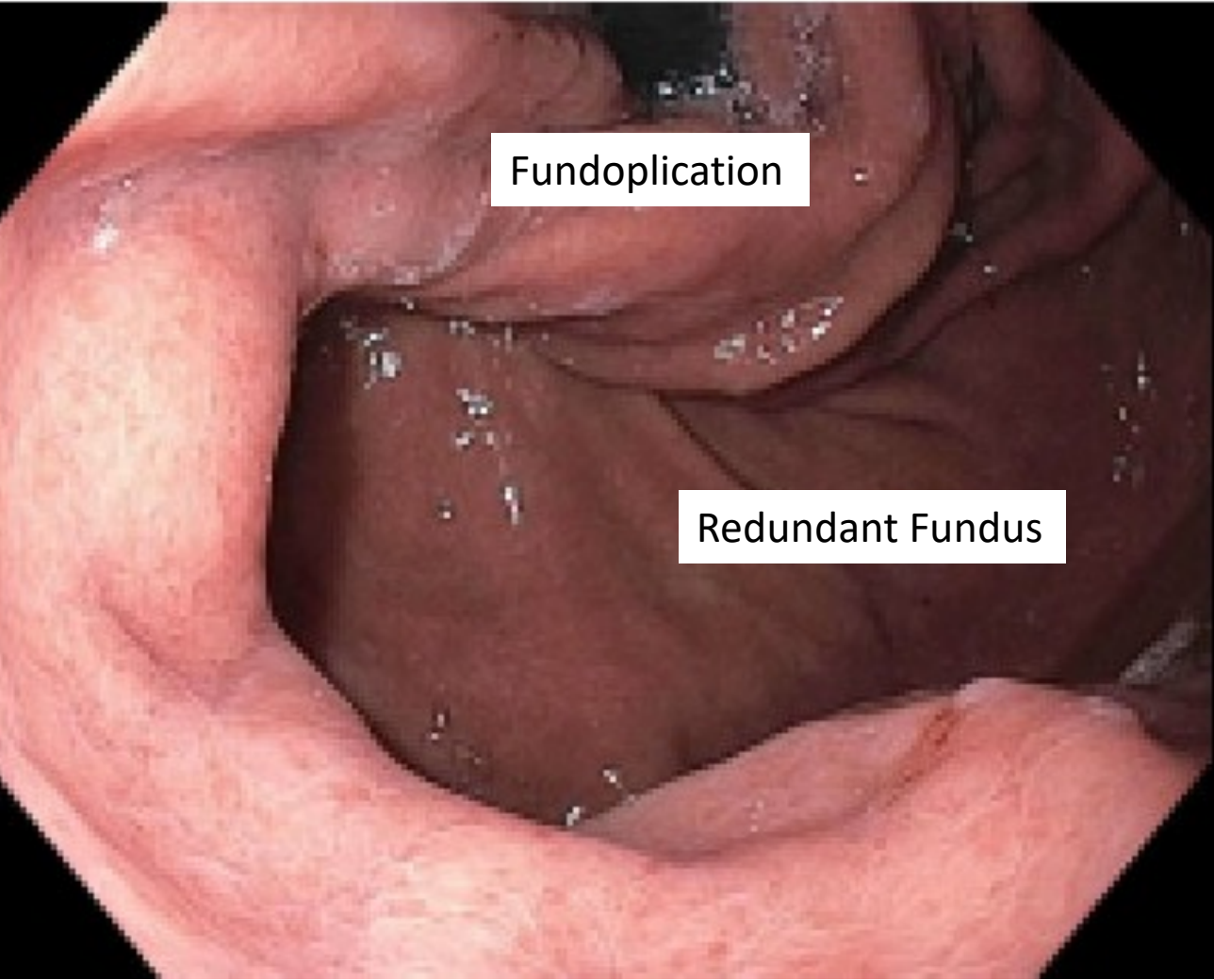


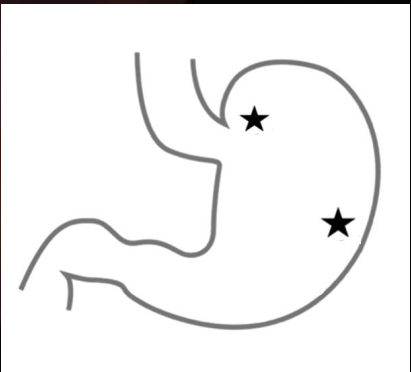
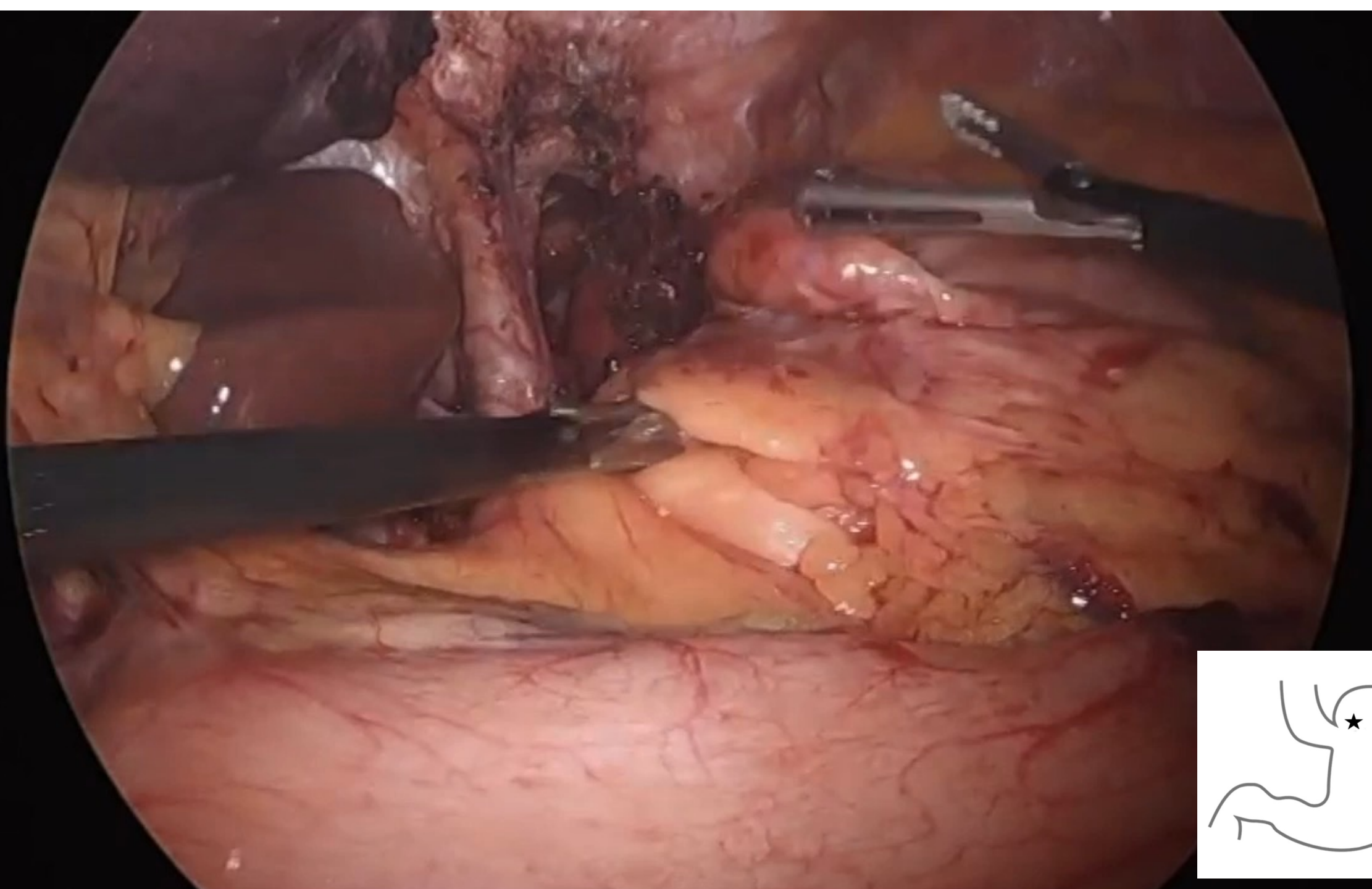
# Poorly Created Fundoplication

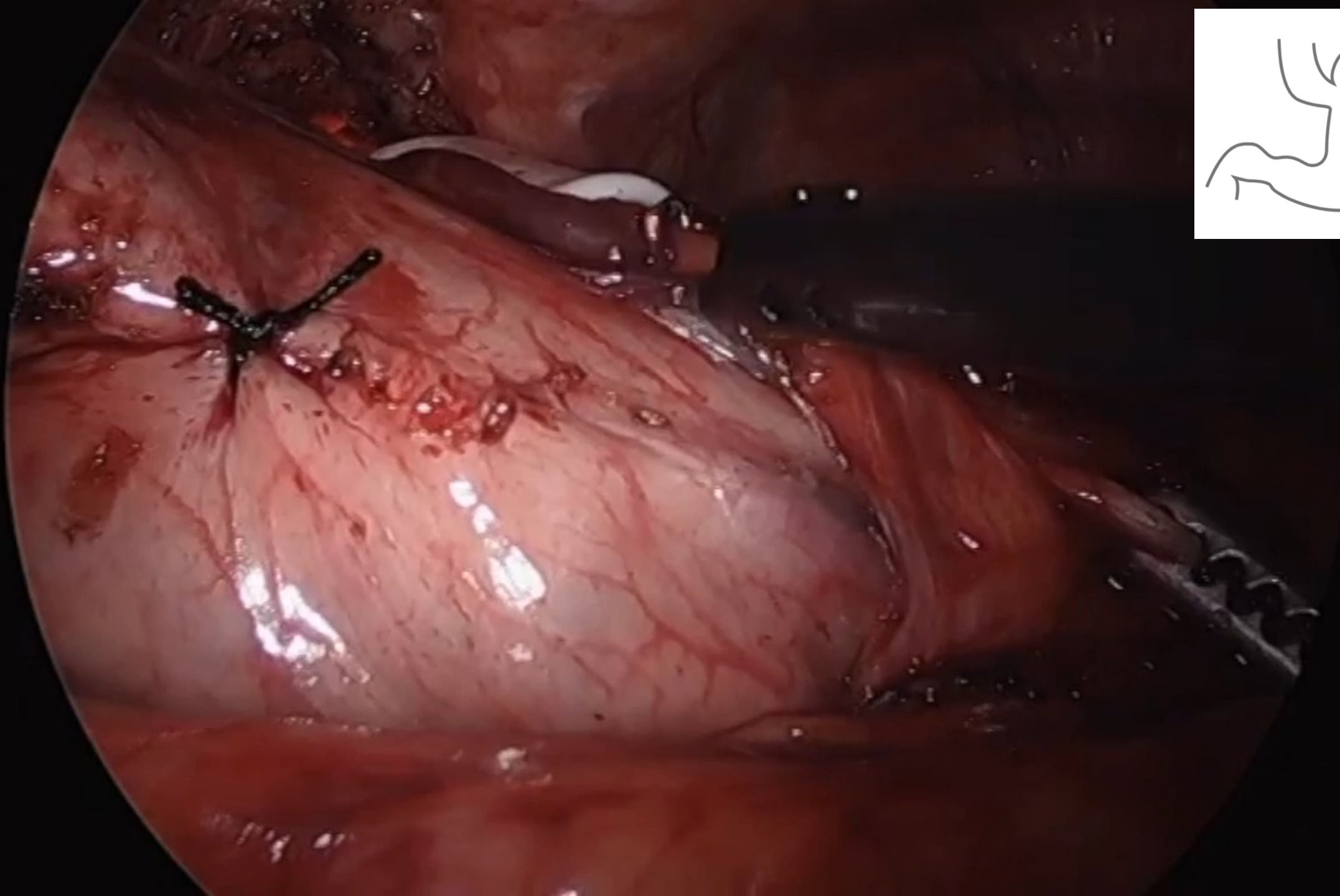
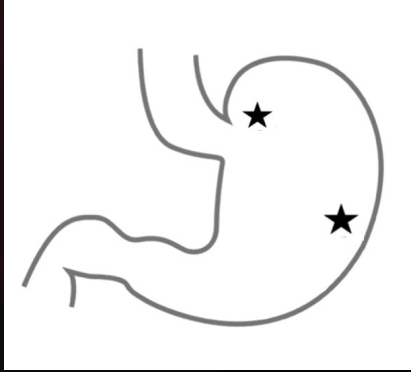
- Technical Factors – Failed PEH repair/antireflux surgery
- Fundoplication Involving Gastric Body → Redundant Fundus

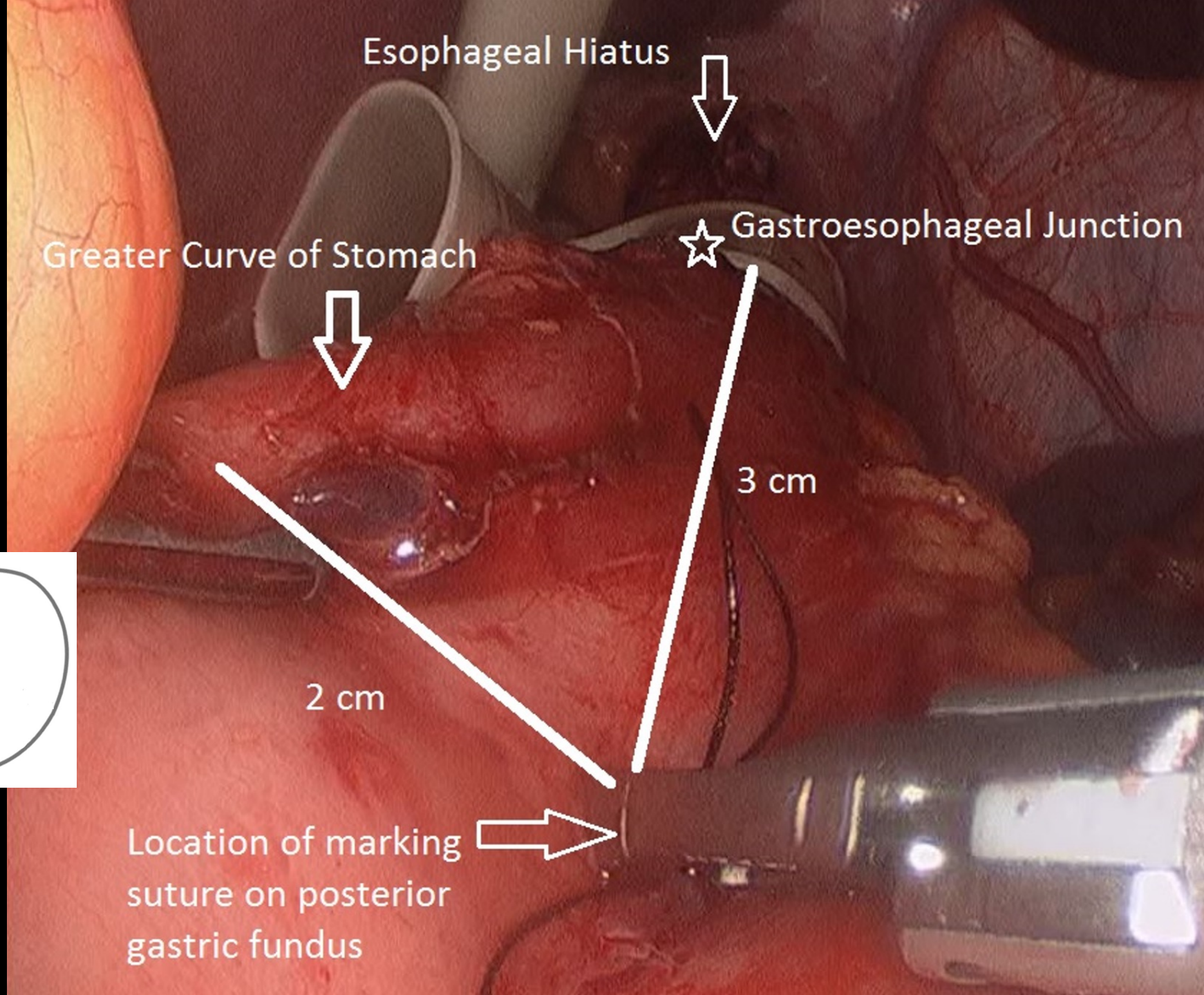


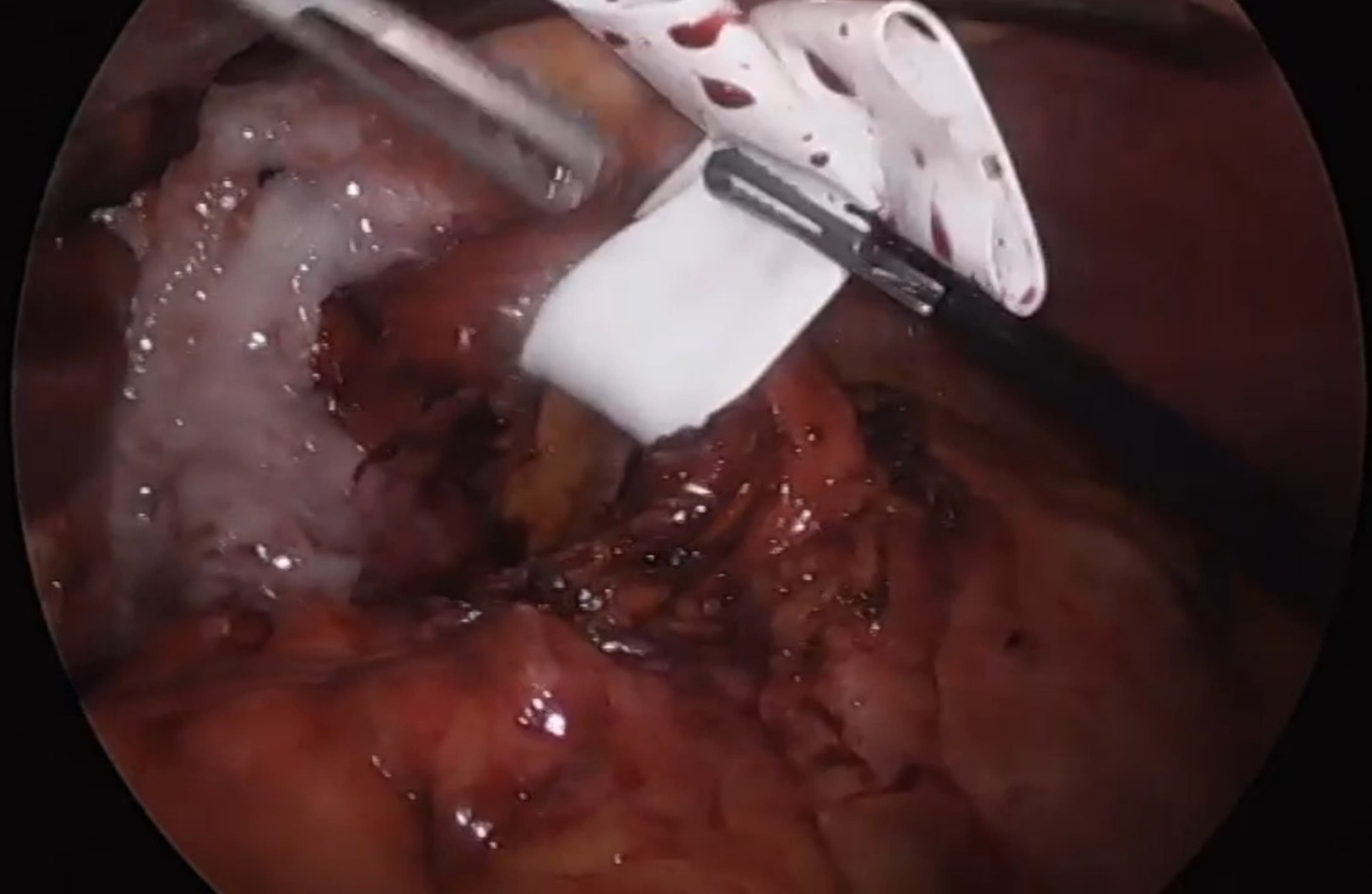
# Endoscopic View: Redundant Fundus









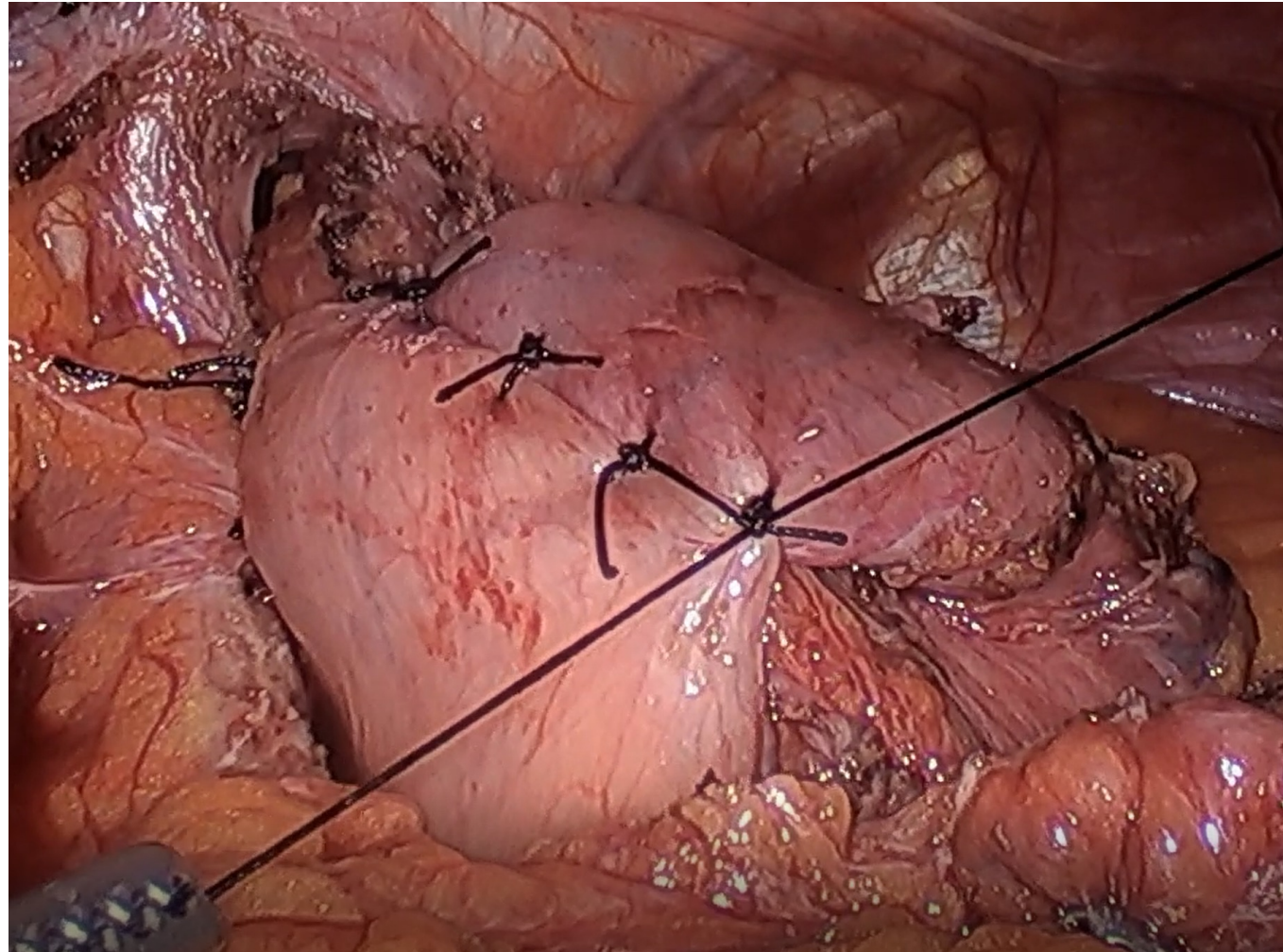


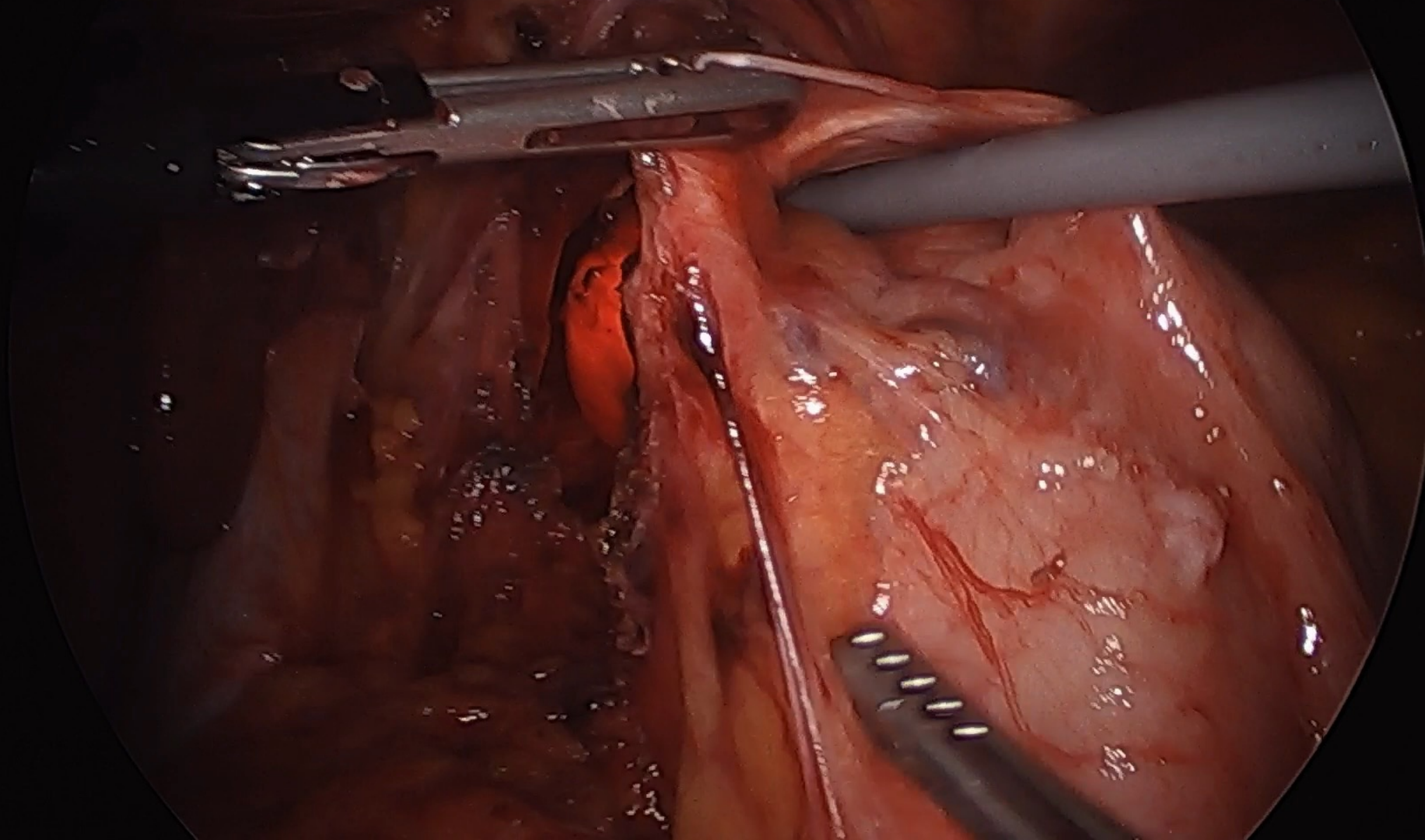
# Perfect Fundoplication: Suture Placement

## Inadequate Suture Depth

- Tissue Stretches
- 'Worn Out' Fundoplication

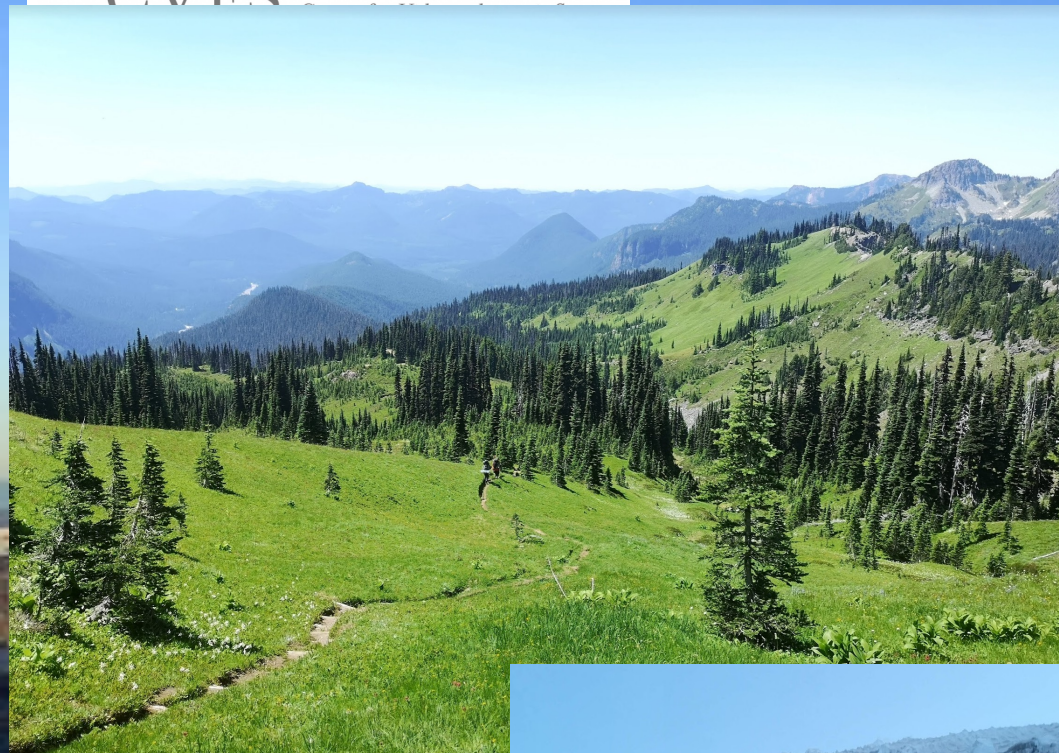
## Thick Seromuscular Bites





# *Presentation Recap.*

- High Operative Risk Patients → Consider Gastropexy
  - Esophagogastric obstructive symptoms
  - Acute gastric volvulus
- Excessive Tension at the Hiatus → Relaxing Incisions and Bio Mesh
- Create the Perfect Fundoplication → Geometry and Suture Placement
  - Marking Suture: 3 cm distal to GEJ; 2 cm off greater curve
  - Deep seromuscular tissue bites



# The use of crural relaxing incisions with biologic mesh reinforcement during laparoscopic repair of complex hiatal hernias

Oscar M. Crespin<sup>1</sup> · Robert B. Yates<sup>1</sup> · Ana V. Martin<sup>1</sup> · Carlos A. Pellegrini<sup>1</sup> · Brant K. Oelschlager<sup>1</sup>

N = 146 (94 primary; 52 recurrent)

Median Follow-up: 9 months (6 – 68 mos)

	Primary closure ( <i>n</i> = 36)	Primary closure + biologic mesh ( <i>n</i> = 94)	Relaxing incision + biologic mesh ( <i>n</i> = 16)
Radiologic recurrence	21 (58 %)	36 (38 %)	9 (56 %)
Symptomatic recurrence	6 (17 %)	3 (3 %)	3 (19 %)
Reoperation	1 (3 %)	1 (1 %)	2 (13 %)

# Reduction in Hiatal Tension with Relaxing Incision

