



# "Comparison of Side to Side Staple Versus Hand Sewn Gastro Esophageal Anastomosis in Cases of Oesophagectomy in CA Esophagus"

ABDUL BASEER

Consultant Thoracic Surgeon

Lady Reading Hospital Peshawar KPK Pakistan





**Khyber Pass**



**Lady Reading Hospital Peshawar, Med Surg building**



**Lady Reading Hospital Peshawar, Pakistan, Surgical and Cardiology Block**



**Lady Reading Hospital Peshawar, Pakistan, Bolton Block**



# INTRODUCTION

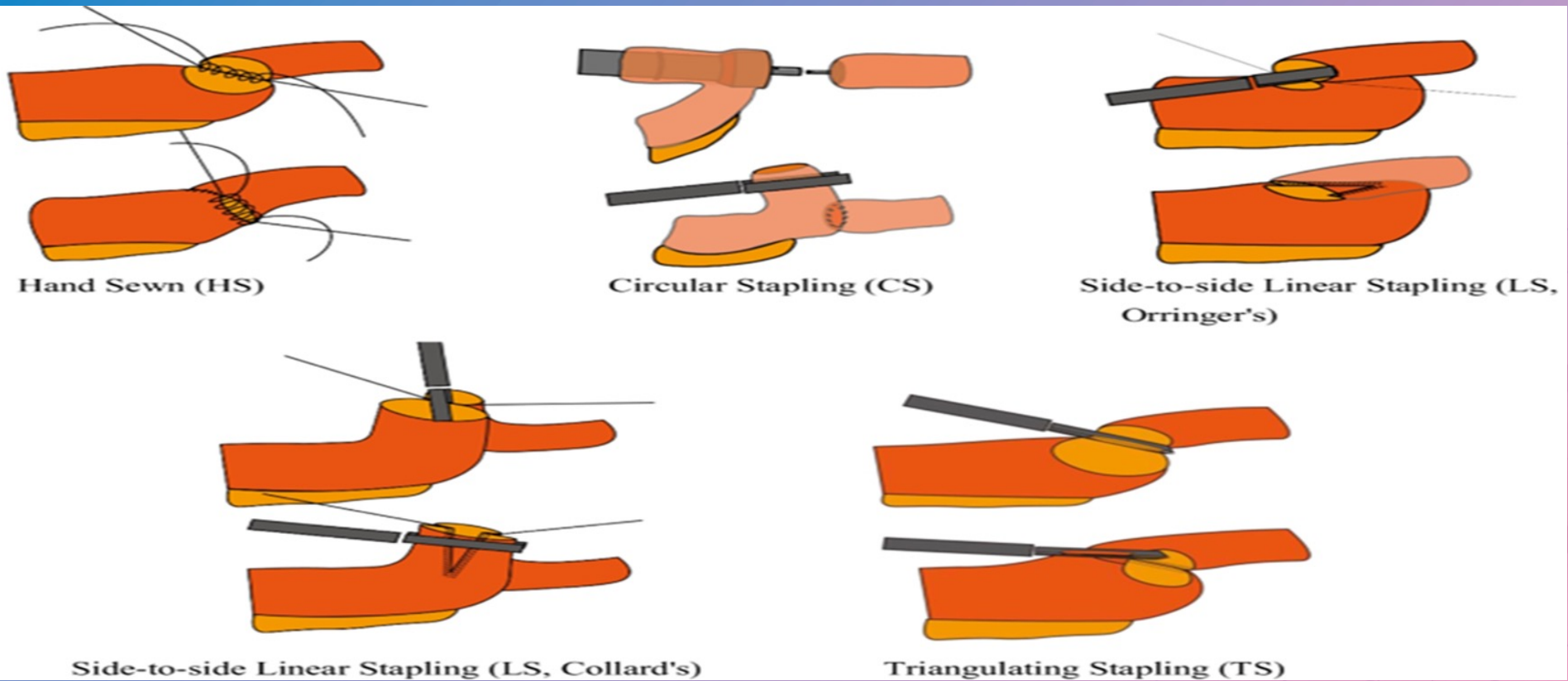
- Esophageal cancer is one of the most prevalent gastrointestinal malignancies worldwide
- Sixth common cause of cancer-associated mortality
- At present, esophagectomy remains to be the standard in treating of esophageal carcinoma
- After resection of the esophagus, in order to restore the continuity of alimentary tract, stomach is used



- Success of such esophago-gastric anastomosis correlates very closely with the outcome of the patient, which includes anastomotic leakage and/ or stricture formation
- Leakage of anastomosis is most feared as well as frequently observed complication that leads to increase in hospitalization stays, playing a substantial role in early post-operative morbidity.



## Various anastomotic techniques are used for minimizing such risks





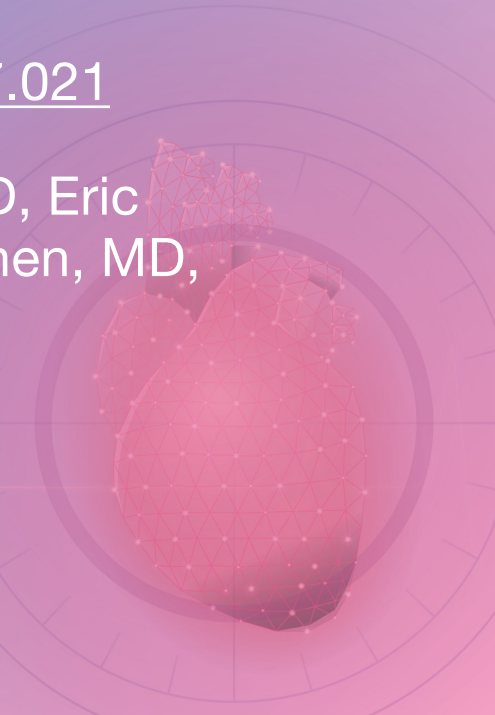
# Hand-sewn versus stapled anastomoses for esophagectomy: We will probably never know which is better

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Tommi Järvinen, MD, PhD,\* Jonathan Cools-Lartigue, MD, Eric Robinson, MD, BS, Jari Räsänen, MD, PhD, and Ilkka Ilonen, MD, PhD

META-ANALYSIS STUDY



# RESULTS

Total 19 studies

2123 patients included in the meta-analysis

102% higher incidence of anastomotic leak after hand-sewn anastomosis compared with stapled anastomosis (odds ratio [OR], 2.02; 95% confidence interval [CI], 1.48-2.75)

Anastomotic stricture rate was 31% higher with hand-sewn anastomosis (OR, 1.31; 95% CI, 1.00-1.7)

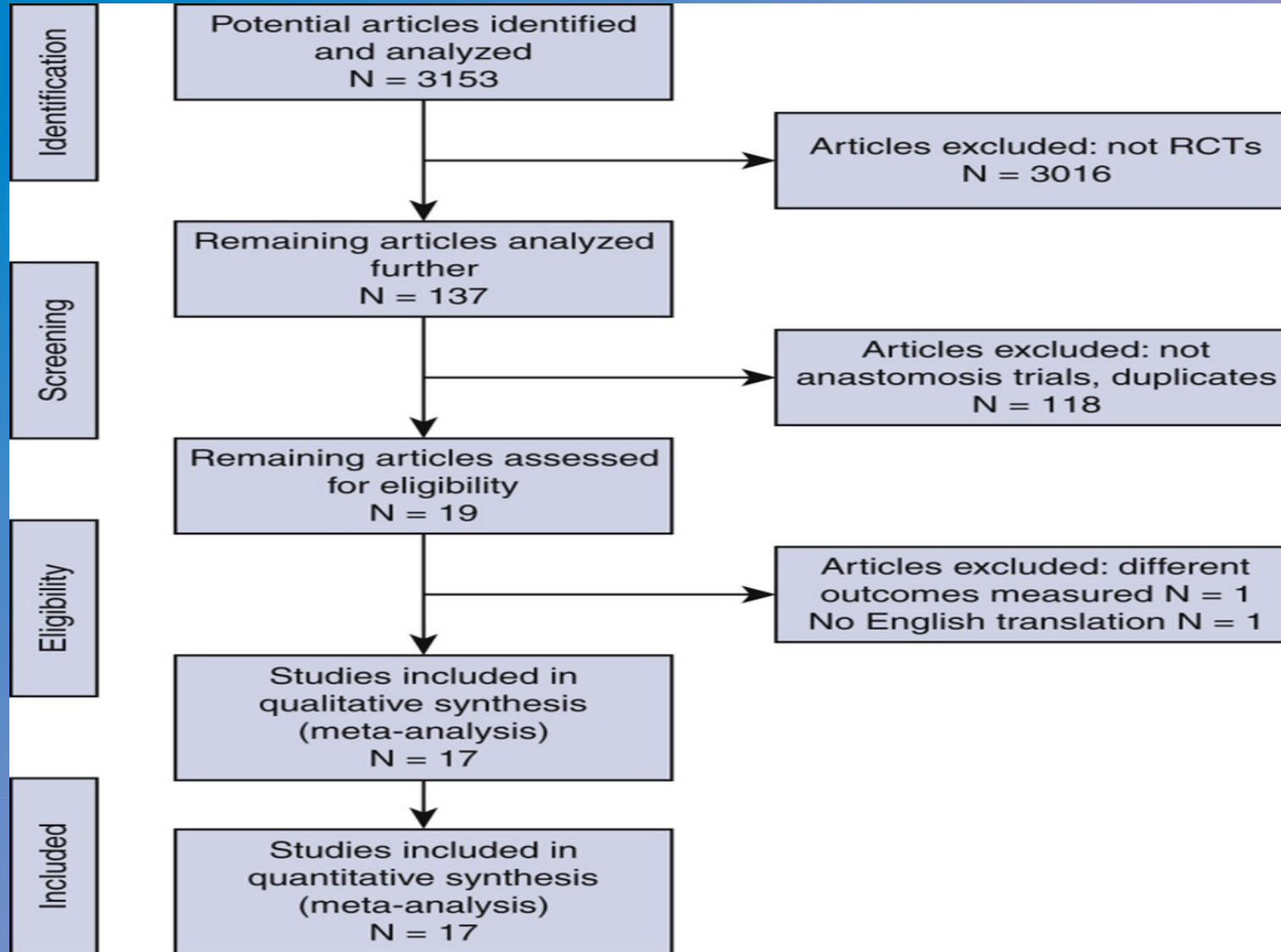
Thirty-day mortality did not show statistical difference (OR, 0.68; 95% CI, 0.45-1.04).

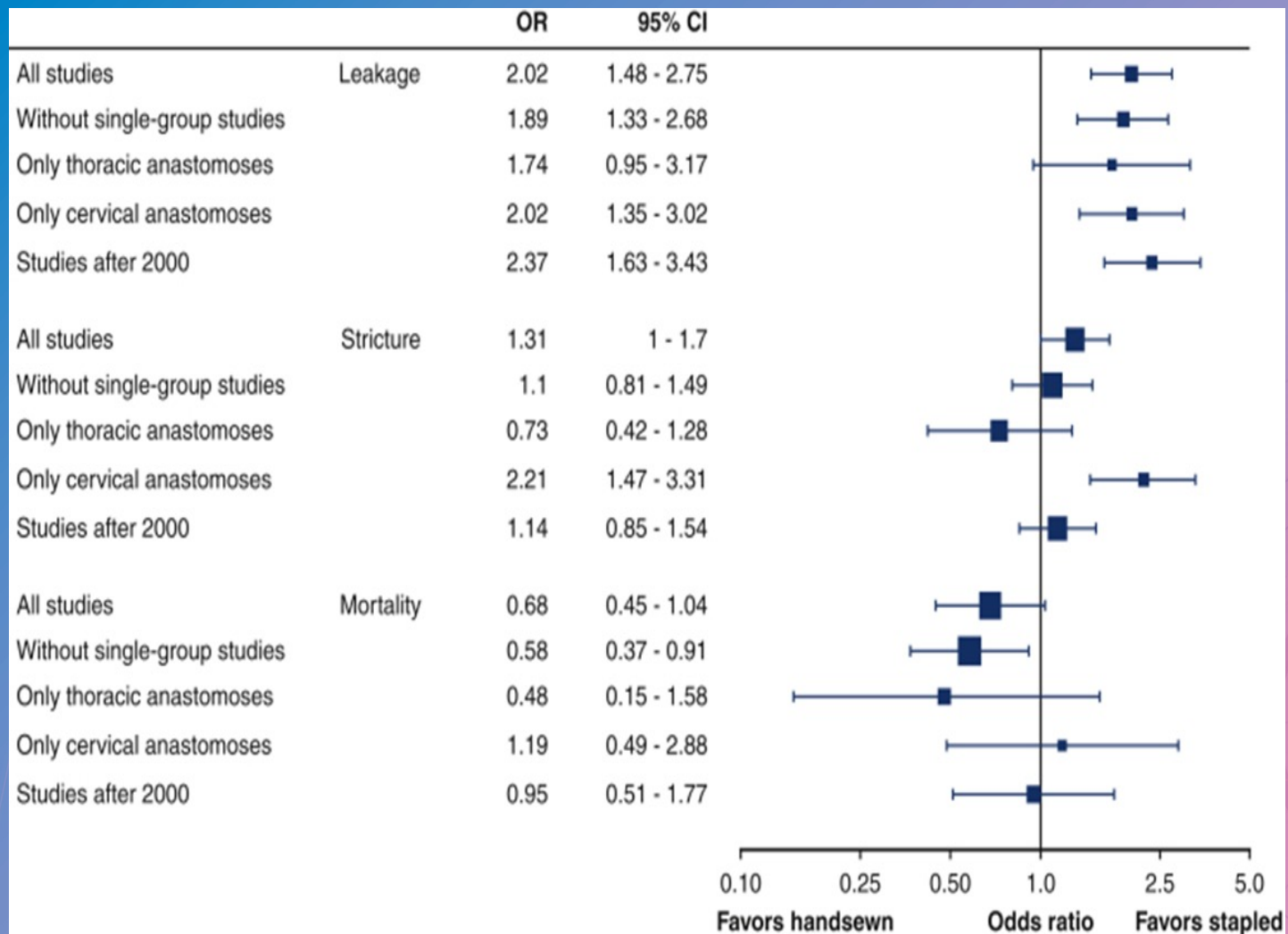
None of anastomotic leak rate, anastomotic stricture rate, or 30-day overall survival differed between anastomotic techniques in studies with only thoracic anastomoses.

In cervical position hand-sewn anastomosis was associated with higher rate of anastomotic leak (OR, 2.02; 95% CI, 1.33-3.05) and stricture (OR, 1.77; 95% CI, 1.15-2.72), but no difference in 30- day mortality.







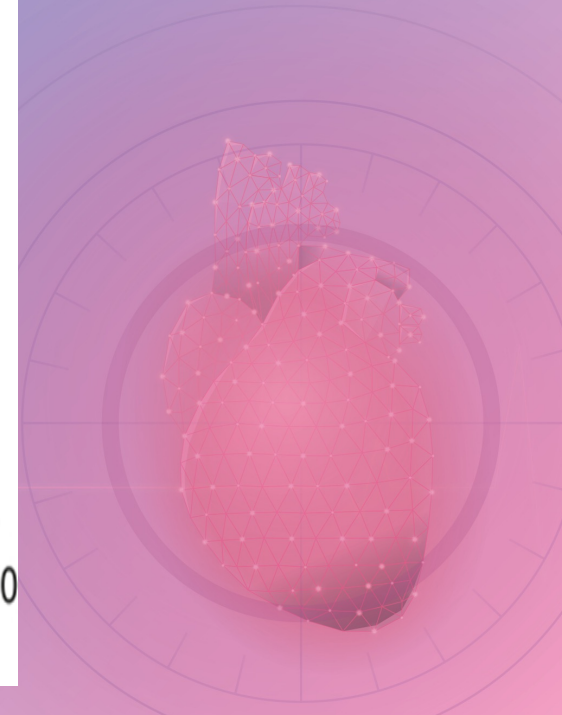
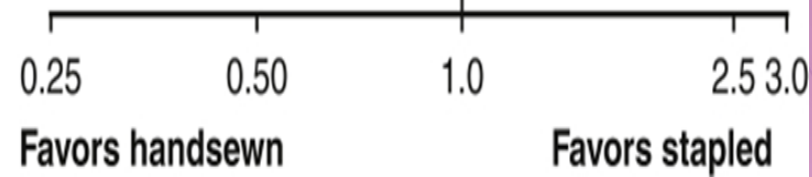


## Hand-sewn vs. Stapled anastomosis

Anastomotic leak

Anastomotic stricture

30-day mortality



## Hand-sewn versus stapled anastomosis in esophagectomy: A systemic review and meta-analysis

17 single-center RCTs  
2308 patients

1160 Hand-sewn anastomosis



1148 Stapled anastomosis



More anastomotic leak with hand-sewn anastomosis



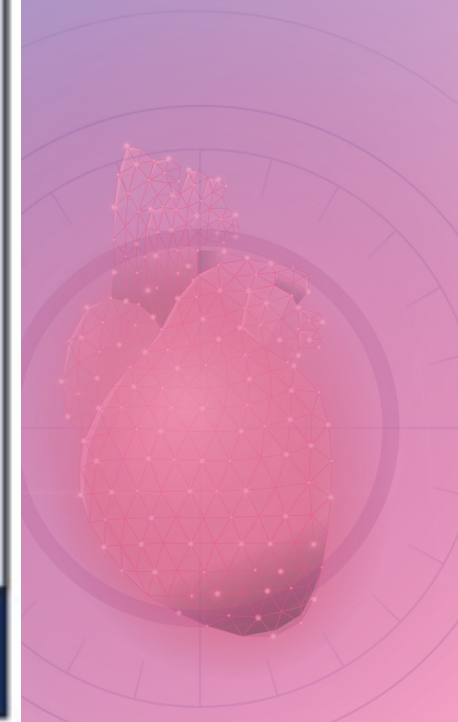
OR = 2.02  
95% CI = 1.48-2.75

More anastomotic stricture with hand-sewn anastomosis



OR = 1.31  
95% CI = 1.00-1.71

**A strong signal for more anastomotic complications with hand-sewn technique,  
need for a large multi-institutional RCT for conclusive answers**





# "Comparison of Side to Side Staple Versus Hand Sewn Gastro Esophageal Anastomosis in Cases of Oesophagectomy in CA Esophagus"

## Objective:

To compare outcomes of side to side linear stapling versus end to side hand-sewn cervical esophago-gastric anastomosis in patients who underwent esophagectomy for carcinoma esophagus





## Study Design:

Cross-sectional study

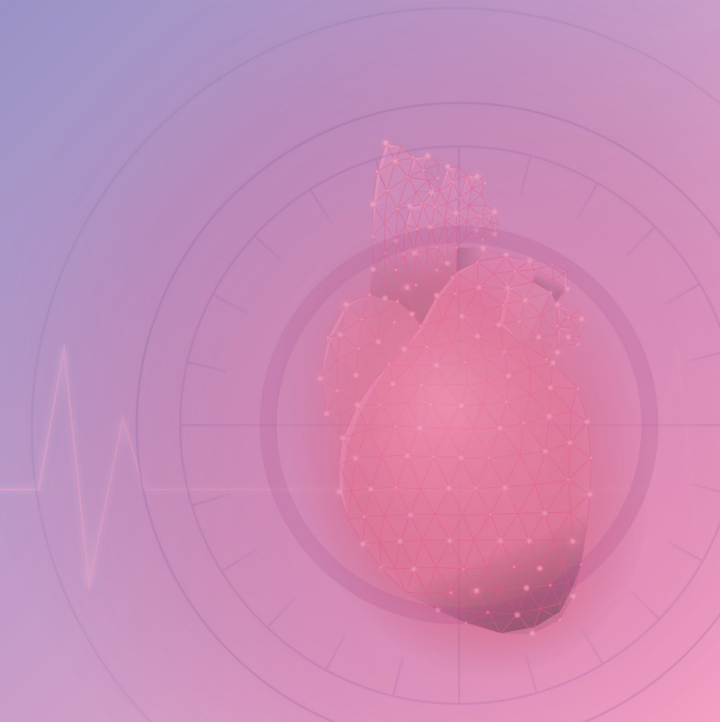
## Place and Duration of Study:

Lady Reading Hospital, Peshawar Pakistan, from July 2019 to June 2020



# METHODOLOGY

- Retrospective study
- Patient medical records retrieved
- Both gender and all ages
- Age range 15-80 years



- Patients having inoperable esophageal carcinoma or with having thoracic anastomosis were excluded from the study
- Patients lost to follow up or with incomplete medical records were also excluded
- The technique used in each patient undergoing esophagectomy and esophago-gastric anastomosis was done at random.





- All of the surgical procedures were carried out by a single surgeon.
- Specimen was sent for histopathology in each of the case
- During surgery, location of the carcinoma was also confirmed
- Followed up done in all cases for anastomotic leakage and / or stricture formation



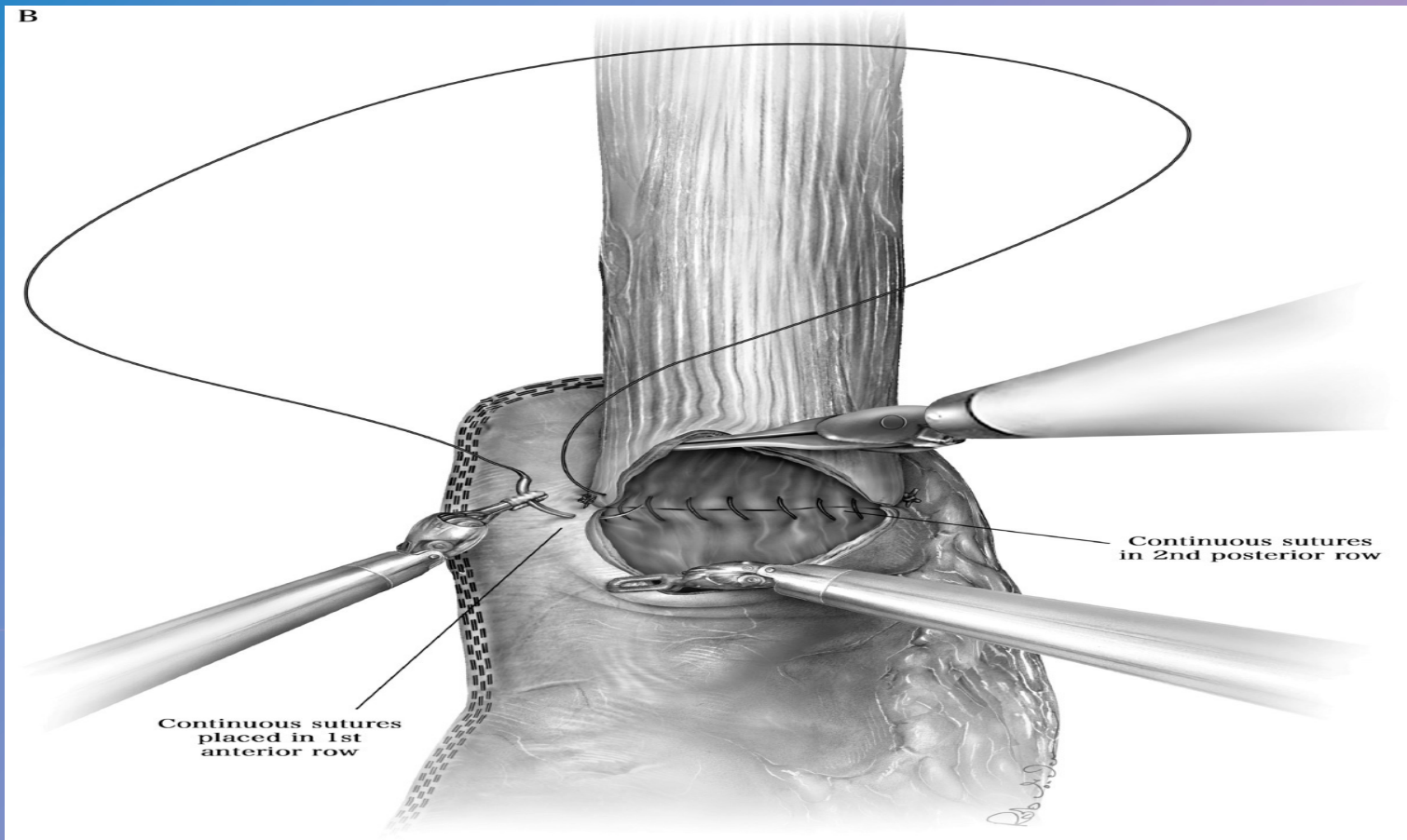


# OPERATIVE TECHNIQUE FOR CERVICAL ESOPHAGEAL-GASTRIC ANASTOMOSIS

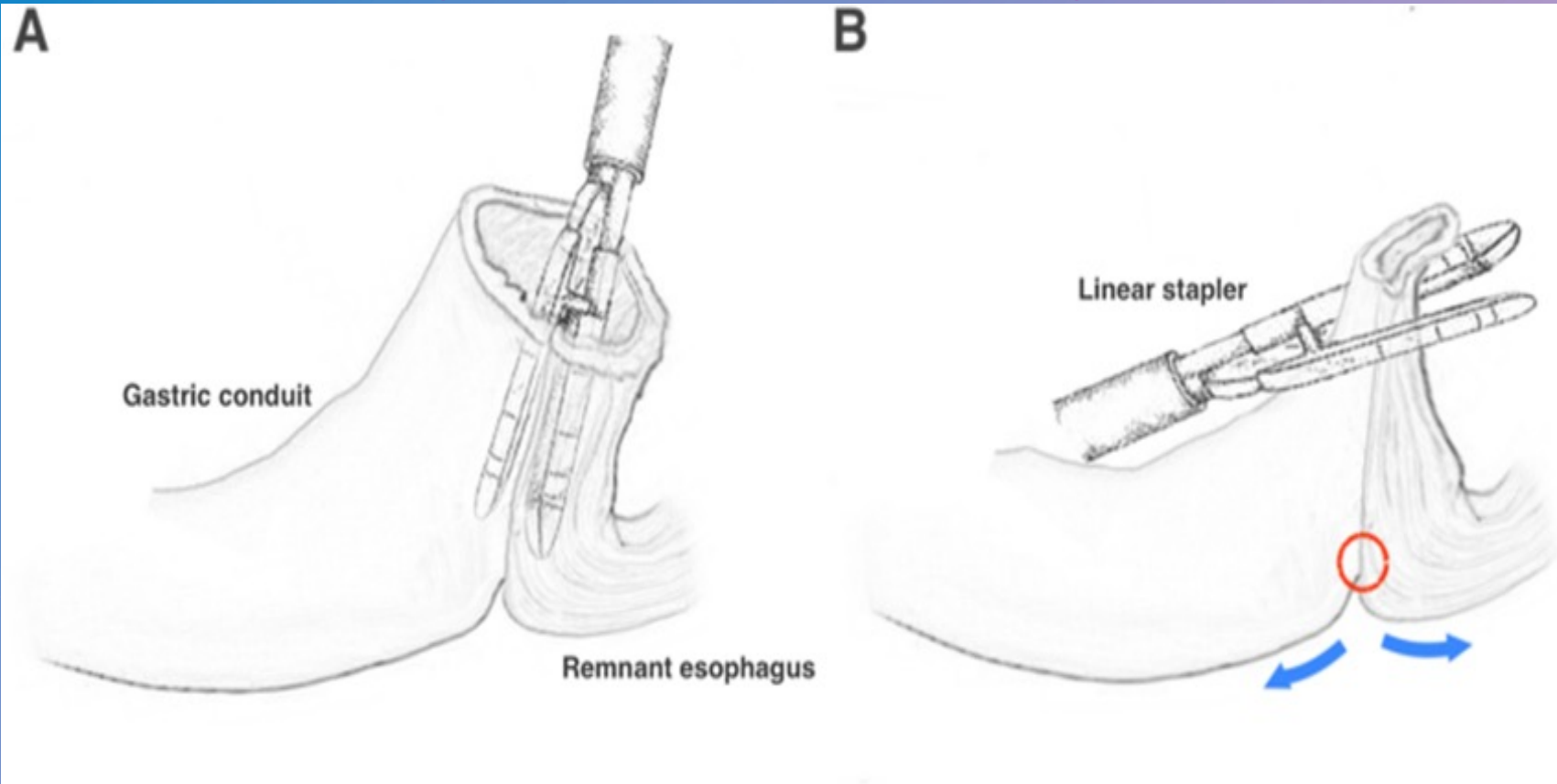


# HAND SEWN

End to side single layer continuous suture



# SIDE TO SIDE LINEAR STAPLING (LS COLLARDS)

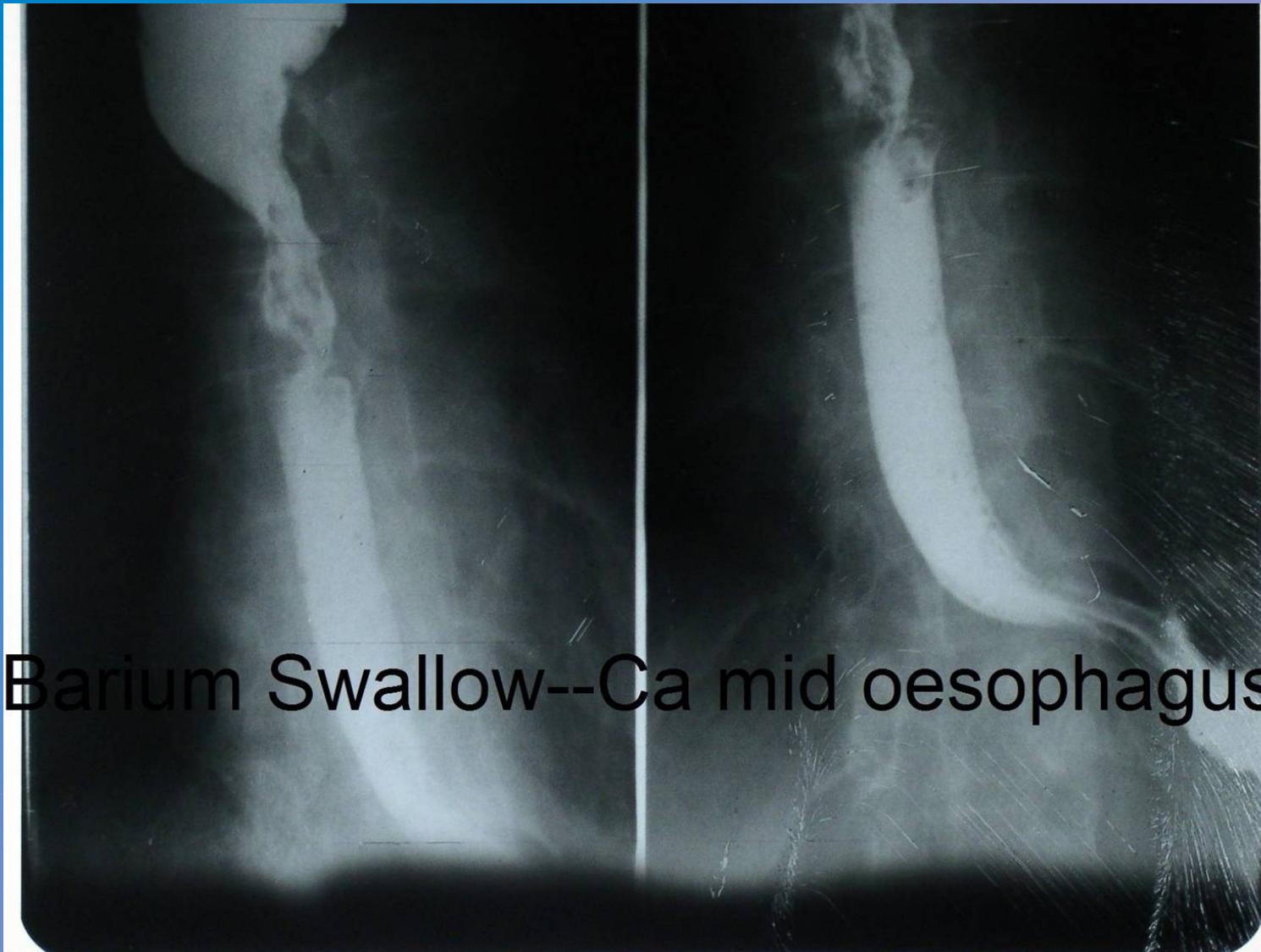




# CASE

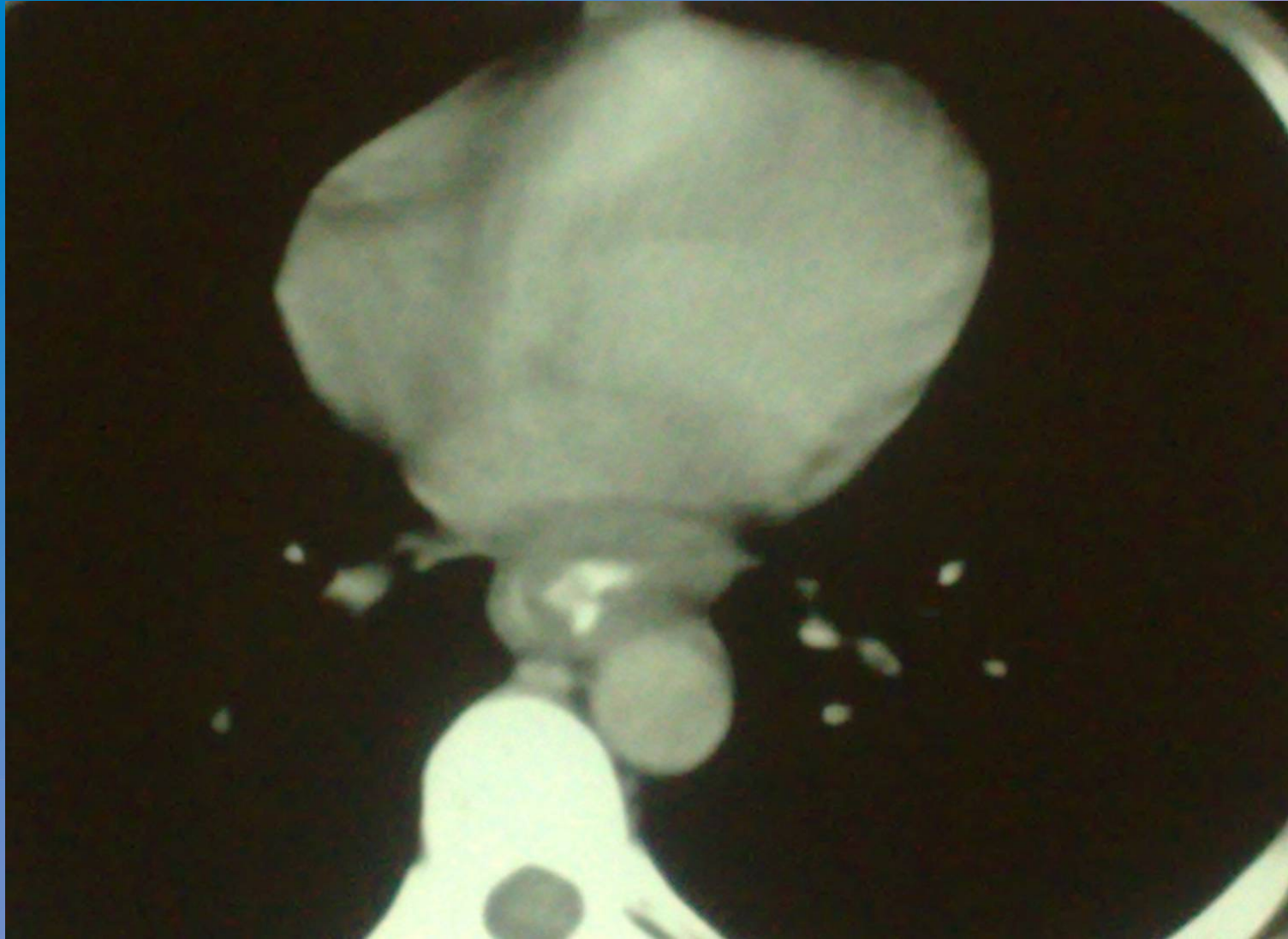
A 32 year old lady with progressive dysphagia, dry cough and weight loss for 6 months, underwent endoscopy and biopsy ,endoscopy reported ulcerated growth at 28 cm from incisor, histopathology reported moderately differentiated squamous cell carcinoma

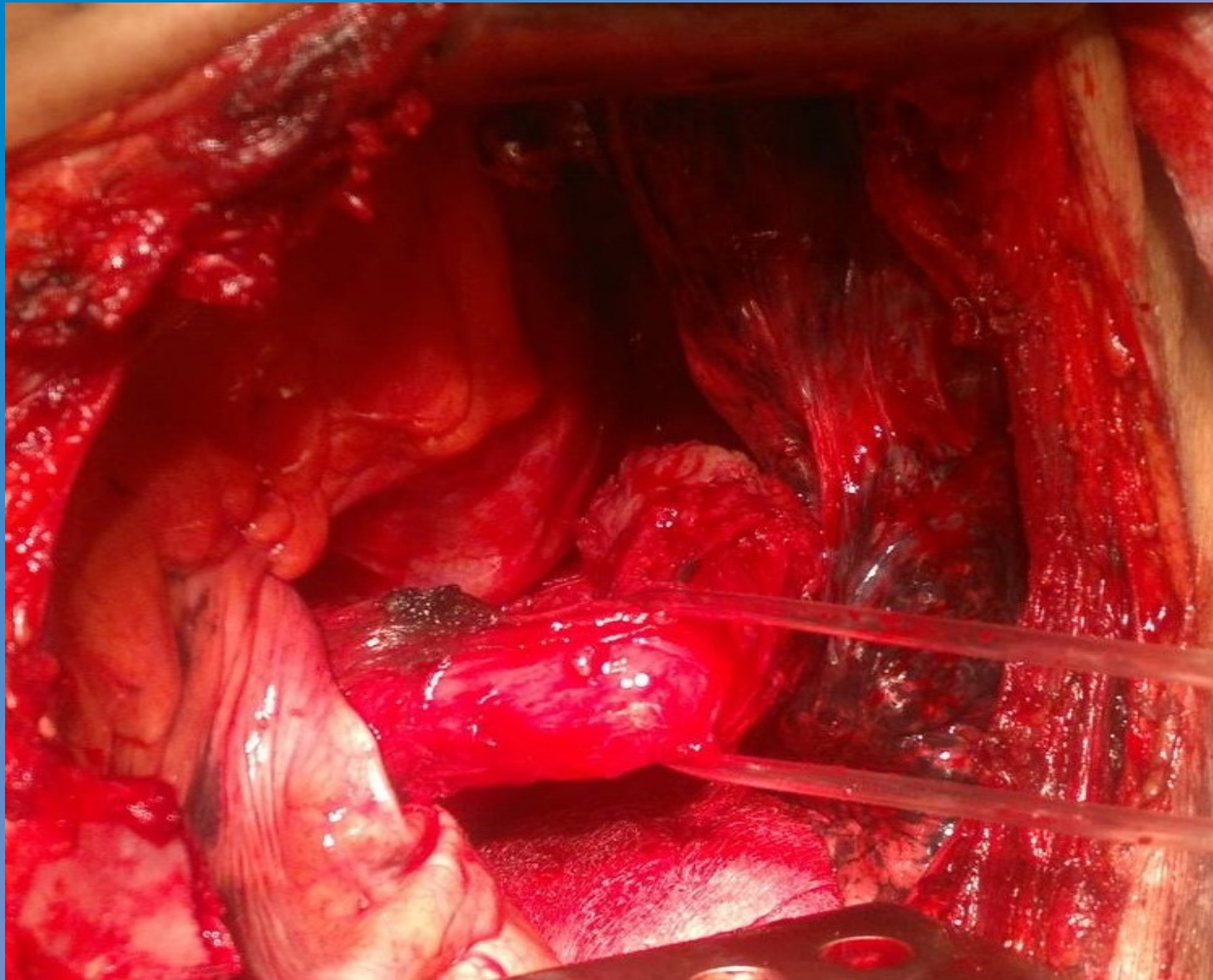




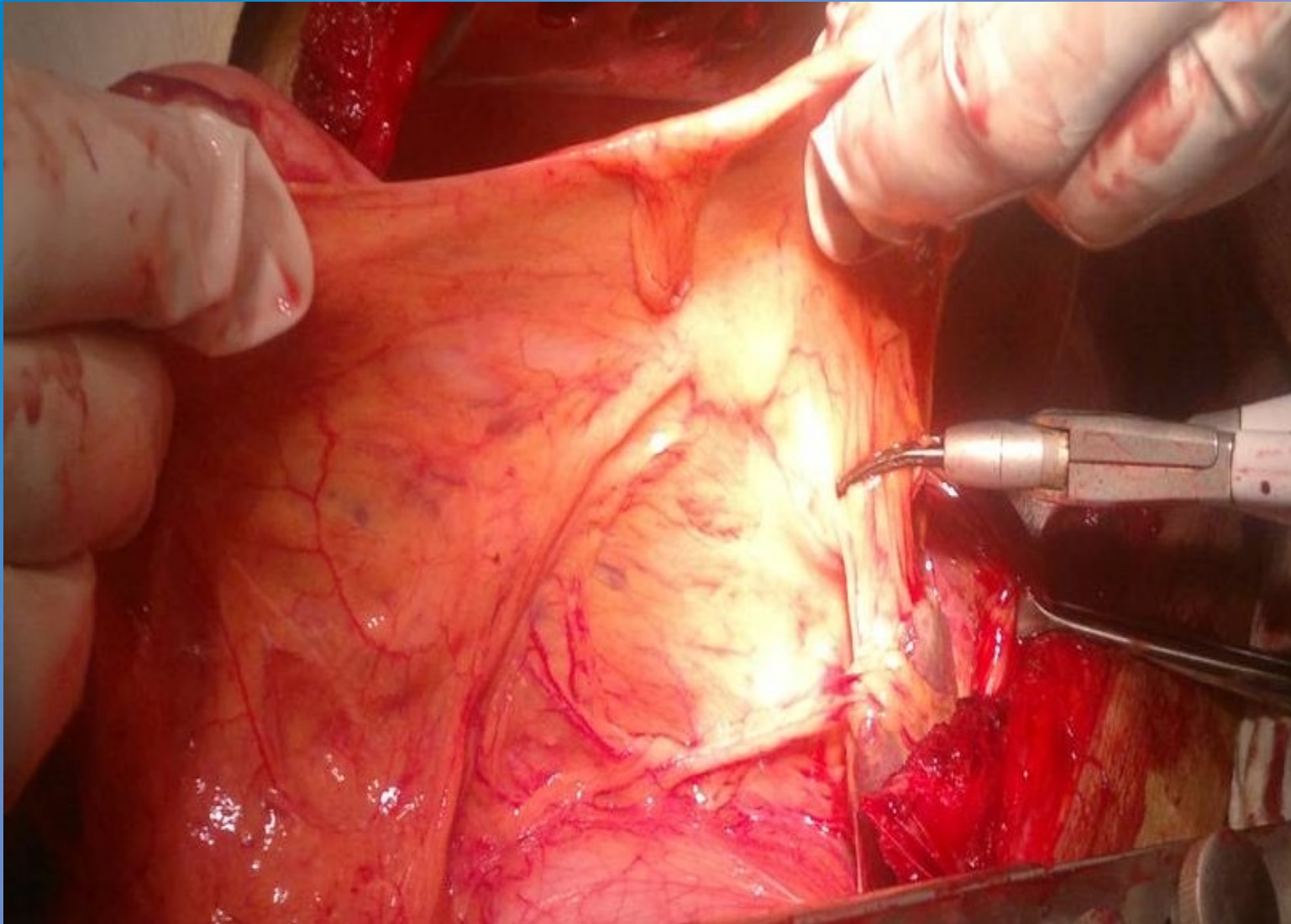
Barium Swallow--Ca mid oesophagus

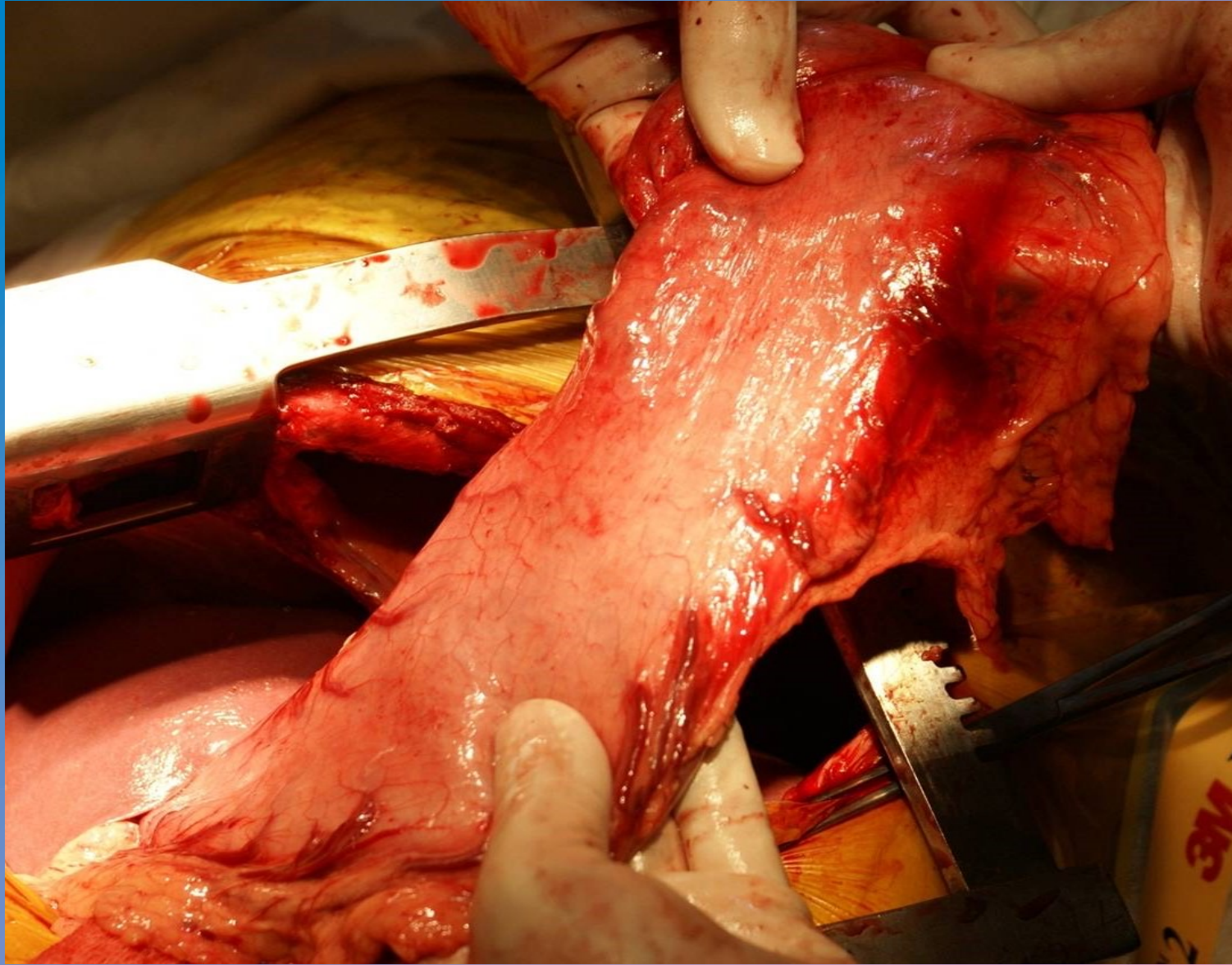


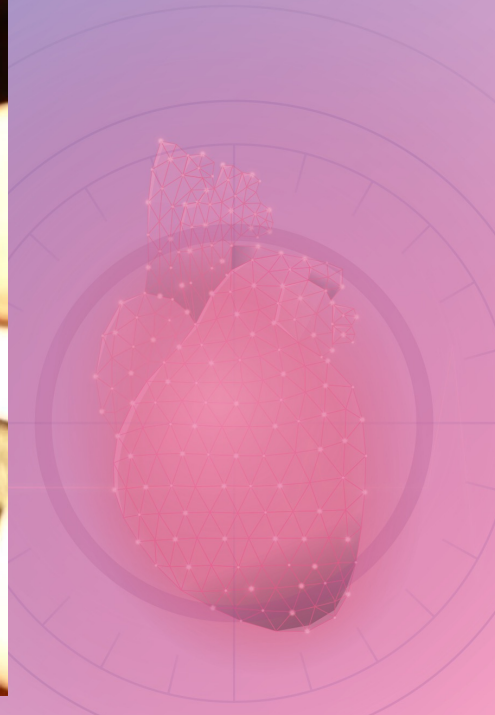
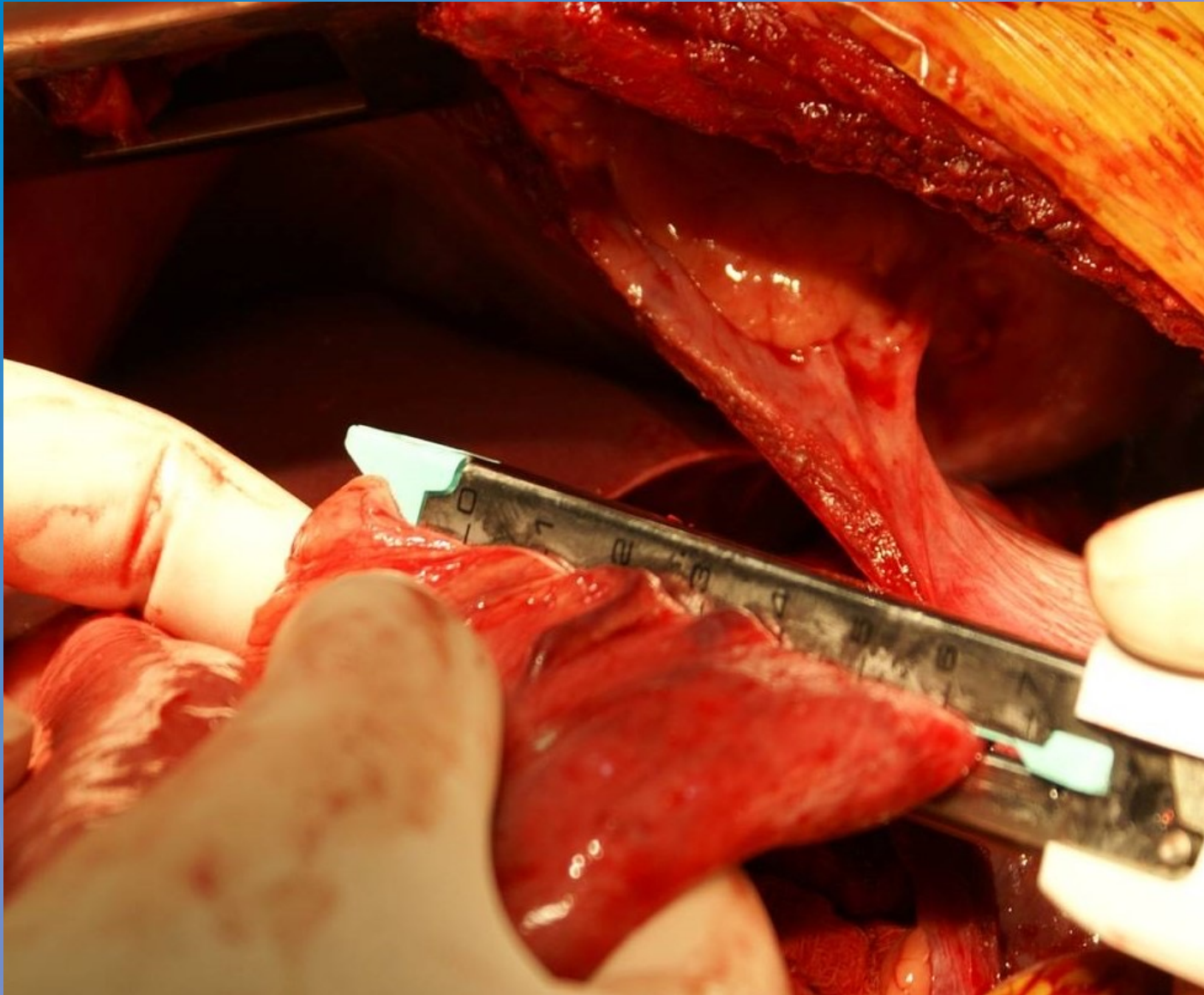


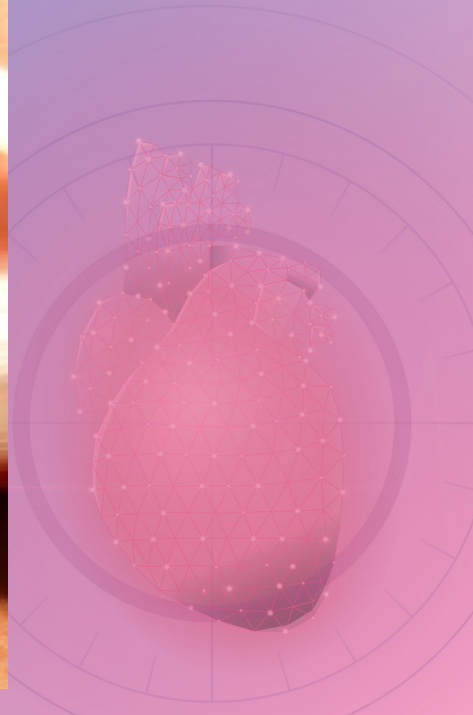
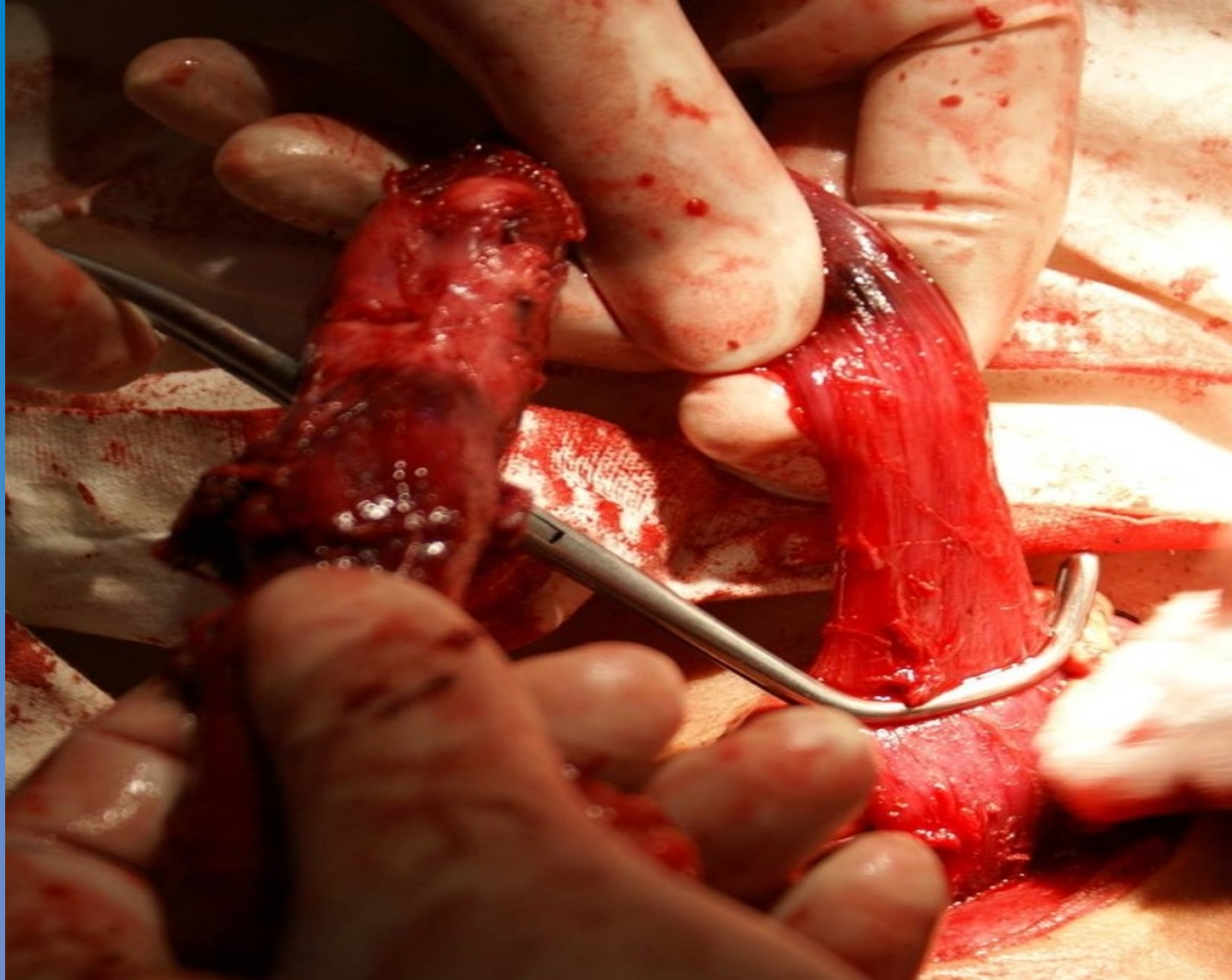


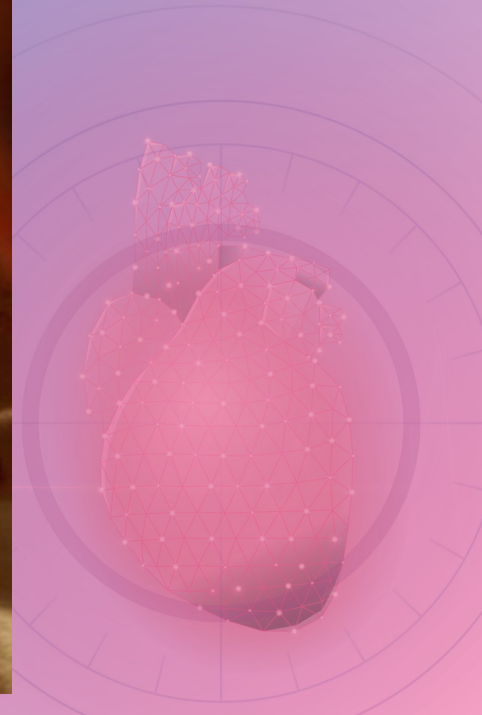
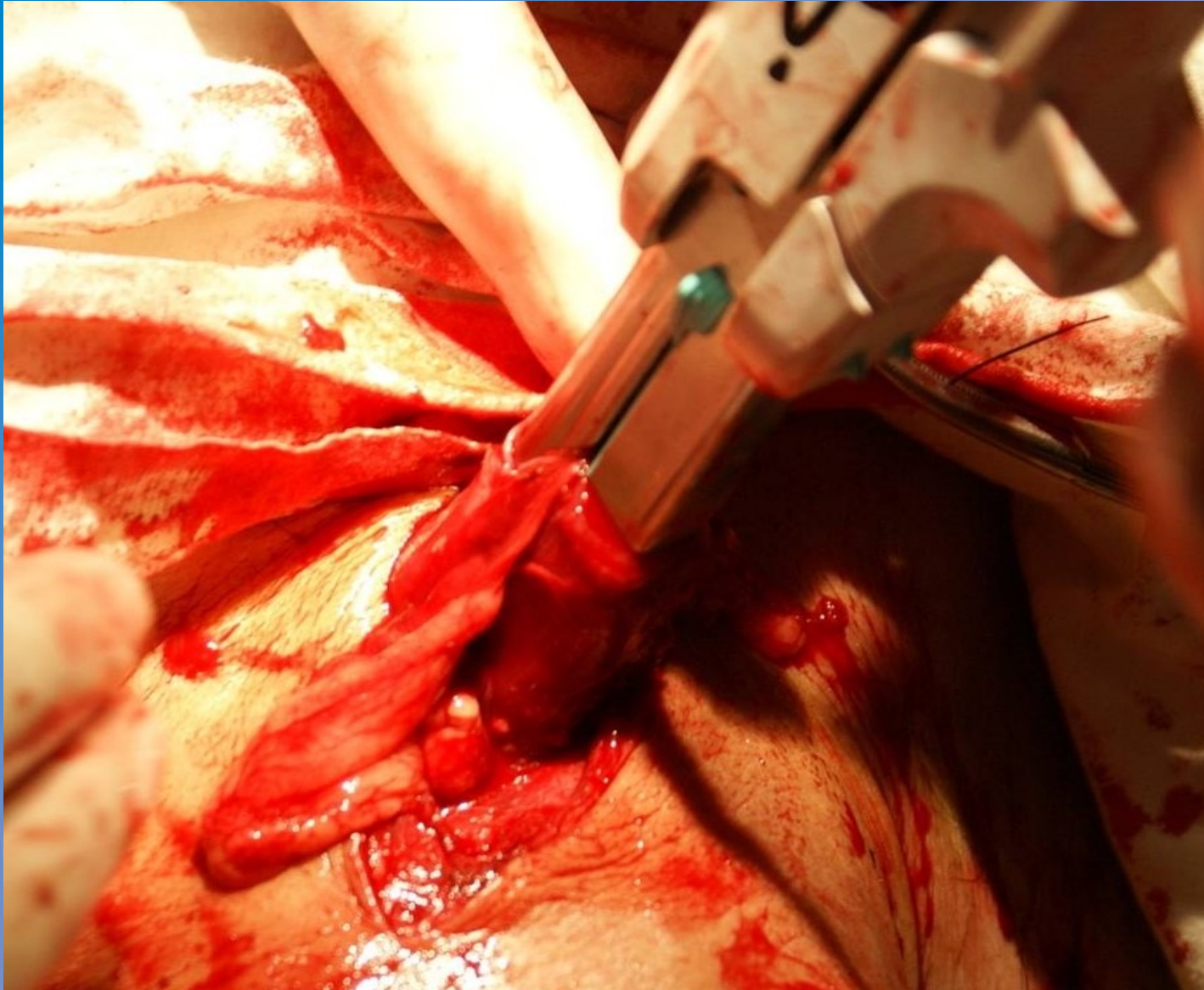


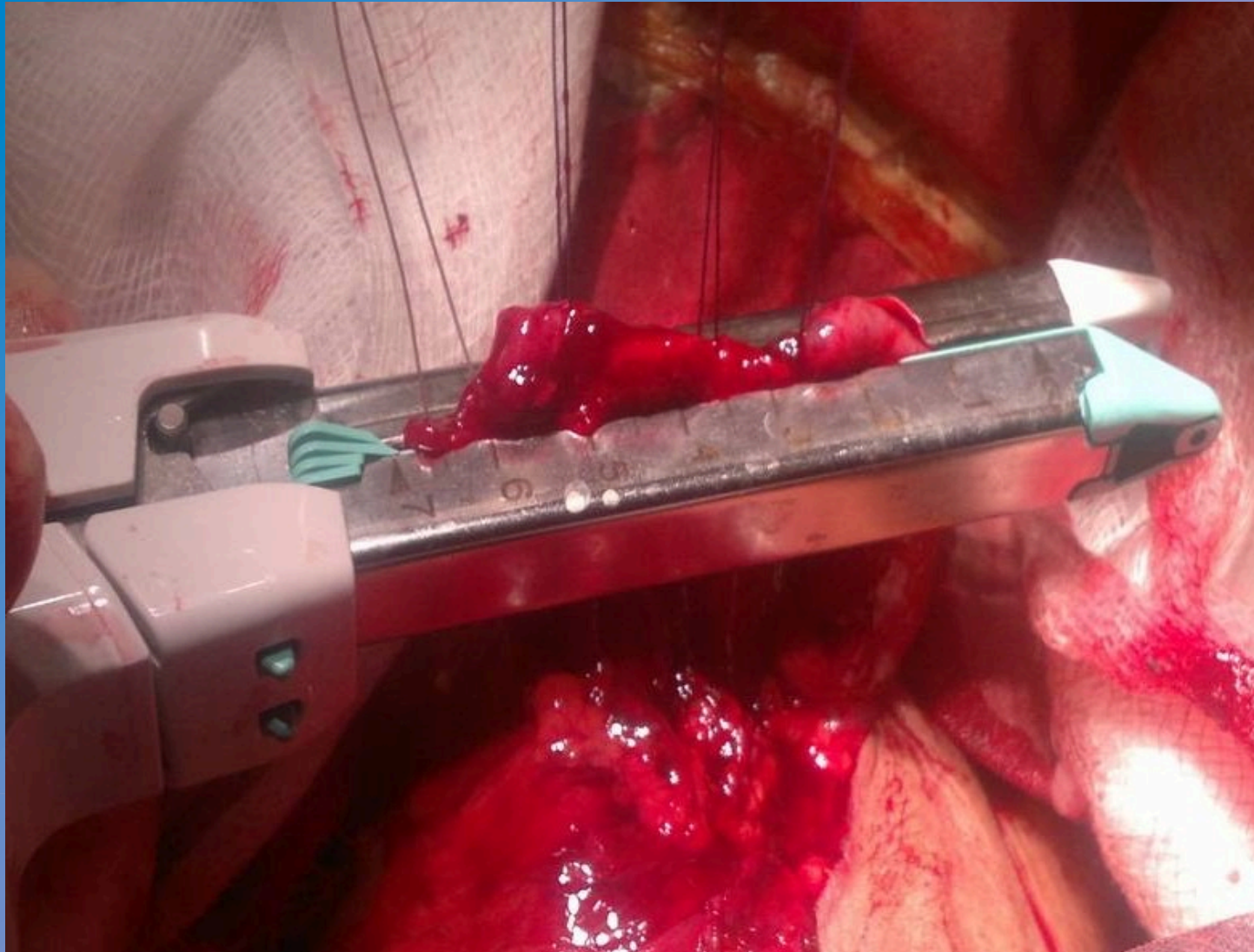




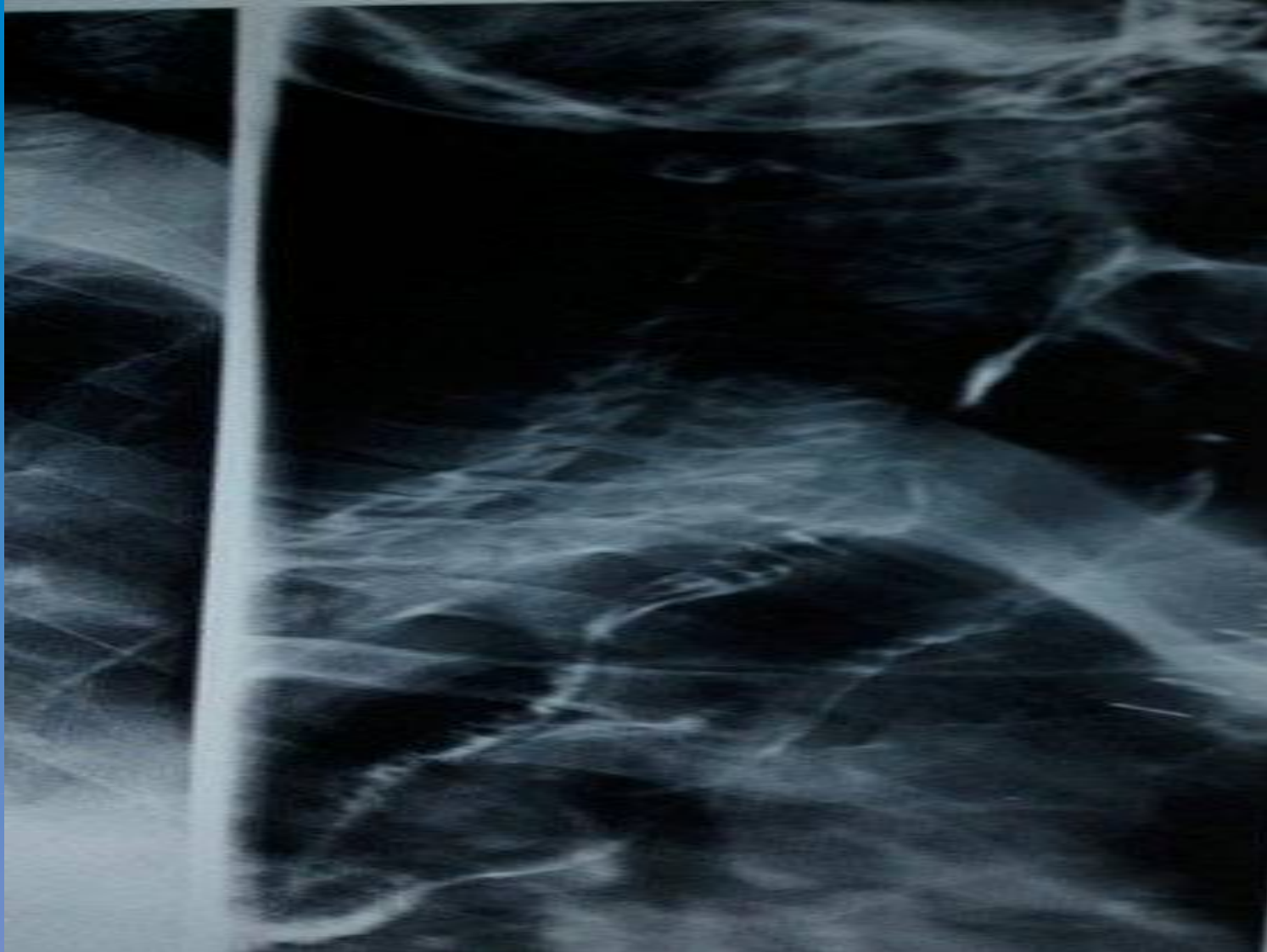










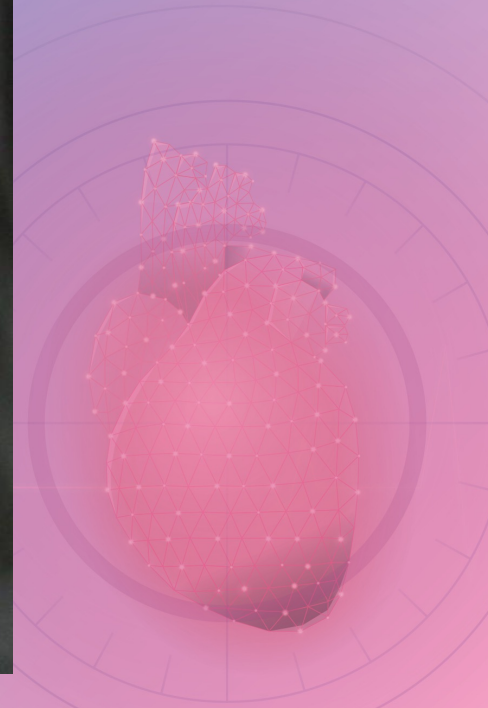


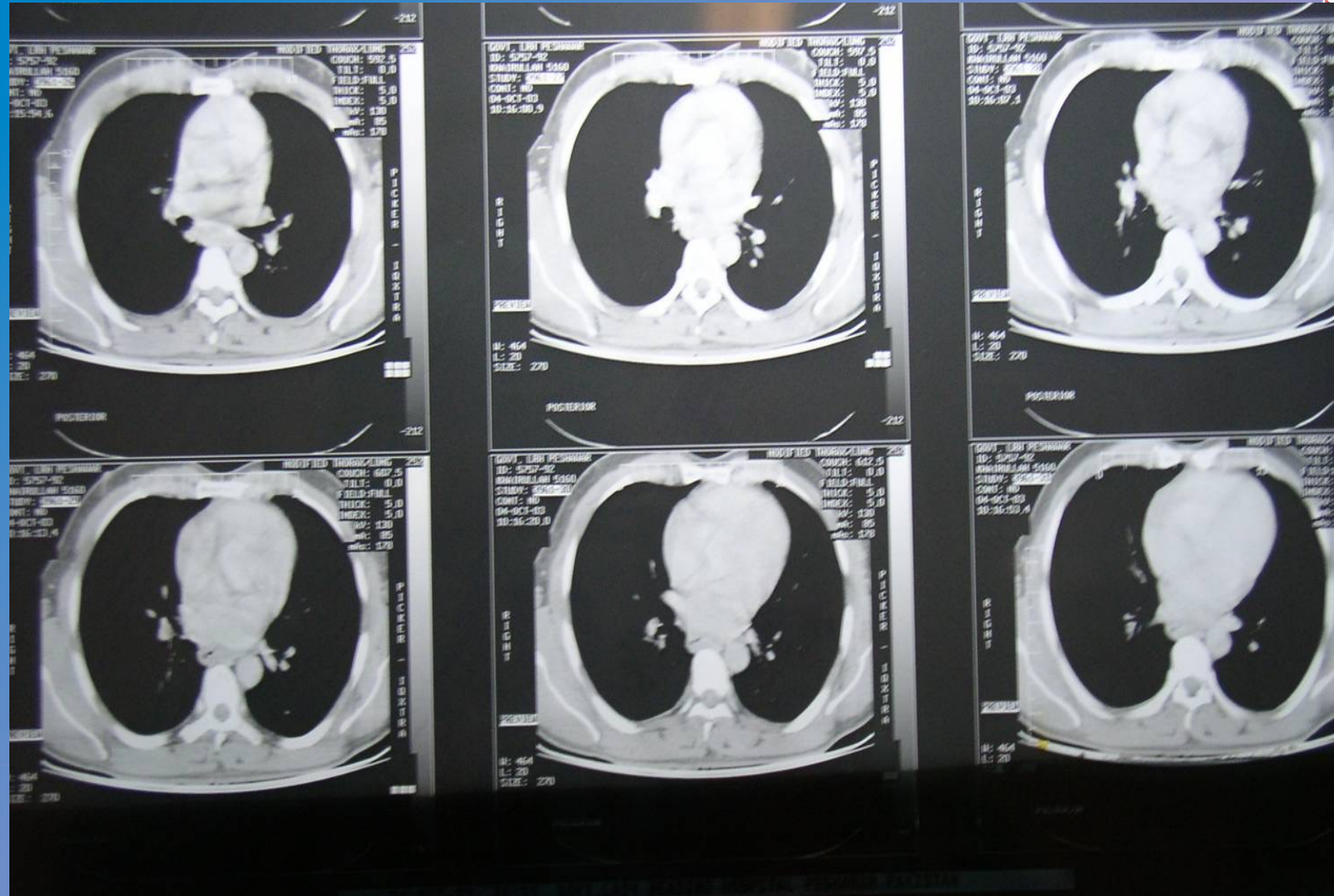


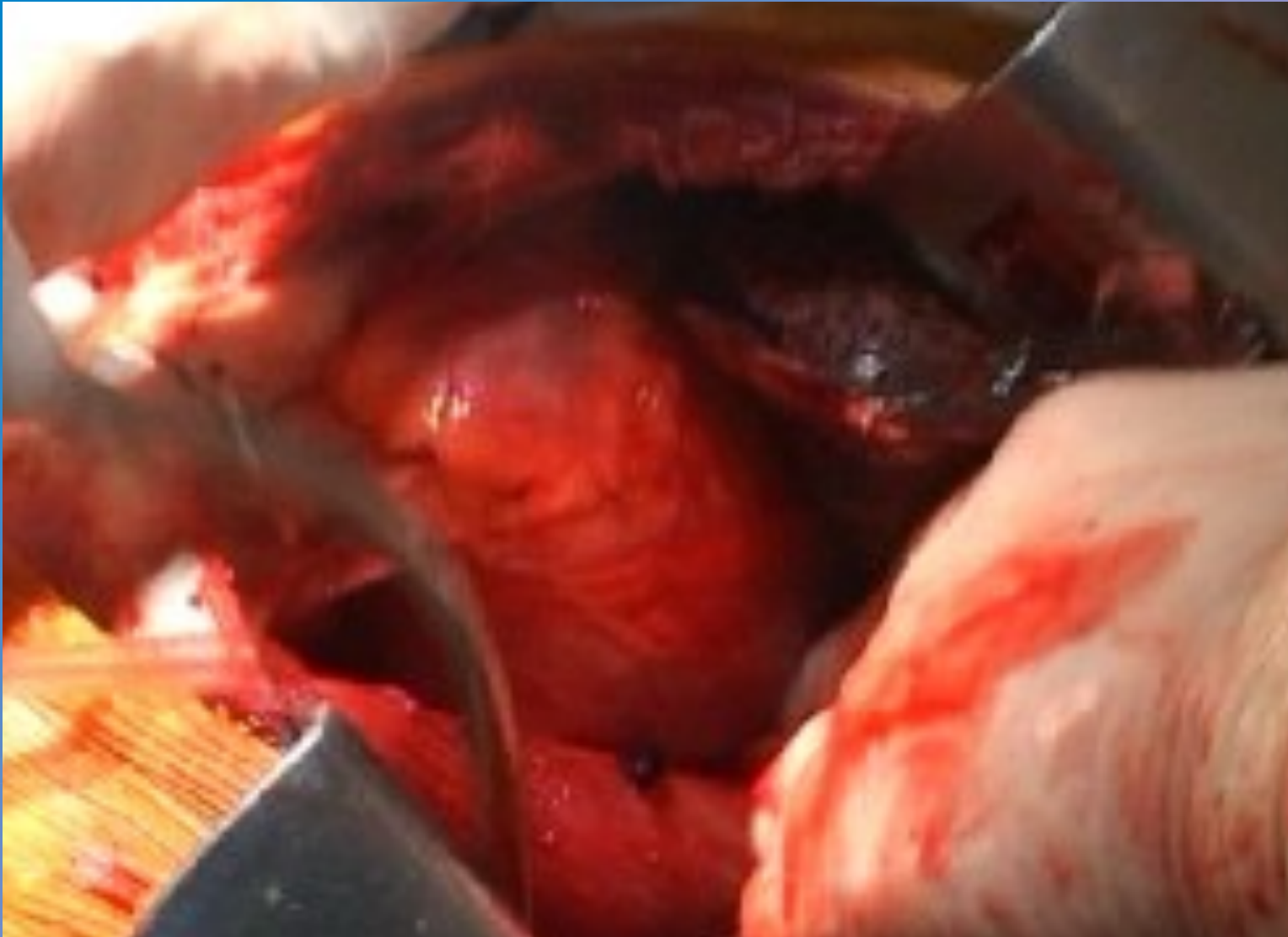
# CASE

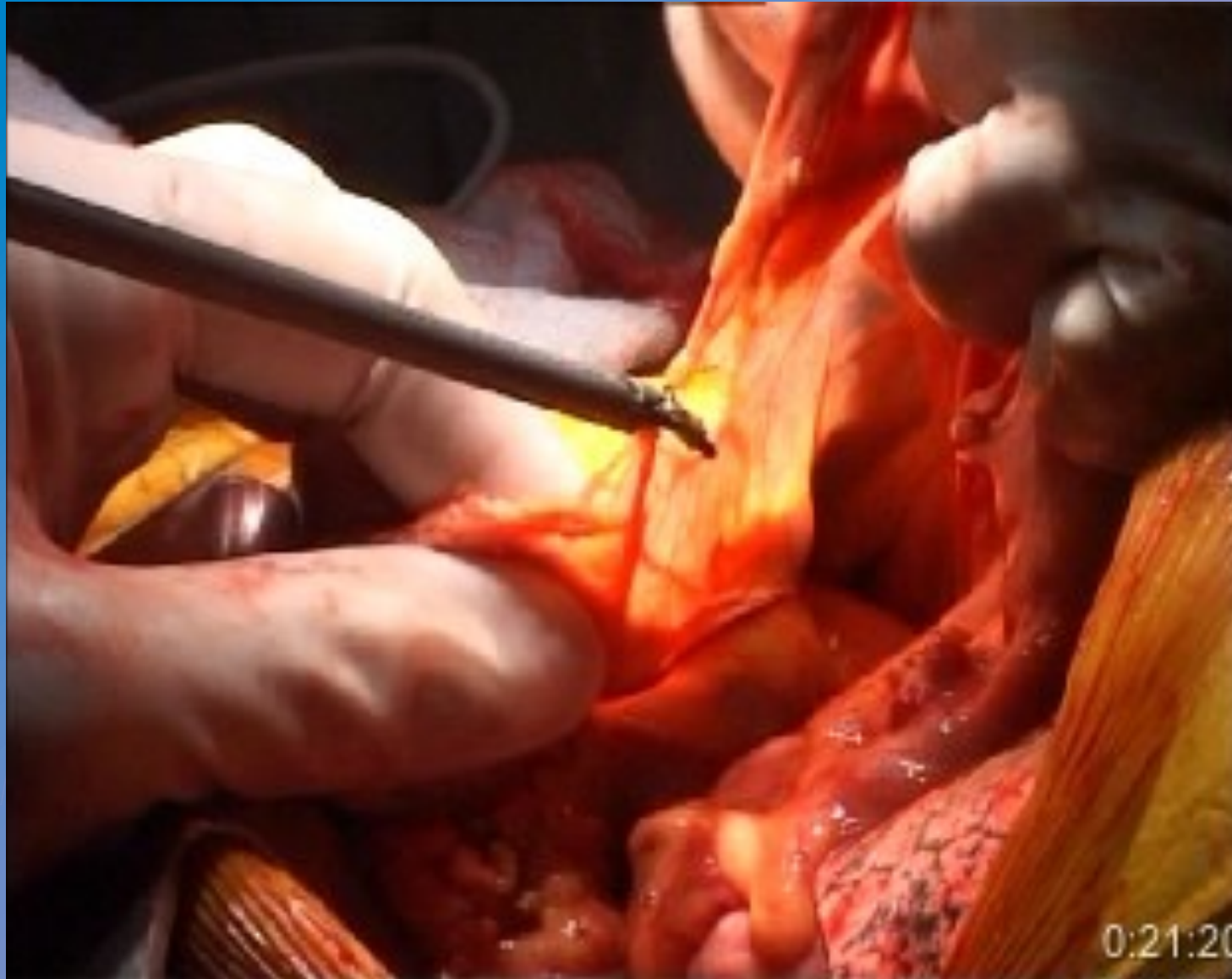
A 33 year old female presented with dysphagia and weight loss for 8 months, initially treated with antacids and H2 blockers but failed to improve. Endoscopy was done by Gastroenterologist showed nodular mucosa at 33cm, histopathology reported moderately differentiated adenocarcinoma

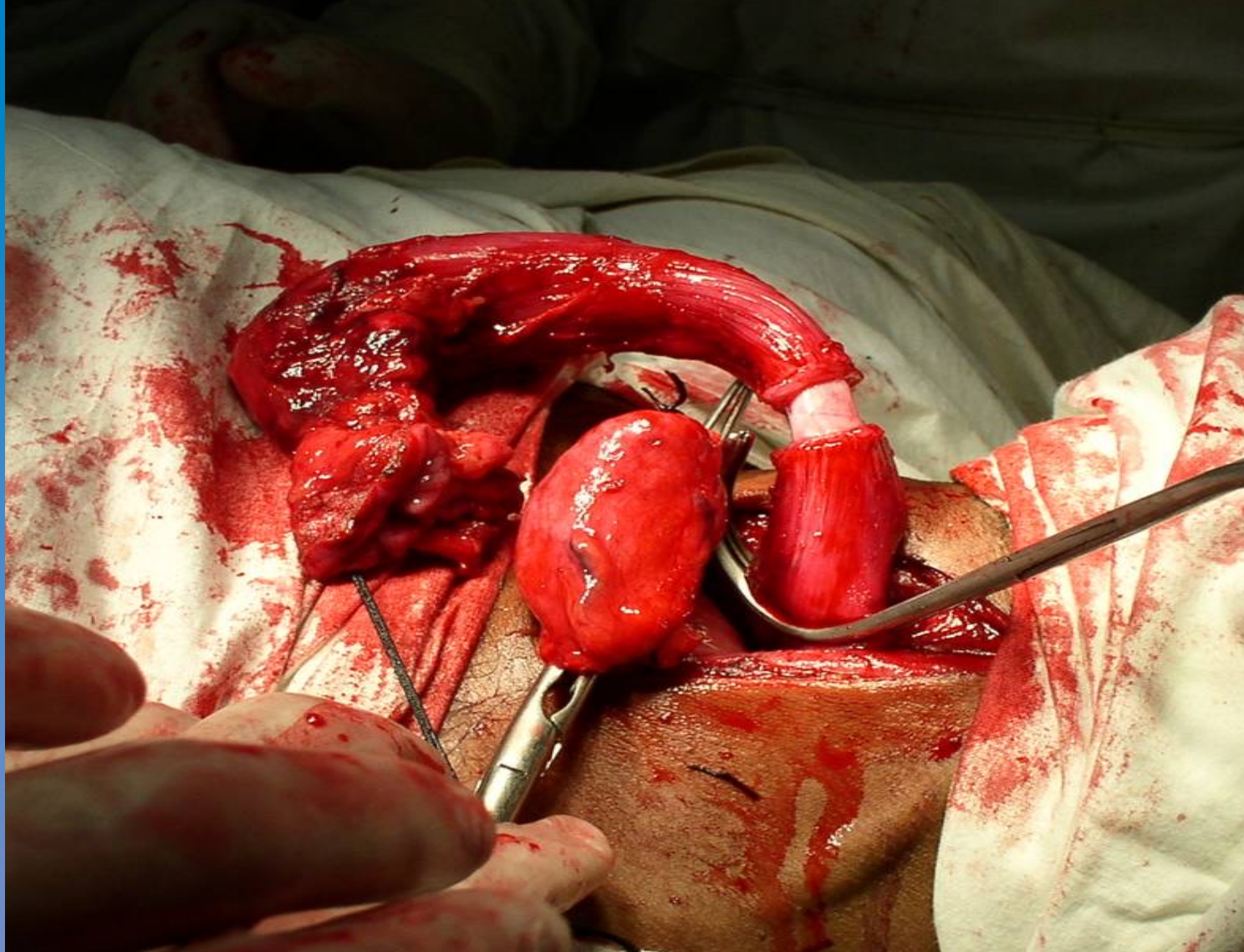


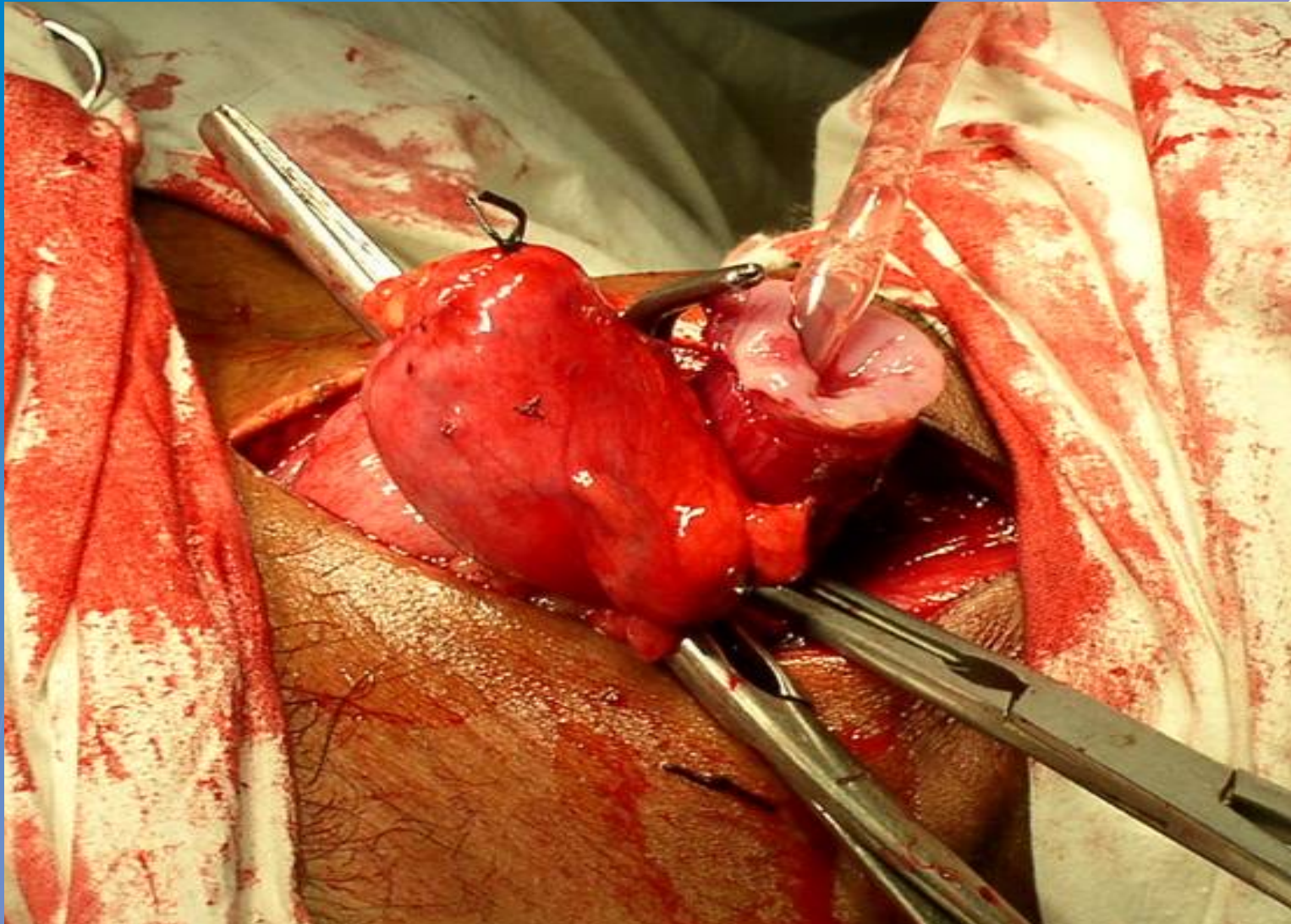


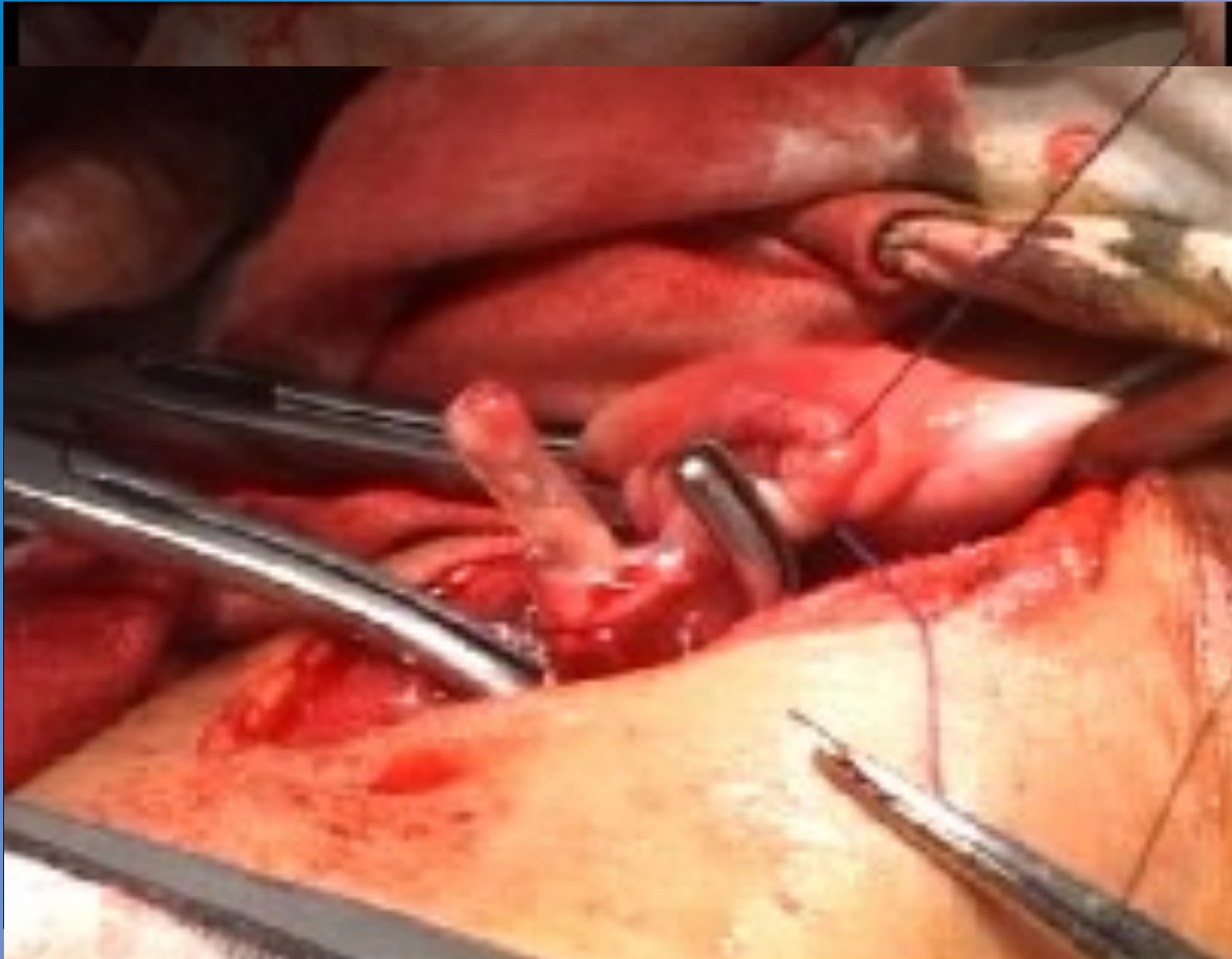




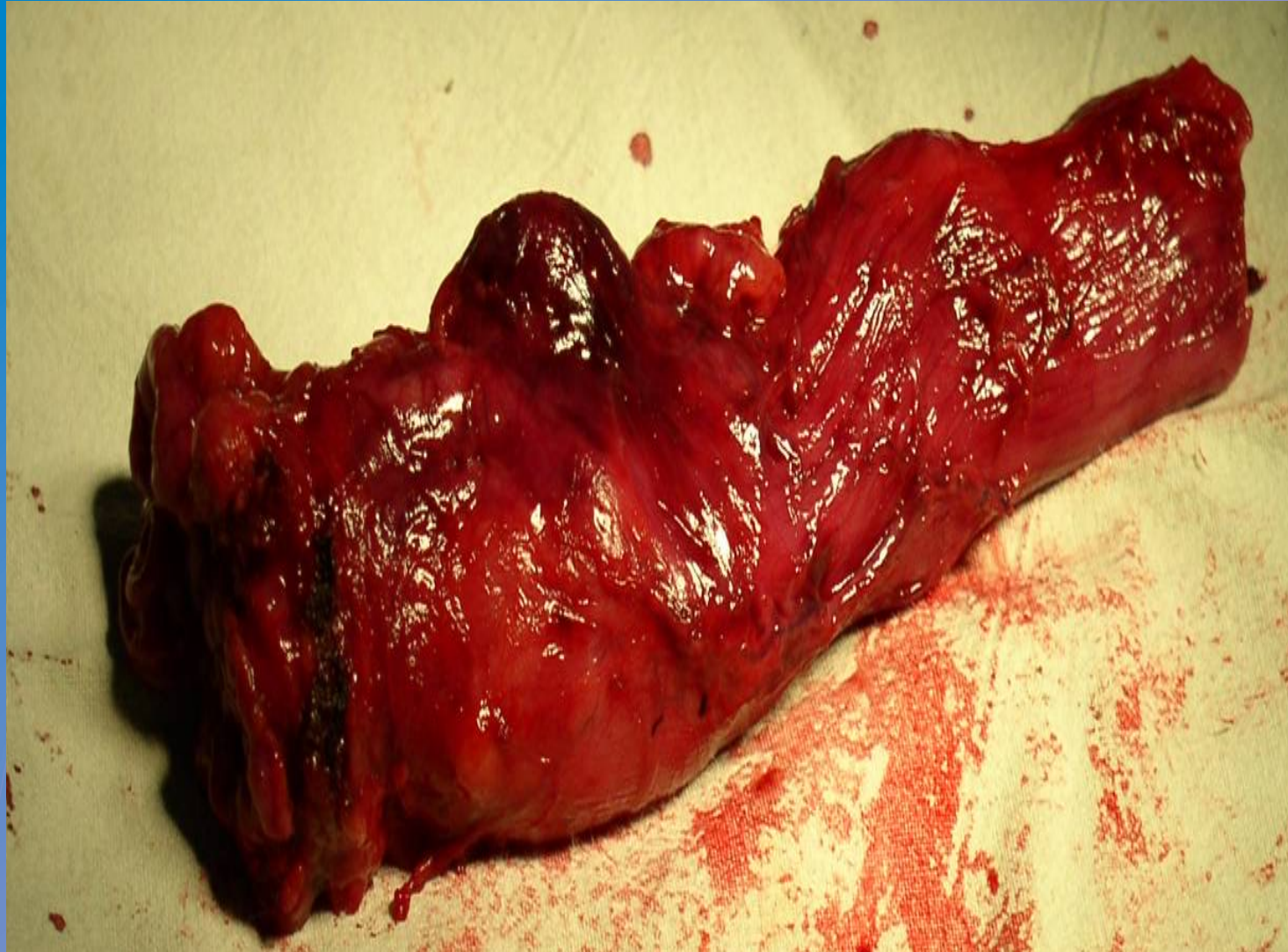














# RESULTS



<b>Variables</b>	<b>Frequency</b>
<b>Gender</b>	
Male	56
Female	44
<b>Age Range(years)</b>	15-80
<b>Tumor Presentation at Gastro-esophageal Junction Position</b>	
Lower third	42
Middle third	30
Middle lower	28
<b>Histopathological Finding</b>	
Adenocarcinoma	58
Squamous cell carcinoma	31
Adeno squamous carcinoma	11
<b>Anastomotic Leakage</b>	04
<b>Anastomotic Stricture (after1 year)</b>	06

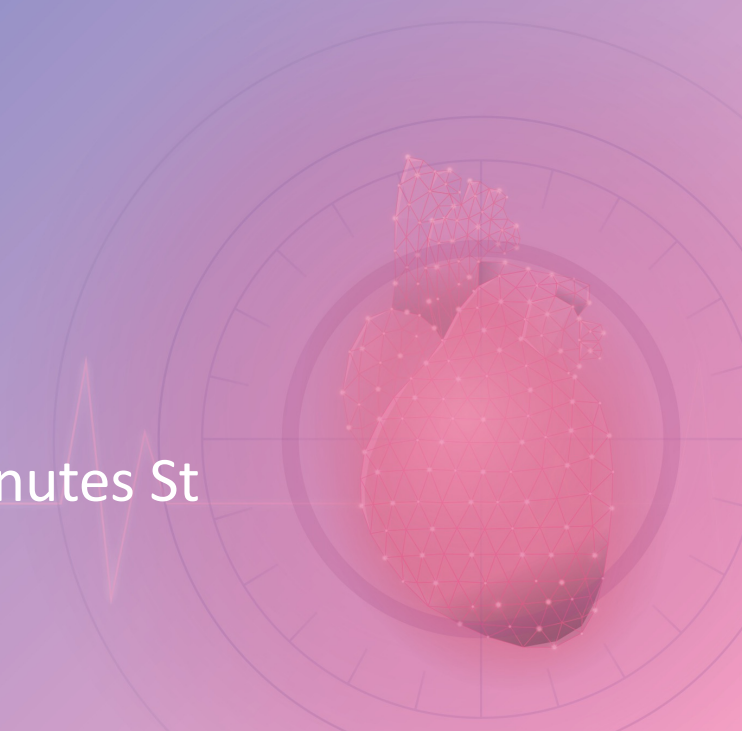
Variables	Group I (Stapled) n=50	Group II (Hand Sewn) n=50	<i>p</i> - value
<b>Gender</b>			
Male	29	27	0.14
Female	21	23	
Mean Age (years)	48.54±14.22	51.10±9.47	0.09
Mean Anastomosis time (minutes)	6.8±1.22	13.2±1.71	0.04
Anastomotic leakage	0	04	<0.01
Anastomotic stricture (after 1 year)	0	06	<0.01

# RESULTS

Stapled esophago-gastric anastomosis were superior in terms of the patient outcomes such as:

- **Anastomosis leakage**  
8% HS vs 0% St
- **Stricture formation**  
12% HS vs 0% St
- **Mean time**  
13.2±1.71 minutes HS vs 6.8±1.22 minutes St

(HS= Hand sewn; St= Stapler)



- **Highlight of the study:**
  - It not only compared the surgical outcomes of the two techniques but also compared the time taken for anastomosis to be completed
- **Limitations:**
  - Not a randomized controlled trial
  - Single-centered study
  - Small sample size
  - One surgeon performed all surgeries



# CONCLUSION

Side-to-side linear stapled anastomosis technique is far superior to hand-sewn technique in terms of anastomotic leakage and stricture formation as well as the time taken for anastomosis to be completed



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THANK YOU

