

# Technique and Outcomes of a Reinforced Robotic Ivor-Lewis Esophagectomy Anastomosis

Camille Yongue MD,, Michael Zervos MD, Costas Bizekis MD

NYU Langone Health, Department of Cardiothoracic Surgery, Division of Thoracic Surgery

## Goal

To share our technique for a reinforced Ivor Lewis Esophageal robotic anastomosis as well as short term results.

## Methods

Consecutive series of adult patients from Jan. 2021 to Dec. 2024 who underwent robotic Ivor-Lewis esophagectomy by a two-surgeon thoracic team.

In all cases, the anastomosis was characterized by:

- Securing the gastric conduit to the posterior pleura to reduce tension.
- Two running barbed 3-0 sutures.
- Circumferentially wrapping with omentum.
- A posteriorly placed soft drain for daily amylase levels.



Figure 1: Robotic Port Placement for the Right Chest

## Operative Technique

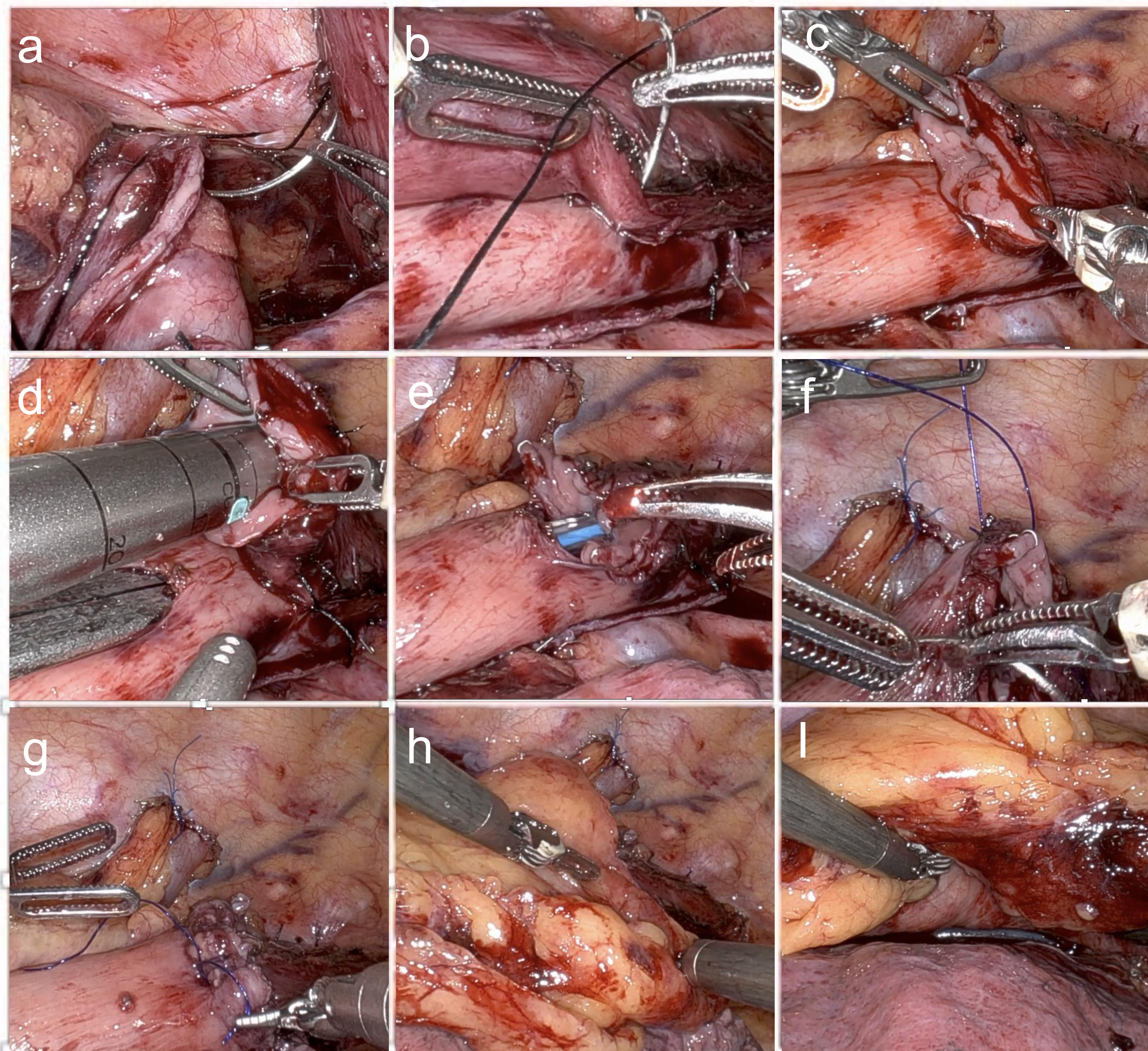


**Figure 2: Key aspects of robotic Ivor-Lewis anastomotic technique:**

- a) Medial pleural tacking suture
- b) Tacking the esophagus to the gastric conduit
- c) The proximal esophagus transected with gastrotomy
- d) Stapled posterior anastomosis
- e) Passing NGT from above
- f) 3-0 Barbed sutures run from the posterior wall
- g) Tying the anastomosis
- h) Wrapping with omental fat
- i) Posterior blake

## Results

- 36 patients (29 men, median age: 70 years)
- 34 patients had esophageal cancer
  - 29 had adenocarcinoma
  - 4 had squamous cell carcinoma
  - 2 had benign disease
- 80% underwent pre-operative neoadjuvant chemo and radiotherapy
  - Median operative time was 241 minutes
  - Median blood loss was 60 cc's
- Average number of lymph nodes removed was 19.
- No conversions from a robotic abdominal and thoracic platform.
- The median length of stay was 5 days.
- There were no anastomotic leaks by amylase levels and/or on post-operative esophagram performed on post-op day 3.
- There was no 30 nor 90-day mortalities.
- 29% had complete pathologic response.

## Conclusions

Our innovative, single layer, hand-sewn, reinforced and tension-free running anastomosis for robotic Ivor-Lewis esophagectomy can be used for both esophageal cancer and benign disease with excellent results. This approach is easy to teach and is reproducible.