

5-2019

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Ali Ghandour

Pridvi Kandagatla

Henry Ford Health System, pkandag2@hfhs.org

Ali Amro

Henry Ford Health System, AAmro1@hfhs.org

Andrew Popoff

Henry Ford Health System, apopoff2@hfhs.org

Zane Hammoud

Henry Ford Health System, zhammou1@hfhs.org

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Recommended Citation

Ghandour, Ali; Kandagatla, Pridvi; Amro, Ali; Popoff, Andrew; and Hammoud, Zane, "Long-Term Outcomes after Robotic-Assisted Ivor-Lewis Esophagectomy" (2019). *Clinical Research*. 63.

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Long-Term Outcomes after Robotic-Assisted Ivor-Lewis Esophagectomy

Ali Ghandour, Pridvi Kandagatla, Ali Amro, Andrew Popoff, Zane Hammoud
Department of Surgery and Division of Thoracic Surgery, Henry Ford Health
System/Wayne State University, Detroit, MI

Introduction/Purpose

- ▶ Esophageal cancer is the 6th leading cause of cancer-related deaths worldwide¹
- ▶ Surgery remains the mainstay for treatment- Ivor-Lewis esophagectomy being the most common
- ▶ Robotic assistance (RAIL) affords better visualization and degrees of freedom
- ▶ Elucidate the long term outcomes of robotic assisted Ivor-Lewis esophagectomy

Methods

- ▶ We performed a retrospective review of 112 consecutive patients undergoing RAIL surgery at our institution.

Patient Characteristic	Number of Patients	%
Age (Mean [SD])	63.1 [9.41]	
Male	90	80.4
BMI (Mean [SD])	27.13 [5.70]	
Neoadjuvant Therapy	82	73.2
Smoking History	87	77.7
Pre-operative Albumin (Mean [SD])	3.66 [0.49]	
Hypertension	62	55.4
Coronary Artery Disease	18	16.1
Diabetes	33	29.5
Gastroesophageal Reflux Disease	58	51.8
COPD	19	17
Pre-operative J Feeding Tube	15	13.4
Pre-operative G Feeding Tube	3	2.7
Pre-operative Dysphagia	86	76.8

Methods - Surgical Technique

- ▶ Laparoscopic gastric mobilization and creation of the gastric conduit
- ▶ Robotic transthoracic esophagectomy and anastomosis above the level of the azygous vein utilizing a linear stapler for the posterior wall and manual suture for the front wall.

Results

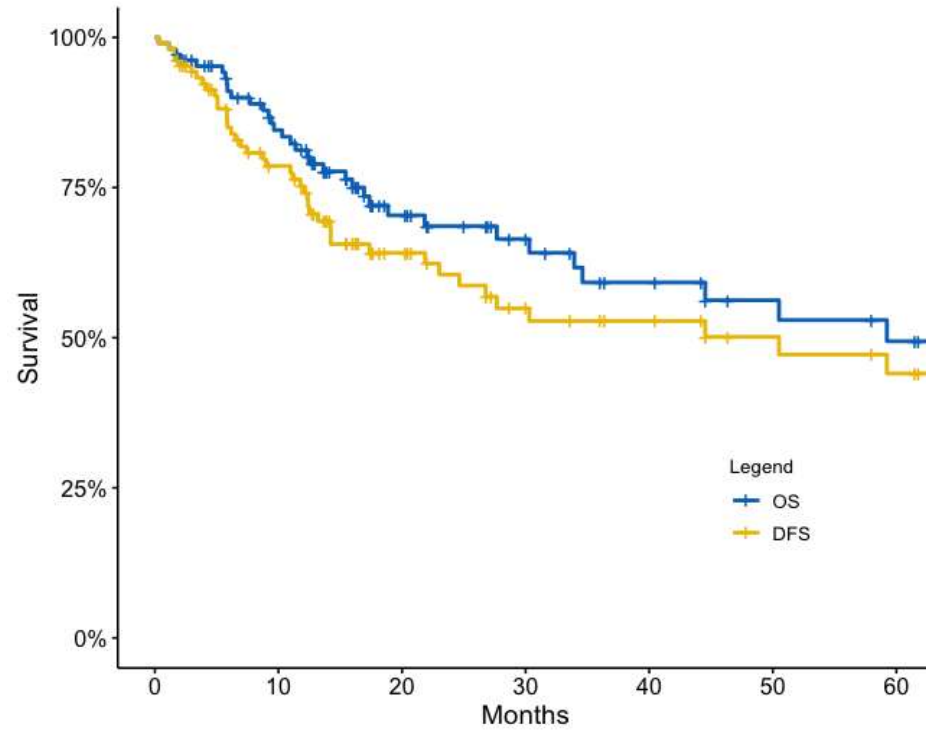
Table 4. Postoperative Complications

Postoperative Complication	Number of Patients	%
Arrhythmia	30	26.8
Anastomotic Leak	9	8.0
Stricture Requiring Dilation	18	16.1
Myocardial Infarction	0	0.0
Pneumonia	12	10.7
Vent Dependent Respiratory Failure	10	8.9
Reintubation	15	13.4
Acute Renal Failure	5	4.5
Surgical Site Infection	4	3.6
Pleural Effusion	15	13.4
Chylothorax	2	1.8
Deep Vein Thrombosis	2	1.8
Stroke	0	0.0
Delayed Gastric Emptying - 6 Months*	16	18.4
Delayed Gastric Emptying - 12 Months*	3	4.2
30-day Mortality	1	0.9

Table 2. Tumor Type

Histologic Type	Number of Patients	%
Adenocarcinoma	98	87.5
Squamous Cell Carcinoma	3	2.68
High Grade Dysplasia	2	1.79
Other	9	8.04

Results



Number at risk

OS	106	77	42	30	22	17	14
DFS	106	71	39	27	22	17	14

Discussion

- ▶ Robotic surgery did not compromise surgical margin
- ▶ 16% of our patients developed a stricture requiring at least one dilation, this is lower than the 23-42% of stricture rates reported in literature after an open esophagectomy^{2,3}
- ▶ 30 day mortality rate of 0.9%
- ▶ Overall survival and disease free survival results are comparable to thoracoscopic minimally invasive esophagectomy data⁴
- ▶ Limitations

Conclusion

- ▶ Demonstrate the feasibility and safety of a RAIL esophagectomy
- ▶ Outcomes are similar to other non-robotic esophagectomies

References

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