

Robotic approach results in improved peri-operative outcomes for paraesophageal hernia repair

Department of Surgery
Section of Minimally Invasive Surgery



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Introduction

Paraesophageal hernia (PEH) repair has several persistent challenges:

- Hiatal reconstruction
- Mediastinal dissection

Robotic surgical approach offers several potential advantages:

- Enhanced visualization
- Improved dexterity and reach

Study Aim: Compare peri-operative outcomes of the laparoscopic vs. robotic approach to PEH repair.

Methods

Time frame: 2009-2019

Study setting: Tertiary academic hospital

Data sources:

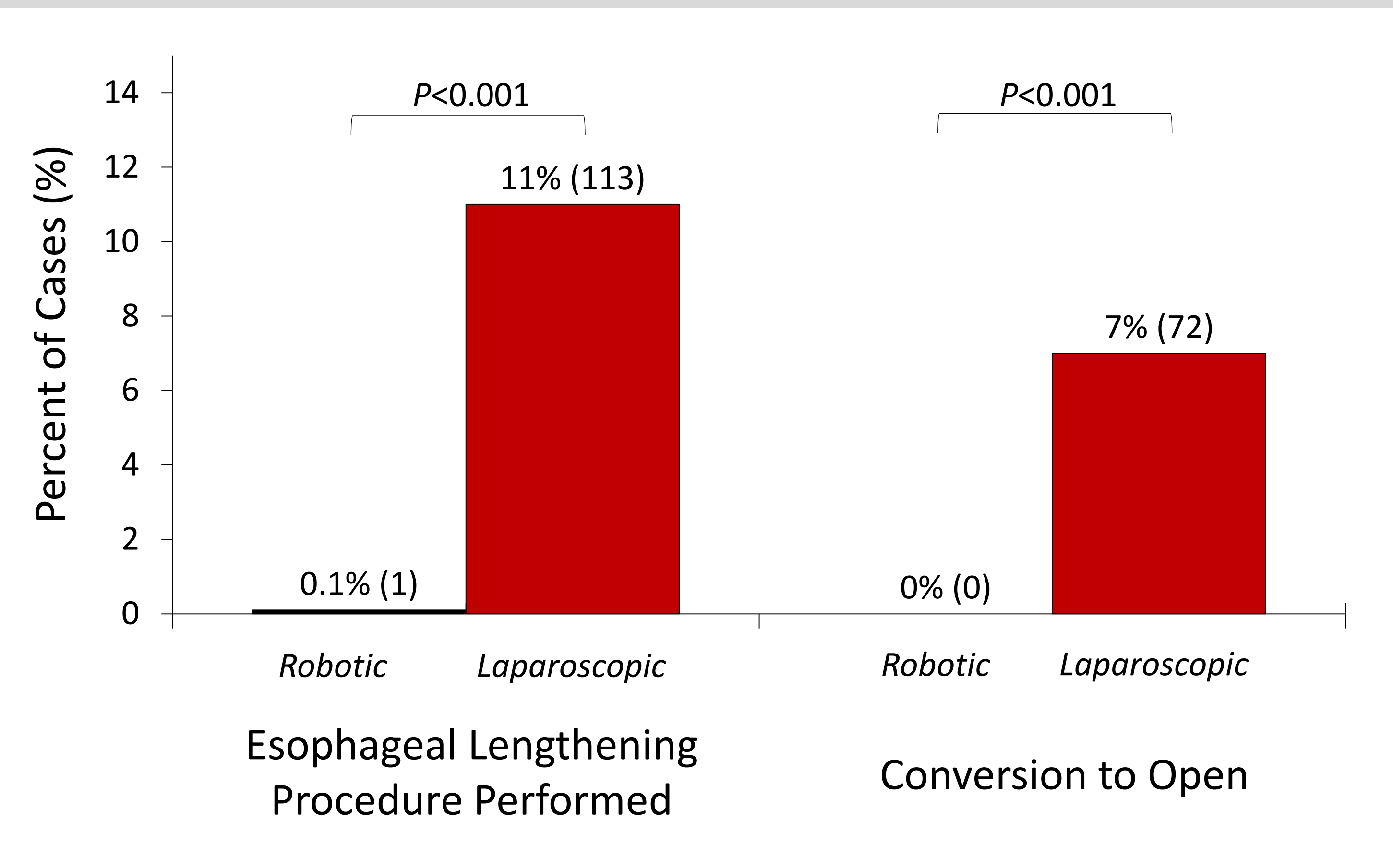
- Prospective, IRB-approved database of robotic PEH repairs performed by a single surgeon
- Retrospective review of laparoscopic PEH repairs by multiple surgeons

Primary outcome measures:

- Conversion to open
- Need for an esophageal lengthening procedure

Statistical analysis: t-test, Chi-Square test

Results



Peri-Operative Outcomes	Robotic N=830	Laparoscopic N=1024	P-Value
Operative time (min)	174.1 (±63.8)	187.3 (±65.3)	<0.001
Intra-operative equipment costs (USD)	2147 (±312.5)	2058 (±345.5)	0.012
EBL (mL)	27.3 (±5.9)	89.3 (±27.8)	<0.001
Intraoperative injury	5 (0.6%)	28 (2.7%)	<0.001
Thromboembolic complications	4 (0.5%)	6 (0.6%)	0.761
Length of stay (days)	1.8 (±0.6)	2.9 (±1.4)	<0.001
Re-operation within 30 days	2 (0.2%)	8 (0.8%)	0.114
30 day in-hospital mortality	0 (0.0%)	5 (0.5%)	0.104

Conclusions

This study represents one of largest robotic PEH repair case series to date. Robotic PEH surgery appears to be:

- Safe
- Feasible
- Decreased morbidity:
 - Less esophageal lengthening procedures
 - No conversions to open
- Findings suggest robotic approach to PEH repair may result in improved peri-operative outcomes

Disclosures

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