Paraesophageal Hernia Repair: Assessment of Perioperative Factors Predicting Outcomes

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Introduction

- Paraesophageal hernias (PEH) represent 5-10% of all diagnosed hiatal hernias and can be associated with life threatening complications[1]
- Recurrence following paraesophageal hernia repair (PEHR) is common, with limited predictive patient or operative factors that influence recurrence or lack of postoperative improvement[2]

Aim

The aim of this study was to determine if there are predictive patient or operative characteristics associated with postoperative symptom improvement and radiographic recurrence following PEHR

Methods

- In a retrospective review, the electronic health record at the University of Pennsylvania Health System was queried to identify adult patients who underwent PEHR between 2018 and 2022
- Patient characteristics, preoperative imaging, operative findings, and postoperative outcomes including complications within 30 days, ED visits or admissions within 30 days, complications or symptoms noted until last day of follow up, and repeat operations were recorded
- Radiographic recurrence was determined by post-op radiology reports
- Data were assessed using standard statistical methods with STATAv 17.0 software and univariate analysis

386 patients identified → Excluded patients who received gastropexy only / Included primary and revisional PEHR → 244 patients included

Results

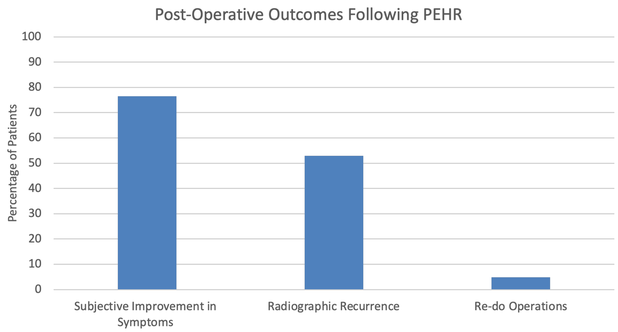
Table 1. Patient Characteristics for PEHR

	n=244
Sex	
Male	52 (21.3%)
Female	192 (78.7%)
Pre-Procedure BMI (kg/m^2)	29.8 ± 4.9
ASA Score	3 (IQR 2-3)
Hernia Type	
Sliding hiatal hernia (type 1)	33 (13.5%)
Type 2	55 (22.5%)
Type 3	129 (52.9%)
Type 4	14 (5.7%)
Common Preoperative Symptoms	
Heartburn	120 (49%)
Abdominal Pain	90 (36.7%)
Dysphagia	88 (35.9%)
Nausea/Vomiting	70 (28.6%)
Chest Pain	61 (24.9%)
Patients with Prior PEHR	50 (20.1%)

Table 2. Procedural Characteristics and Outcomes

	n=244
Mean operative time (minutes)	118.6±57.6
Operative approach	
Minimally invasive	226 (92.7%)
Open	18 (7.4%)
Crural closure	199 (81.4%)
Fundoplication	175 (71.7%)
Nissen	76 (43.4%)
Toupet	38 (21.7%)
Other fundoplication	61 (34.9%)
Mesh	35 (14.2%)
Emergent repairs	7 (28.7%)
Subjective improvement of symptoms	**187 (76.5%)**
Radiographic recurrence at follow up	**129 (52.9%)**
Mean follow up time (months)	10.4±15
30-day Outcomes	
Complications	21 (8.5%)
Readmissions	5 (2%)
ED visit	7 (3%)
Mortality	3 (1%)
Required reoperation for recurrent PEH	**12 (4.9%)**

Results



- 52.9% (n=157) of patients had a radiographic recurrence over a mean follow up time of 10.4±15 months, similar to previous studies[3]
- Despite high recurrence, only 4.9% of the cohort required a reoperation
- Subjective improvement in symptoms was reported in 76.5% of cases
- Hernia type, crural closure, fundoplication type, and mesh usage were not significantly associated with post-operative radiographic recurrence or symptom improvement
- An 8.5% 30-day complication rate was observed, with few ED visits or readmissions
- Two patients had post-operative gastric necrosis leading to mortality

Conclusion

Perioperative factors and operative technique were not predictive of post operative radiographic recurrence or symptom improvement. Despite high radiographic recurrence, symptomatic improvement is seen in over 75% of patients with less than 5% requiring reoperation.

References

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