Recurrent Paraesophageal Hernias: Should We Plan for Reoperative Surgery? A Propensity Matched Cohort

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Introduction

- Paraesophageal hernia repairs (PEHR) can have radiographic recurrence rates as high as 50% in two years, with a subset of patients requiring repeat operation.
- There are poor preoperative and intraoperative predictors of surgical failure, recurrence, and need for reoperation.
- The optimal surgical approach for initial operations and management for recurrent PEH remain important clinical questions.

Aim

Our main objective was to use propensity matching to compare patients undergoing initial PEHR vs. redo PEHR to identify factors associated with failure to improve and reoperations.

Methods

- In an IRB-approved retrospective study, the electronic medical record was queried for patients ≥18 years old undergoing PEHR at a tertiary care center from 1/1/2018-12/31/2022.
- Data from baseline demographics, preoperative imaging and endoscopy, operative reports, post-operative course, and all available follow up were collected.
- A computational generalization of inverse propensity score weight was used to create populations with similar covariate distribution between patients undergoing initial PEHR vs. a redo PEHR.
- Age, weight, BMI, LOS, sex, race, surgical style, and ASA were used in matching.
- **Outcomes** assessed were 30-day morbidity, readmissions, reoperations, long-term complications, and post-operative symptom improvement.
- Data was analyzed with Stata Version 17.0 using descriptive and univariate analysis.

Results

- After weight propensity score analysis, initial vs redo PEHR patients had no statistically significant differences in their baseline patient characteristics (weighted for: age, BMI, LOS, sex, surgery performed, or race/ethnicity)

Table 1. Patients Characteristics

	Reoperation (n=50)	Initial (n=194)
Mean Age (SD)	64 (11.06)	65.8 (12.62)
Mean BMI (SD)	28.6 (5.06)	30.07 (4.8)
Sex		
Male	9 (18%)	41 (21%)
Female	40 (80%)	152 (78%)
Other	1 (2%)	1 (1%)
Hiatal Hernia Type		
I	2 (4%)	1 (1%)
II	4 (8%)	9 (5%)
III	11 (22%)	31 (16%)
IV	32 (65%)	151 (79%)
ASA Category		
1	1 (2%)	0 (0%)
2	22 (44%)	97 (50%)
3	26 (52%)	96 (50%
4	1 (2%)	0 (0%)
Race/Ethnicity		
Caucasian	42(84%)	170 (89%)
Black	3(6%)	14 (7%)
Hispanic/Latino	1 (2%)	4 (2%)
Asian	4(8%)	4 (2%)

Results

Table 2. Outcomes for Reoperations Compared to Initial Surgeries in Propensity Matched Cohort

Outcome	Odds Ratio [95% CI]	P-Value
Postoperative Symptom Improvement	0.245 [0.1—0.55]	P=0.0007
30-day complications	3.47 [0.86-14.05]	P=0.08
Late Complications (after 30 days)	0.37 [0.05-2.66]	P=0.32
30-day ED visits	0.83 [0.24-5.84]	P=0.83
30-Day Readmissions	0.74 [0.09-5.75]	P=0.77
30 Day Mortality	1.01 [0.09-11.29]	P=1.01
Repeat Operation	2.12 [0.49-9.25]	P=0.31

Conclusion

Repeat operations were less likely to have postoperative symptom improvement with slightly higher OR of 30-day complications or repeat operation. There were no differences between initial and repeat operations in 30-day mortality, 30-day readmissions, or long-term complications.

References

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