

Perioperative outcomes of revisional compared to primary giant paraesophageal hernia repair

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Introduction

- Recurrences after repair of giant paraesophageal hernias(PEH) are common
- Revisional procedures are technically challenging and associated with higher complication rates than primary surgery
- Repair of recurrent PEH is often avoided except in very symptomatic patients.
- However, data describing operative outcomes in these infrequent cases is lacking.

Study Objective

The objective of this study is to report perioperative outcomes of revisional repair of giant PEH, and compare these outcomes to similar patients undergoing primary surgery.

Methods

Study design

- Retrospective cohort study
- Single high-volume center
- January 2012 - August 2019

Study Population

- All adult patients undergoing giant PEH(Type II-IV) repair

Main outcomes

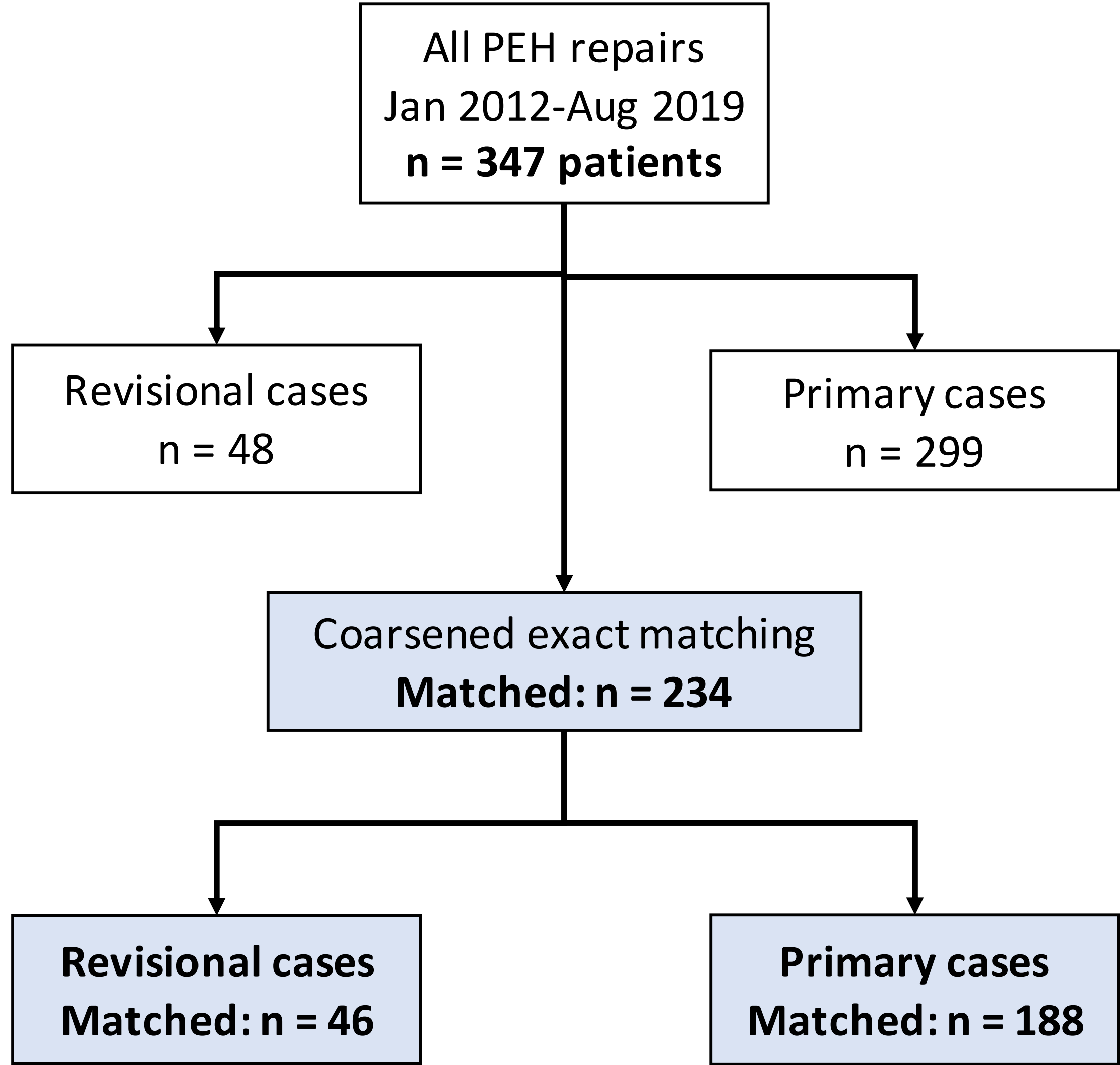
- Conversion rate
- Intraoperative events
- 30-day complications (Clavien-Dindo Classification) & length of stay

Statistical analysis

- Coarsened exact matching using age, gender and American Society of Anesthesiologists (ASA) score
- Student t-test or Wilcoxon rank-sum test for continuous variables
- Two-sided Fisher’s exact and χ^2 tests for categorical variables

Results

Figure 1. Study Flow chart



Severe complications among revisional cases included

- 1 case of aspiration pneumonia requiring ventilatory support
- 1 acute recurrence requiring revision
- 1 GEJ obstruction requiring revision
- 1 severe dysphagia requiring endoscopic dilatation
- 1 bilateral complicated pleural effusions requiring drainage

Most common **reason for conversion:** adhesions

Most common **intraoperative event:** gastric fundus injury during fundoplication takedown

Table 1. Patient characteristics

Variables	Matched cohort (n = 234)		
	Revisional Repairs (n = 46)	Primary Repairs (n = 188)	P-value
Age, years, mean $\pm$ SD	63.6 $\pm$ 12.9	68.8 $\pm$ 10.6	<0.01
Male gender	14 (30.4)	36 (19.2)	0.09
ASA $\geq$ 3	23 (50.0)	71 (37.8)	0.13
PPI use	30 (100.0)	76 (78.4)	<0.01

- The median time between initial repair and revisional surgery was 40 months (IQR17-121)
- 8 patients (19.5%) had an open approach at their first operation.
- Only 1 patient (2.8%) had mesh reinforcement during primary repair

Table 2. Outcomes

Variables	Matched cohort (n = 234)		
	Revisional Repairs (n=46)	Primary Repairs (n=188)	P-value
Emergency Surgery	7 (15.2)	14 (7.5)	0.10
Surgical approach			<0.01
Open	0 (0)	2 (1.1)	
Laparoscopic	39 (84.8)	183 (97.3)	
Converted	7 (15.2)	3 (1.6)	
Conversion rate	7/46 (15.2)	3/186 (1.6)	<0.01
OR length, min, med (IQR)	122.0 (95.0-165.0)	106.0 (84.0-136.0)	0.07
Intraoperative events	12 (26.1)	10 (5.3)	<0.01
LOS, days, med (IQR)	2 (1-5)	1 (1-2)	<0.01
30-d postop complications	16 (34.8)	19 (10.1)	<0.01
Minor (Clavien-D I-II)	12 (26.1)	8 (4.3)	<0.01
Major (Clavien-D III-V)	5 (10.9)	11 (5.9)	0.23
30-day reoperations	2 (4.4)	7 (3.7)	0.84
30-day deaths	0	0	-

Conclusion

- Repair of recurrent giant paraesophageal hernia can be successfully performed laparoscopically in the majority of cases
- Repair can be performed with acceptable morbidity and perioperative outcomes in comparison to primary surgery

Key Message

In a high-volume center, repair of recurrent giant PEH has acceptable morbidity and perioperative outcomes compared to primary surgery