Laparoscopic repair of large paraesophageal hernias with concomitant percutaneous endoscopic gastrostomy (PEG) may reduce recurrence: A single-institution series

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Background

Large paraesophageal hernias often recur. Besides standard of care reduction, sac resection, esophageal mobilization, crural closure, and fundoplication, adjunctive measures, such as mesh and PEG placement, have been advocated. We report a single-institution series where mesh overlay and PEG placement were employed systematically.

Methods

We reviewed cases of laparoscopic large (>33% stomach incarcerated) paraesophageal hernia repairs performed by a single surgeon. All included formal repair. Overlay absorbable mesh was used if crura were attenuated, and PEG gastropexy was performed if > 50% of stomach was incarcerated. Recurrence rates were calculated for patients with follow-up, recognizing these measures were differently applied. Risk differences were determined using risk differences, chi-square, and unadjusted Kaplan-Meier plots.

Results

	+PEG	-PEG	+Mesh	-Mesh	Partial fundoplication	Complete fundoplication
N having operation	205	195	312	88	199	199
N having postoperative testing	134	145	215	64	126	151
No recurrence on testing	103	97	158	42	93	105
Any recurrence on testing, n	31	48	57	22	33	46
p-value overall cohort	0.024		0.212		0.132	
P-value of those tested	0.087		0.286		0.515	
Reoperation, n=4	1	3	3	1	0	4

Table 1: Recurrence and Reoperation stratified by intervention. Recurrence based on radiograph or endoscopy findings.

- 79 patients (19.8%) had recurrence based on radiographic or endoscopic studies
- Use of PEG was associated with fewer recurrences
- The mean follow-up time for the PEG cohort was shorter (3.64 years) than the non-PEG cohort (6.65 years)
- No significance in recurrence when stratified by mesh or fundoplication type
- 4 reoperations, 1 of whom had PEG initially (this was a para-hiatal recurrence)
- For those with no follow-up imaging, "no recurrence" was assumed.
- There is potential for unaccounted for recurrence due to loss of follow up as study was limited to data collected from single institution.

400 patients underwent laparoscopic repair of a large paraesophageal hernia from 2000-2021 with mean follow-up of 5 years.
- Mean age: 65 +/- 11 years
- 50% Female
- 50% partial fundoplication, 50% complete fundoplication
- 78% received mesh
- 51% received PEG

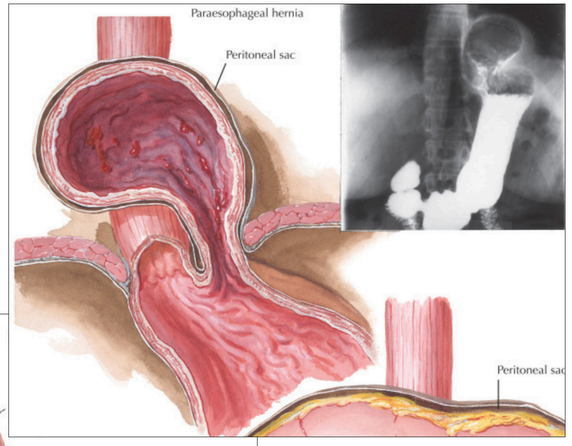


Figure 1. Paraesophageal Hernia from Netter's Gastroenterology, Third Edition.

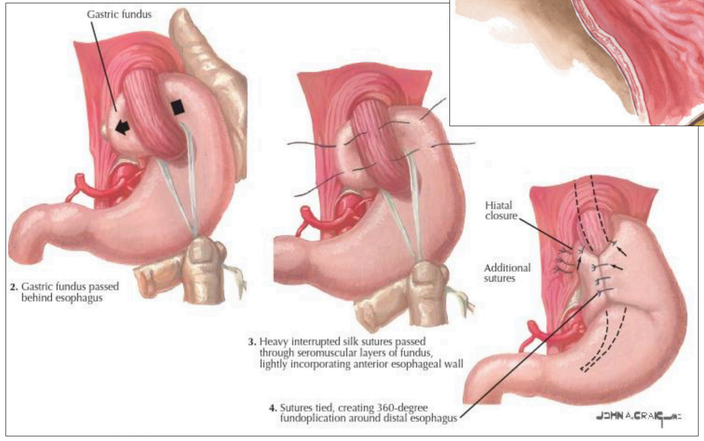


Figure 2. Crural closure and Nissen fundoplication, from Netter's Surgical Anatomy and Approaches.

Conclusion

This series found patients undergoing laparoscopic repair of large paraesophageal hernia had fewer recurrences with use of PEG although PEG was selectively used in patients felt to be at higher risk of recurrence. Mesh placement and fundoplication type did not have significant impact.

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