Comparison of Outcomes Between Patients Undergoing Paraesophageal Hernia Repair with Mesh vs. Primary Repair

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Background

Use of biologic mesh in paraesophageal hernia repair (PEHR) is still controversial. Knowledge about long-term outcomes is scarce, and the use of mesh is tempting as the recurrence rates for PEHR have been higher than desired (up to 50%) (1).

Evidence show that the use of a biologic mesh at the hiatus reduced early recurrences (at 6 months) but did not significantly reduce the rate of recurrences at 5 years (1,2).

For this reason, our current practice is to selectively use mesh for reinforcement of the hiatus in patients at higher risk for recurrence.

Purpose

To describe the demographic and clinical characteristics of patients who underwent PEHR with mesh vs primary repair at our institution during a defined period if time, and to compare the outcomes between groups.

Methods

- We reviewed our prospective institutional database and performed a retrospective chart review of patients who underwent PEHR with biologic mesh vs. primary repair between October 2015-October 2019.
- The decision to use mesh was made intraoperatively by the surgeon (based on Tension at the hiatus, poor tissue quality or both) (Figure 1).
- Recurrence was defined as the presence of >2cm intrathoracic stomach on postoperative upper gastrointestinal (UGI) series (Figure 2).

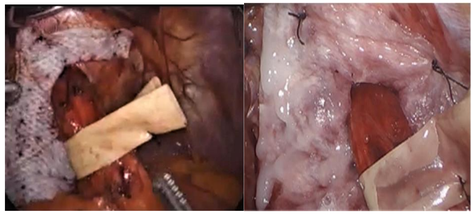


Figure 1. Biologic mesh use during PEHR

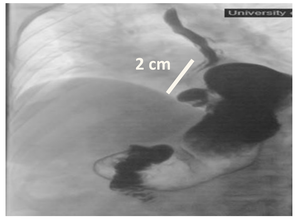


Figure 2. UGI image showing a recurrent HH with >2cm of intrathoracic stomach

Results

343 patients underwent PEHR during our period of study, including 233 (68%) patients undergoing first-time repair and 110 (32%) patients undergoing redo PEHR. Among first-time repair patients, 63% underwent a primary repair vs. 37% with mesh. Among redo-repair patients, 39% underwent a primary repair vs. 61% with mesh (Figure 3).

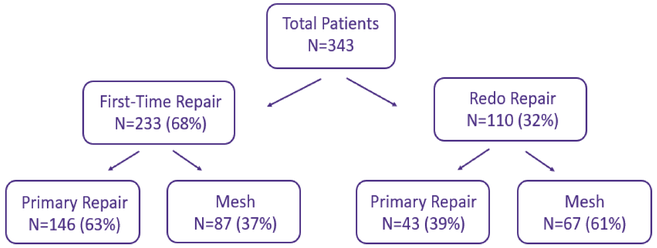


Figure 3. PEHR case series between 2015 and 2019

There were no demographic differences between groups (age, sex, race, BMI, smoking, or DM). Median LOS was 1 (IQR 1-3) day for all groups. OR times were not significantly increased with use of mesh.

There were no mesh-related complications (erosions or strictures). We obtained a postoperative UGI in 118 (51) of the first-time repair group and in 55 (50%) of the redo repairs. Most UGI studies were obtained for routine postoperative follow-up (median follow-up was 123 days). Radiographic recurrence was statistically higher in primary repair compared with mesh repair ($p<0.04$ first-time, and $p<0.02$ for redo repair (Table 1).

	First-time Repair (n=118)		Redo Repair (n=55)	
	Primary repair (n=72)	Mesh (n=34)	Primary repair (n=22)	Mesh (n=33)
Radiographic recurrence, n (%)	21 (30)	11 (24)	11 (58)	7 (21)
Reoperation, n (%)	2 (3)	2 (4)	1 (5)	1 (3)

Table 1

Conclusions

Selective biologic mesh reinforcement of the hiatus in both first-time and redo laparoscopic PEHR is associated with reduced incidence of early postoperative radiographic recurrence.

That mesh was only used in patients who the surgeon deemed were at increased risk for recurrence further highlights the potential benefit of mesh reinforcement of the hiatus at reducing short-term recurrence. Coupled with a zero incidence of complications associated with biologic mesh use, these findings suggest consideration of routine biologic mesh use in all patients undergoing first-time and redo laparoscopic PEHR.

References

1. Oelschlager BK, Pellegrini CA, Hunter JG, et al. Biologic prosthesis reduces recurrence after laparoscopic paraesophageal hernia repair: a multicenter, prospective, randomized trial. *Ann Surg*. 2006;244:481–490.
2. Oelschlager BK, Pellegrini CA, Hunter JG, et al. Biologic prosthesis to prevent recurrence after laparoscopic paraesophageal hernia repair: long-term follow-up from a multicenter, prospective, randomized trial. *JACS*. 2011;213: 461–468.