The Benefit of Different Techniques in Long-Term Outcomes After Paraesophageal Hernia Repair

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Introduction

The objective of this study is to examine the impact of different surgical techniques on revision rates and long-term patient reported outcomes following the standard of care, laparoscopic paraesophageal hernia repair (LPEHR). Variations in technique exist that may impact outcomes including technique for crural apposition, mesh reinforcement, addition of partial/complete fundoplication, and use of gastropexy. The relationship between operative techniques and outcomes remains unclear.

Methods

We assessed individuals undergoing LPEHR retrospectively, constructing a database including demographics, operative information, and revision surgeries. We assessed long-term patient reported outcomes using the GERD-HRQL score.

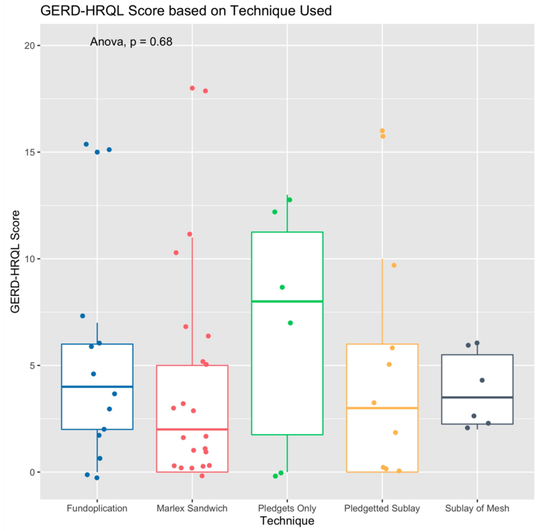
Results

111 consecutive subjects underwent an LPEHR. 9 of these subjects had a later revisional surgery, excluding them from sub-analysis with the GERD-HRQL questionnaire. The use of different techniques were compared to revision rates and overall GERD-HRQL scores. Statistical analyses were performed using ANOVA and the Pearson's $\chi 2$ test.

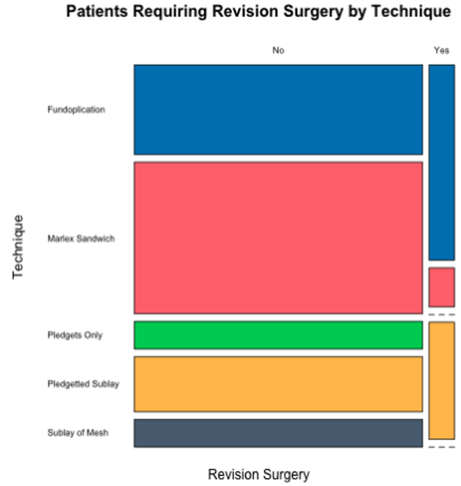
	All Subjects	GERD-HRQL Pop.
Age	58.9 (SD=13.0)	60.0 (SD=12.8)
Sex	61.2% Female	60.0% Female
BMI	30.68 (SD=4.9)	31.3 (SD=5.0)

Technique	Description
Marlex Sandwich	Use of a nonabsorbable, synthetic mesh placed between the crura with optional use of mesh sublay reinforcement, fundoplication, gastropexy, and pledgets
Pledgeted Sublay	Use of a mesh reinforcement sublay where crural approximation sutures incorporated the mesh; optional use of fundoplication and gastropexy
Unsecured Sublay	Use of an unsecured mesh reinforcement sublay; optional use of fundoplication and gastropexy
Pledgets Only	Use of pledgets only without marlex or a mesh reinforcement; optional use of fundoplication and gastropexy
Fundoplication	Fundoplication with optional use of gastropexy only (no mesh or pledget reinforcement)

The mean follow up time was 2.97 years (SD=0.61 years). The minimum follow up time was 1.7 years. 55 subjects completed the GERD-HRQL questionnaire and had available data on technique for analysis.



The ANOVA test demonstrates that there is no significant difference between technique used and GERD-HRQL score (p-value=0.68).



The Pearson's $\chi 2$ test demonstrates that there is no significant difference between technique used and revision surgery (p-value=0.10).

Conclusions

Technique used during repair of a paraesophageal hernia does not seem to have significant impact on the GERD-HRQL score. A trend towards higher rate of revision was noted for fundoplication alone and for pledgeted sublay, but this was not significant. The findings are limited by small sample size and possibility of selection bias due to the retrospective nature; however, this provides a framework to continue assessing the impact of variations in technique on outcomes in LPEHR.