Time is Money: Reducing Operative Time with a Modified but Equally Effective Fundoplication

Tayler J. James[1], Rachel Sargent[1], Luke R. Putnam[1], Brian Hodgens[1], Colin Dunn[2], Caitlin C. Houghton[1], Nikolai A. Bildzukewicz[1], John C. Lipham[1]

[1]University of Southern California, Los Angeles, CA
[2]Rutgers New Jersey Medical School, Newark, NJ

Introduction

Since 2018, we have been performing a modified partial anterior fundoplication that is more efficient than traditional approaches with excellent subjective outcomes. The aim of this study was to investigate objective outcomes of this approach and compare them to outcomes after Toupet fundoplication.

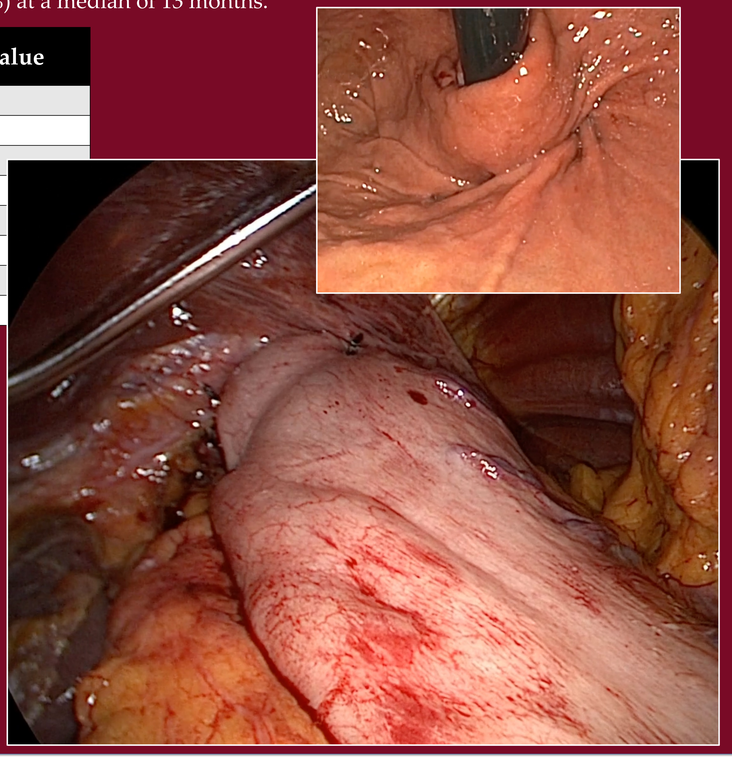
Methods

Data were collected on all gastroesophageal reflux disease (GERD) patients who underwent laparoscopic modified partial anterior or Toupet fundoplications from 2018-2020. The modified approach involves a 180-270 degree anterior wrap without dividing the short gastric vessels. Symptom control was measured by GERD health-related quality of life (GERD-HRQL) scores and daily acid suppressive medication. Thirty-day complications included readmissions and events resulting in delay in discharge.

Results

135 patients were included: 65 (48%) underwent modified partial anterior fundoplication and 70 (52%) underwent Toupet fundoplication. Preoperative variables including age, gender, body mass index, symptom duration, DeMeester scores, and hiatal hernia size were similar between groups. About half the patients in each group had large paraesophageal hernias >5cm (45% vs 56%, p=.14). Follow-up with upper endoscopy and/or video esophagram was available in 85 patients (63%) at a median of 13 months.

Outcomes	Partial Anterior Fundoplication (n=65)	Toupet Fundoplication (n=70)	p-value
Operative time (minutes)	79 ± 32	139 ± 45	**<.01**
Hospital length of stay (hours)	28 (24-47)	49 (27-73)	**.02**
30-day complications	3 (5%)	10 (14%)	.06
Reoperation	1 (2%)	2 (3%)	.60
Postoperative GERD-HRQL score	5 (1-11)	5 (1-15)	.73
Remain on daily acid suppressive medication	4 (6%)	5 (7%)	.38
Dysphagia requiring dilation	6 (9%)	10 (14%)	.37
Hiatal hernia recurrence >2cm	2 (5%)	5 (13%)	.18



Summary of Results

- Compared to Toupet fundoplication, the modified partial anterior fundoplication resulted in significantly shorter operative time and hospital length of stay
- Thirty-day complications and dysphagia requiring dilation were less frequent after partial anterior fundoplication than Toupet, although these did not reach statistical significance
- Symptom control and hiatal hernia recurrence were similar between groups

CONCLUSION

The modified partial anterior fundoplication nearly halved the operative time and resulted in similar postoperative outcomes to Toupet fundoplication.

Keck School of Medicine of USC

USC Department of Surgery
www.surgery.usc.edu