EndoFLIP® Driven Paraesophageal Hernia Repair Without Fundoplication: *Heresy or Good Practice?*

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INTRODUCTION

Historically, esophagogastric junction (EGJ) augmentation has been performed with hiatal hernia repair (HHR) due to the increased risk of hernia recurrence and postoperative reflux with cruroplasty alone. EndoFLIP® provides real-time analysis of the EGJ during HHR. The distensibility index (DI), provided by EndoFLIP® analysis, expresses the intraluminal pressure needed to open the lower esophageal sphincter.

METHODS

- Retrospective chart review of 63 patients

Population
- Patients who underwent a HHR with EndoFLIP® at a single institution between July 2020 and June 2022
- Concurrent bypass patients were excluded

Propensity Matching
- Covariates: operating pressure, balloon fill-volume, final DI ± 0.5 mm²/mmHg
- Preference for exact matches, no replacement

Analysis
- 42 patients were included in analysis (21 pairs)
- Outcomes: reflux, dysphagia, PPI use, radiographic recurrence, reoperation requirement, time to symptoms

Fig 1. Overview of the study methods.

- The final DI measurement was recorded post-cruroplasty or post-fundoplication, as appropriate.

HYPOTHESIS

Equivalent postoperative outcomes will be achieved with HHRs performed by cruroplasty alone and with fundoplication when the final DI is similar.

RESULTS

- Overall, the majority (67%) of cases involved symptomatic paraesophageal hernias and 21% were redo repairs.
- The cruroplasty alone and fundoplication cohorts had well matched baseline characteristics (Table 1).

Table 1. Baseline characteristics of the study groups

			Fundoplication	Cruroplasty
Age (years)		Mean ± SD	56 ± 14	63 ± 12
Female		No. (%)	18 (85.7)	18 (85.7)
BMI		Mean ± SD	27.9 ± 2.8	29.2 ± 3.7
Hiatal hernia	Type I	No. (%)	8 (28.1)	6 (28.6)
	Type II		3 (14.3)	0
	Type III		10 (47.6)	13 (61.9)
	Type IV		0	2 (9.5)
Hernia size[a,b]	Small	No. (%)	7 (33.3)	4 (19.0)
	Medium		7 (33.3)	9 (42.9)
	Large		5 (23.8)	7 (33.3)
Redo repair		No. (%)	3 (14.3)	6 (28.6)

[a] Hernia size based on interpretation of computed tomography by radiologist of record.

[b] Data not available for 3 patients.

- The median final DI amongst the fundoplication and cruroplasty alone groups were 2.1 and 1.9 mm²/mmHg, respectively (p=0.451).
- Table 2 organizes the outcomes of interest between cohorts.

Table 2. Outcome comparisons between hiatal hernia repairs with and without fundoplication

		Fundoplication	Cruroplasty
Follow-up (days)	Median (IQR)	144 (173)	100 (206)
Dysphagia	No. (%)	6 (28.6)	3 (14.3)
Time to dysphagia (days)	Median (IQR)	44 (207)	80
Reflux	No. (%)	4 (19.0)	7 (33.3)
Time to reflux (days)	Median (IQR)	249 (391)	127 (152)
Time to PPI (days)	Median (IQR)	111 (93)	103 (146)
Radiographic recurrence	No. (%)	2 (9.5)	1 (4.8)
Time to recurrence (days)	Mean ± SD	86 ± 80	248
Required reoperation	No. (%)	1 (4.8)	0

- There were no differences in the development of postoperative dysphagia (p=0.451) or GERD (p=0.228) in the median 111 days of follow-up.

CONCLUSIONS

The results of this study demonstrate no additional short term benefit with fundoplication performance. This suggest that EndoFLIP® guidance of the crural repair may allow for selective fundoplication performance.

