The Role of EndoFLIP With Timed Barium Swallow In The Evaluation of Achalasia

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BACKGROUND

The aim of this study is to compare timed barium swallow (TBS) with endoscopic functional luminal imaging probe (FLIP) in achalasia. TBS has been considered the gold standard objective test to assesses esophageal emptying and Eckhardt score (ES) is the most common clinical assessment. We hypothesize that EndoFLIP provides comparable information to TBS for the evaluation of achalasia.

METHODS

Retrospective review of 60 patients who underwent distal esophageal myotomy between 1/2020 and 8/2023. Use of EndoFLIP was at the surgeon's discretion. Post-op upper endoscopy/EndoFLIP, TBS and ES were offered per protocol at 3 months. Percent emptying on TBS was calculated by comparing the maximum height x width between 1 and 5 minutes. EndoFLIP was performed under sedation with the 8cm balloon. Distensibility index (DI) was measured at the 40ml fill after >30 seconds acclimation. Successful outcomes were defined as >90% emptying at 5 minutes, DI ≥2, and ES < 3. Only patients with complete datasets were included in the study cohort.

RESULTS

The final cohort included 16 patients (9M, 7F, mean age 60.1 y, mean BMI 26.8 kg/m^2). TBS, ES and DI we re consistent in only 30%: TBS and DI correlated in 38%, TBS and ES correlated in 50%, ES and DI correlated in 63%.

Table 1. Comparison of Eckardt score, TBS and DI

	Surgery	Timing of Dataset Collection	Eckardt Score	% emptying TBS	DI (mm^2/mmHg)
1	POEM	Post Myotomy	2	5	2.9
2	Heller	Post Myotomy	1	100	4.3
3	Heller	Post Myotomy	2	51	1.7
4	Heller	Post Myotomy	5	100	1
5	Heller	Post Myotomy	4	100	4.5
6	Heller	Post Myotomy	1	66	2
7	Heller	Post Myotomy	2	100	5
8	Heller	Post Myotomy	3	27	4
9	Heller	Post Myotomy	2	60	2.2
10	Heller	Post Myotomy	0	100	7
11	Heller	Pre Myotomy	5	21	4
12	Heller	Pre Myotomy	3	0	13
13	Heller	Pre Myotomy	4	57	0.7
14	Heller	Pre Myotomy	3	1	1
15	POEM	Pre Myotomy	7	0	2.1
16	Heller	Pre Myotomy	5	100	1.9

*Success in blue

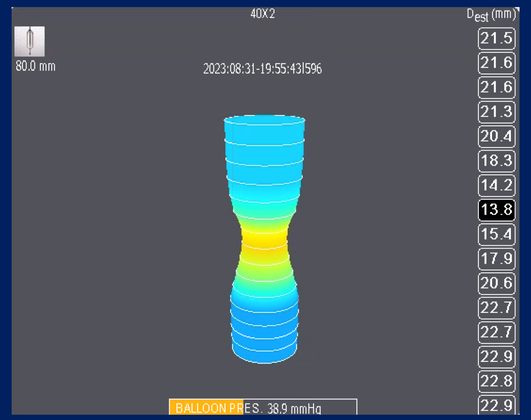


Figure 1: EndoFLIP Data

CONCLUSION

No single assessment modality comprehensively encompasses the symptomatic and objective characteristics of this complex disease. Neither EndoFLIP nor TBS consistently identify patients with abnormal Eckardt scores. Patients may have adequate myotomy by FLIP but still show poor emptying on TBS due to persistent esophageal body dysfunction. FLIP may be more useful to evaluate adequacy of myotomy post-surgery than TBS.