

Long term Follow up of Esophageal Strictures in Eosinophilic Esophagitis Using Structured Esophagram Protocol

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INTRODUCTION

- Reversal of transmural fibrostenosis in EoE is not well studied.
- Our aim was to determine the effect of medical therapy, dilation and initial diameter on esophageal lumen diameter using serial structured esophagrams over a period of years.

METHODS

- Retrospective study of 78 patients who completed two EoE protocol esophagrams at an academic tertiary referral center 2003 to 2021.
- Maximum and minimum esophageal diameters were measured on images during rapid swallowing in the RAO recumbent position. EoE was diagnosed by consensus definition and classified as active using ≥ 15 eosinophils per high power field (hpf).
- Demographics, medical therapies, and endoscopic data were obtained by chart review.
- Change in esophageal diameter was analyzed with Wilcoxon signed rank test and reported as median, 25th percentile (Q1), and 75th percentile (Q3) values.

RESULTS

- Median age at first esophagram was 36.2 and 60.3% were male. Medical therapies during last esophagram were PPI (39.5%), swallowed topical steroids (31.6%), diet elimination (13.2%), biologic therapies (1.3%), and clinical trials (1.3%).
- Eleven patients had dilation before the first esophagram and 33 between esophagrams without significant effect on results. Median years between esophagrams was 2.6 (**Table 1**).
- Median maximum diameter significantly increased by 1.0 mm (Q1: -1.0 mm, Q3: 3.0 mm) (P=0.034) independent of dilation (P=0.744).
- Median maximum diameter change per year significantly increased by 0.4 mm (Q1: -0.4 mm, Q3: 1.3 mm, P=0.010). The increase appeared most profound in patients starting in the lowest maximum diameter group (9-15 mm) with median increase of 3.0 mm while the highest starting maximum diameter group (>21 mm) had further narrowing by 2.0 mm (**Figure 1**).
- There was no difference in maximum diameter change for patients on medical therapy compared to no therapy at second esophagram at 1.0 mm (Q1: -1.0 mm Q3: 3.0 mm) and 1.0 mm (Q1: 0.0 mm Q3: 2.0 mm) respectively (P=0.640); however, for patients in disease remission at second esophagram, there was a significant increase in maximum diameter per year compared to active disease at 0.8 mm (Q1: 0.0 mm Q3: 5.3 mm) and 0.0 mm (Q1: -0.4 mm Q3: 0.6 mm) respectively (P=0.019).

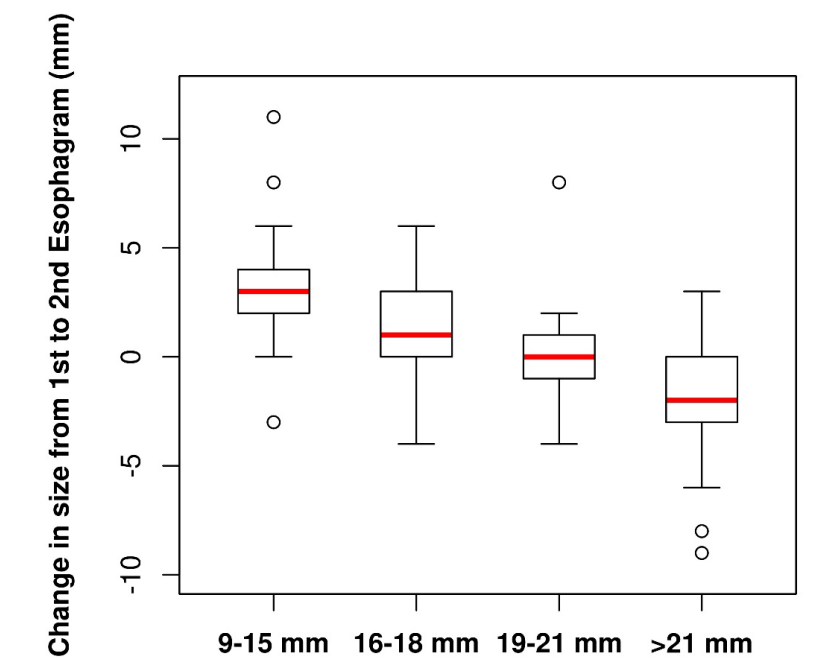
TABLE 1: ESOPHAGRAM CHARACTERISTICS

	No Dilation (n=43)	Dilation (n=35)	P-Value	Total (n=78)	P-Value
Median Years Between Esophagrams (range)	2.7 (0.1-11.6)	2.4 (0.1-12.4)		2.6 (0.1-12.4)	
Median Maximum Diameter Change, mm	1.0	1.0	0.744	1.0	0.034
Q1, mm	-1.0	0.0		-1.0	
Q3, mm	2.5	3.0		3.0	
Median Maximum Diameter Change Per Year, mm	0.3	0.4	0.961	0.4	0.010
Q1, mm	-0.4	0.0		-0.4	
Q3, mm	1.5	1.3		1.3	
Median Minimum Diameter Change, mm	0.0	1.0	0.317	0.0	0.277
Q1, mm	-2.0	-1.0		-1.5	
Q3, mm	2.0	3.0		2.0	
Median Minimum Diameter Change Per Year, mm	0.0	0.4	0.249	0.0	0.059
Q1, mm	-0.7	-0.3		-0.5	
Q3, mm	0.9	1.5		1.1	
mm, millimeters; Q1, 25 th percentile; Q3, 75 th percentile					

DISCUSSION

- Long term medical therapy leads to a small, but significant improvement in esophageal diameter in EoE. Whether this improvement is due to reversal of fibrosis or transmural inflammation is unclear.

FIGURE 1



Maximum Diameter Change Between Esophagram 1 and 2 based on starting maximum esophageal diameter.

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