Esophageal length and length to patient height ratio do not predict symptom reduction after POEM in patients with achalasia

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Background

Achalasia, characterized by the impairment of the lower esophageal sphincter function, is a debilitating esophageal motility disorder. Over time, achalasia patients often experience the development of esophageal elongation and tortuosity due to persistent obstruction at the lower esophageal sphincter (LES). The Per Oral Endoscopic Myotomy (POEM) procedure has emerged as a promising treatment option; however, factors influencing symptom resolution remain poorly understood. This study investigates whether esophageal length, a surrogate for disease duration and esophageal morphology, correlates with symptom reduction post-POEM. Additionally, we explore the potential significance of the ratio between esophageal length and patient height as an indicator of abnormal esophageal elongation as an indicator for symptom reduction post-POEM.

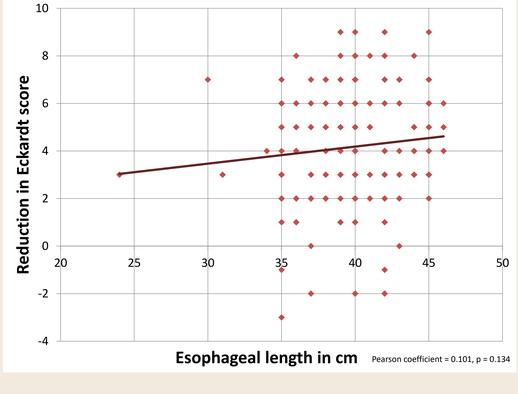
Methods

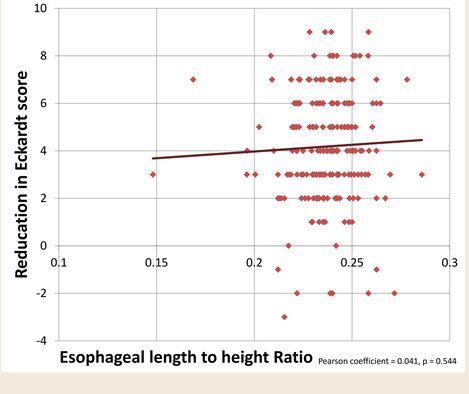
- **A Retrospective chart review**
- **Over a period of 13 years (2011-2023)**
- **Single tertiary care institution**
- **Total 223 patients included**
- **The data collected included:**
  - Pre-operative Eckardt Symptom Score
  - Intraoperative esophageal length measurements
  - Post-operative Eckardt Symptom Score)obtained during follow-up visits)
  - Patient height
- **Comparison:** Pearson correlation coefficients were employed to assess relationships between esophageal length and symptom reduction, as well as the ratio of esophageal length to patient height and symptom reduction.

Results

Our analysis revealed no significant correlation between esophageal length and symptom reduction post-POEM procedure (Pearson correlation coefficient = 0.101, p = 0.134).

Furthermore, no statistically significant correlation was found between the ratio of esophageal length to patient height and symptom reduction (Pearson correlation coefficient = 0.041, p = 0.544).





Below is a descriptive table of our data used for the above analysis

N	Esophageal length (mean)	Esophageal length to height ratio (mean)	Eckardt Score Pre-op (mean)	Eckardt Score Post-op (mean)
223	39.93 cm	0.24	5.1 (Range 0-12)	0.9 (Range 0-12)

Conclusions

This database analysis highlights that esophageal length, even when considered as a surrogate for the duration of illness and abnormal esophageal morphology, does not serve as a reliable predictor of symptom resolution post-POEM. These findings underscore the need for further research to identify more robust prognostic factors for the management of achalasia through the POEM procedure

Take Home Points

1. Esophageal length and length to height ratios cannot predict symptom reduction of achalasia patient after POEM
2. There are currently no anatomical markers for prediction of symptoms resolution post POEM.

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