

# Determination of the Association between Motility Disorders and the Development of Pharyngeal and Esophageal Diverticulum: A Prospective Chart Review

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## Introduction:

- Manometry is a diagnostic study that is commonly utilized to evaluate the motility of the gastrointestinal tract through measurements of pressure.
- Pharyngeal and esophageal diverticula are rare anatomical findings that have been theorized to occur as a result of various esophageal motility disorders. However, there is limited data available to formulate a strong association between the two diagnoses.

## Objective:

- In this study, we aim to look at patients with confirmed pharyngeal and esophageal diverticulum who have completed manometry testing to determine a potential association between these two anatomical and mechanical findings.

## Methods:

- We conducted a prospective chart review within our hospital network of patients who were found to have pharyngeal or esophageal diverticulum in all esophageal locations.
- Those patients who had completed esophageal manometry were then included in the study. Manometry findings were recorded including median integrated relaxation pressure (IRP) and distal contractile integral (DCI).
- Patients demographics including age, gender, and race were considered along with various risk factors such as history of narcotic use or autoimmune disease.

## Location of diverticula and manometry findings of the 16 patients included in the study:



Patient #	Diverticula Location	Manometry Findings	IRP (mmHg)	DCI (mmHg-s-cm)
1	Proximal	IEM	9	40
2	Proximal	Normal	11	5279
3	Proximal	Normal	8	3369
4	Proximal	EGJOO	29	556
5	Mid	Jackhammer	14	12537
6	Lower	Jackhammer	19	6271
7	Lower	Jackhammer	9	15215
8	Lower	Achalasia	25	25
9	Lower	IEM	8	363
10	Lower	IEM	12	45
11	Lower	EGJOO	21	1699
12	Lower	IEM	7	54
13	Lower	EGJOO	35	8666
14	Lower	Jackhammer	16	5297
15	Lower	IEM	14	1699
16	Lower	Normal	14	663

## Results:

- 16 total patients met inclusion criteria (proximal, n = 4 (25%), mid, n=1 (6%); and distal esophagus, n = 11 (69%)) Majority of the patients were female (69%) and Caucasian (81%) with a mean age of 68 years old  $\pm$  13 years.
- 13 of 16 patients had abnormal esophageal motility studies demonstrating ineffective esophageal motility (n = 5, 38%), esophagogastric junction outflow obstruction (n = 3, 23%), jackhammer esophagus (n = 4, 31%), or achalasia (n = 1, 8%).
- The average of the median IRP (normal 20 mmHg) was 15.7 mmHg  $\pm$  8.17 and the mean DCI was 3861.1 mmHg-s-cm  $\pm$  4750.5.

## Conclusion:

Overall, our results show that patients with esophageal and pharyngeal diverticulum have a high prevalence for co-existing motility disorders, proven by manometry. Due to this high association, we recommend motility screening in all patients with diverticulum especially prior to determining the need for surgical intervention.