

# POEM is Associated with Increased Reflux in All Positions Compared to Heller Myotomy

Jason Nasser, MD | Department of Internal Medicine, Cleveland Clinic, Cleveland, Ohio  
Siva Raja, MD, PhD | Digestive Disease & Surgery Institute, Cleveland Clinic, Cleveland, Ohio  
Madhusudhan Sanaka, MD | Digestive Disease & Surgery Institute, Cleveland Clinic, Cleveland, Ohio  
Scott Gabbard, MD | Digestive Disease & Surgery Institute, Cleveland Clinic, Cleveland, Ohio

## Background

- Achalasia is an esophageal motility disorder that results from a disruption of the neuromodulatory responses of the esophagus and lower esophageal sphincter (LES).
- A common consequence of treating the hypercontractile LES is worsened gastroesophageal reflux (GER).
- Peroral endoscopic myotomy (POEM) leads to a higher absolute rate of GER than Laparoscopic Heller Myotomy with Dor fundoplication (LHM); however, the exact patterns of reflux have not been well-described.

## Objective

- We aimed to study the comparative patterns of reflux after POEM and LHM

## Methods

- The charts of patients who underwent LHM or POEM across 2 years (2017-2019) at our institution were reviewed, and patients who had completed a 2-month post-treatment esophageal pH study off acid-lowering agents were included.
- Patients with a history of prior myotomy or who underwent Heller without Dor fundoplication were excluded.

# POEM patients spent 9% of their day in reflux compared to 3% of LHM, with relatively more supine reflux

## Results

- Of the 236 patients included, 85 (36%) had undergone POEM while 151 (64%) had undergone LHM.
- POEM patients who developed relatively more reflux in the supine position than upright comprised 41.1% compared to 21.7% of LHM,  $p=0.007$ .

**Table – Comparison of reflux patterns**

Characteristic	POEM	LHM	p-value
UPRIGHT			
# refluxes /1h	1.8	0.6	<0.001
% time in reflux	7.8	2.6	<0.001
# long refluxes /1h	0.18	0.06	<0.001
Mean duration of longest reflux (min)	19.0	9.9	<0.001
SUPINE			
# refluxes /1h	1.4	0.5	0.003
% time in reflux	10.1	3.5	<0.001
# long refluxes /1h	0.2	0.1	0.001
Mean duration of longest reflux (min)	35.8	12.4	<0.001
OVERALL			
# refluxes /24h	40.0	15.4	<0.001
% time in reflux	9.3	3.2	<0.001
# long refluxes /24h	4.0	1.7	<0.001
Mean duration of longest reflux (min)	45.7	19.0	<0.001
DeMeester Score	37.2	13.2	<0.001
% patients with more supine reflux	41.1	21.7	0.007

Long reflux episodes = duration > 5 minutes

## Discussion

- POEM patients had evidence of significantly more esophageal acid exposure across all indices.
- POEM patients notably had more supine-predominant reflux.
- The finding of abnormal reflux in both the upright and supine position, with relative skew towards supine reflux after POEM may help to better tailor anti-reflux therapies in this population.