

# PER ORAL ENDOSCOPIC MYOTOMY(POEM) FOR ACHALASIA CARDIA A CASE SERIES

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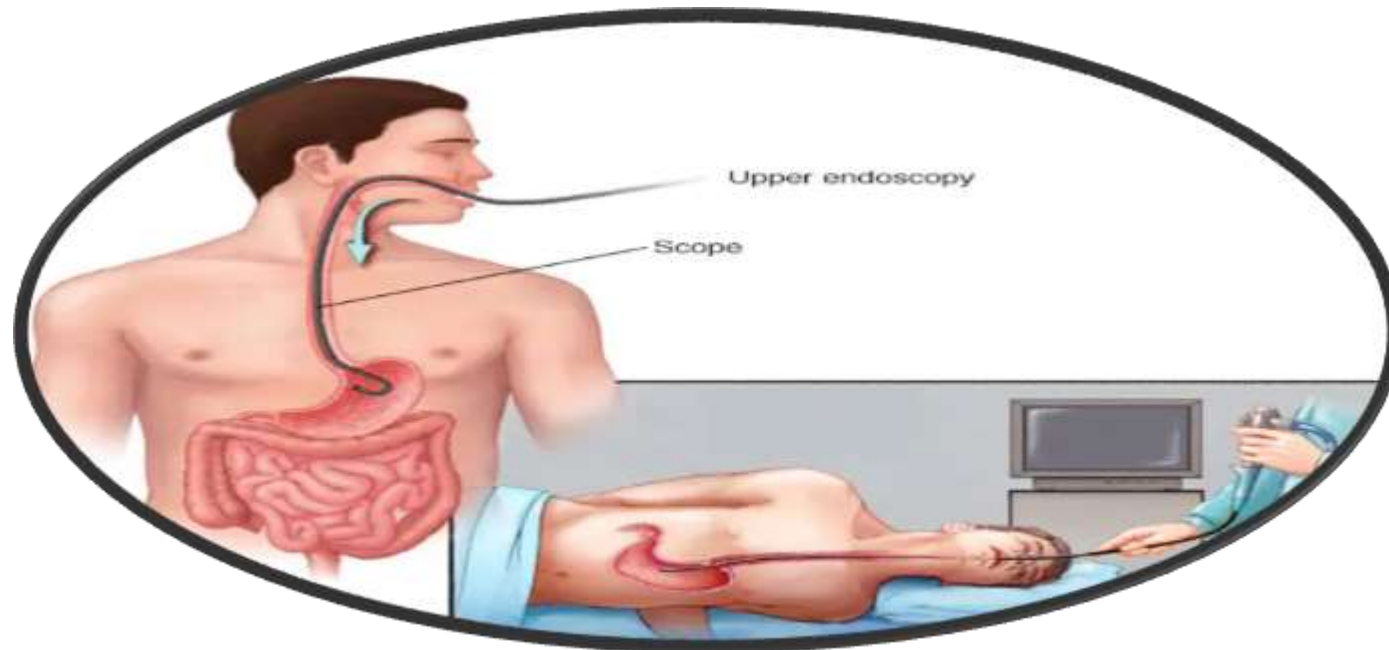
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## First Space Endoscopy:

- Most common type of endoscopy, involving the examination of the inner lining of the gastrointestinal tract, such as the esophagus, stomach, and intestines.
- Procedures like colonoscopy and upper endoscopy fall under this category.



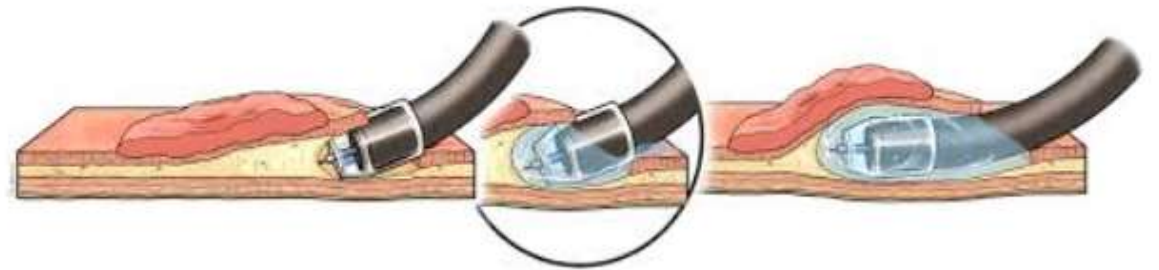
## Second Space Endoscopy:

- This refers to procedures that access the peritoneal cavity, which is the space surrounding the abdominal organs. Accessed through open or laparoscopic surgery



## Third Space Endoscopy:

The submucosal or third space is a virtual space between the mucosa and muscularis propria of the GI tract that can be expanded using various injectable solutions and accessed endoscopically



# Current spectrum of Third space endoscopy in gastrointestinal tract

## Esophagus

- Zenker's diverticulum
- Subepithelial tumors
- Achalasia cardia
- Strictures

## Stomach

- Refractory gastroparesis
- Subepithelial tumors

## Rectum

- Hirschsprung's disease



### Disease

### Procedure Acronym

**Achalasia Cardia**

E-POEM

**Gastroparesis**

G-POEM

**Subepithelial Tumors**

STER/EFTR

**Esophageal Diverticulum**

D-POEM

**Zenker's Diverticulum**

Z-POEM

**Esophageal Strictures**

POETRE

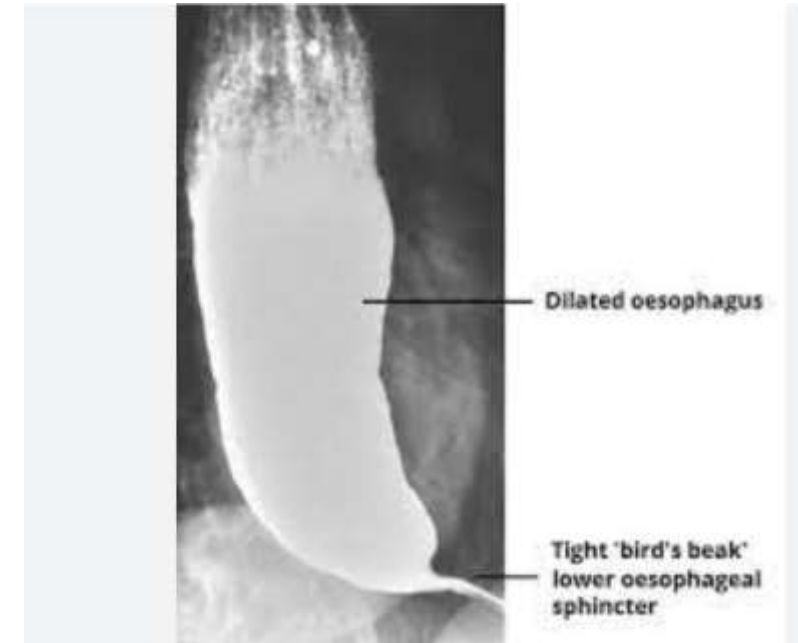
**Hirschsprung's Disease**

PREM

# ACHALASIA CARDIA

# INTRODUCTION

- The term “achalasia” was first coined by Hurst in 1927.
- Achalasia is a Greek word that means “failure of relaxation”.
- Characterized by **impaired LES relaxation** with swallowing and **aperistalsis** in the smooth muscle esophagus.



## CLINICAL PRESENTATION

Presenting Symptom	% of Patients Reporting
Dysphagia	82%–100%
Regurgitation	76%–91%
Weight loss	35%–91%
Chest pain	25%–64%
Heartburn	27%–42%
Nocturnal cough	37%
Aspiration	8%

*Source: Nenshi R, Takata J, Stegjenko S, et al. Surg Innov. 2010.*



## Eckardt Score for Severity of Symptoms of Achalasia

Sign/Symptoms	Score 0	Score 1	Score 2	Score 3
Recent weight loss (kg)	None	<5	5–10	>10
Dysphagia	None	Occasional	Daily	Each meal
Chest pain	None	Occasional	Daily	Several times a day
Regurgitation	None	Occasional	Daily	Each meal

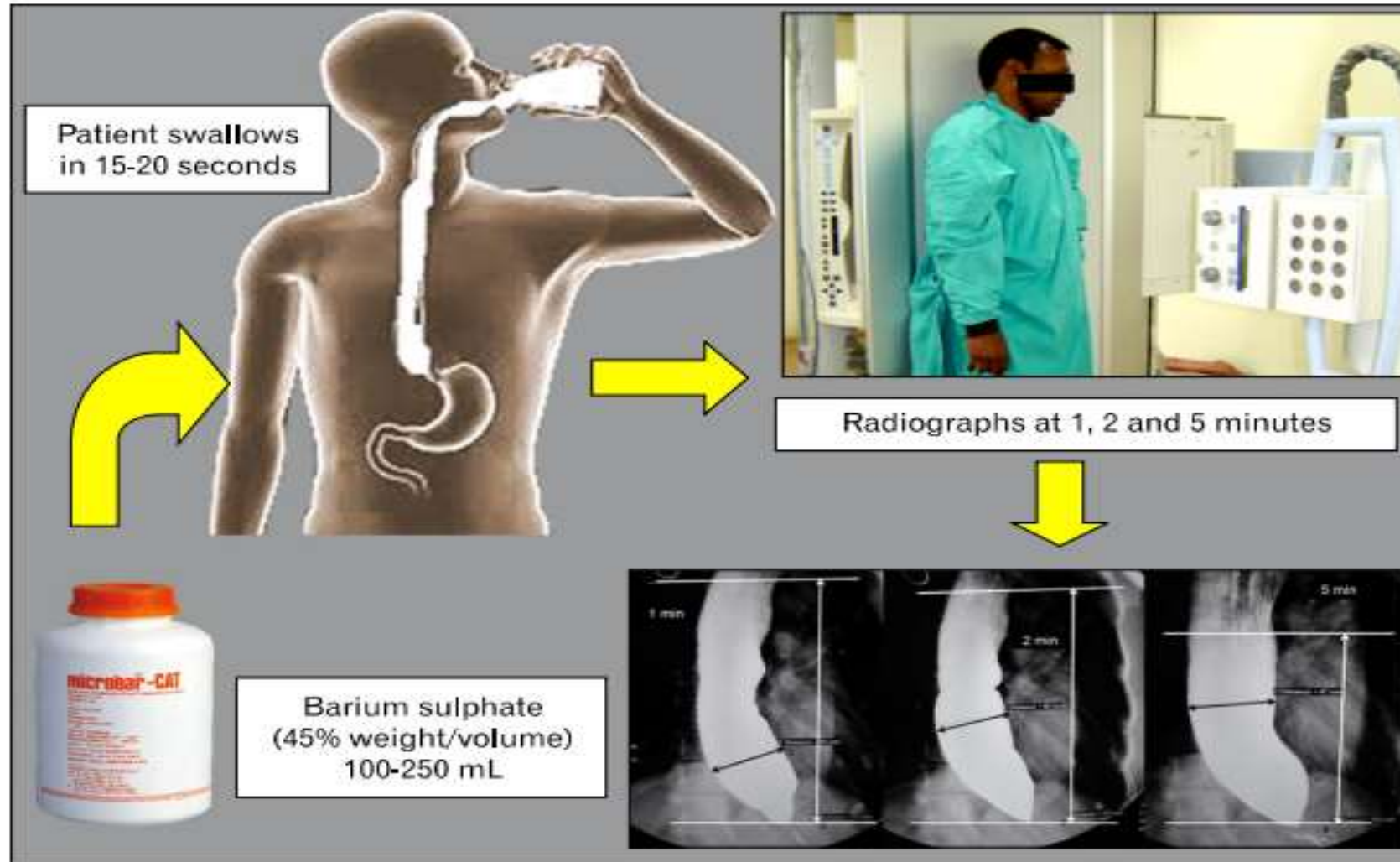
Score Range: 0–12

Clinical remission  $\leq 3$


# DIAGNOSTIC MODALITIES-ACHALASIA


- UPPER GI SCOPY
- TIMED BARIUM ESOPHAGOGRAM
- HIGH RESOLUTION MANOMETRY

# TIMED BARIUM ESOPHAGOGRAM



# TREATMENT-ACHALASIA

- 
- Pharmacologic Therapy- Nitrates,CCBs
  - Botulinum toxin type A

- 
- Endoscopic Pneumatic dilation
  - POEM

- 
- Laparoscopic Heller myotomy

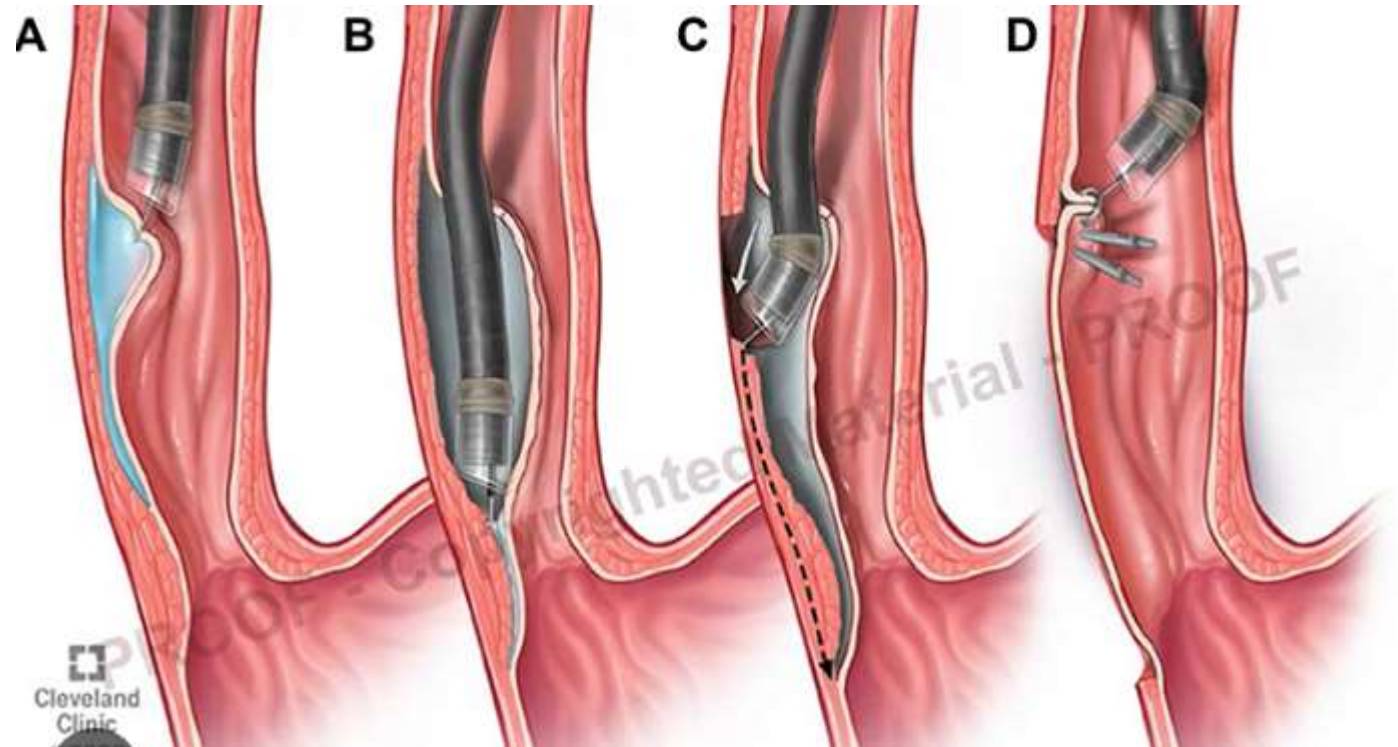
PER ORAL ENDOSCOPIC MYOTOMY

# Procedure

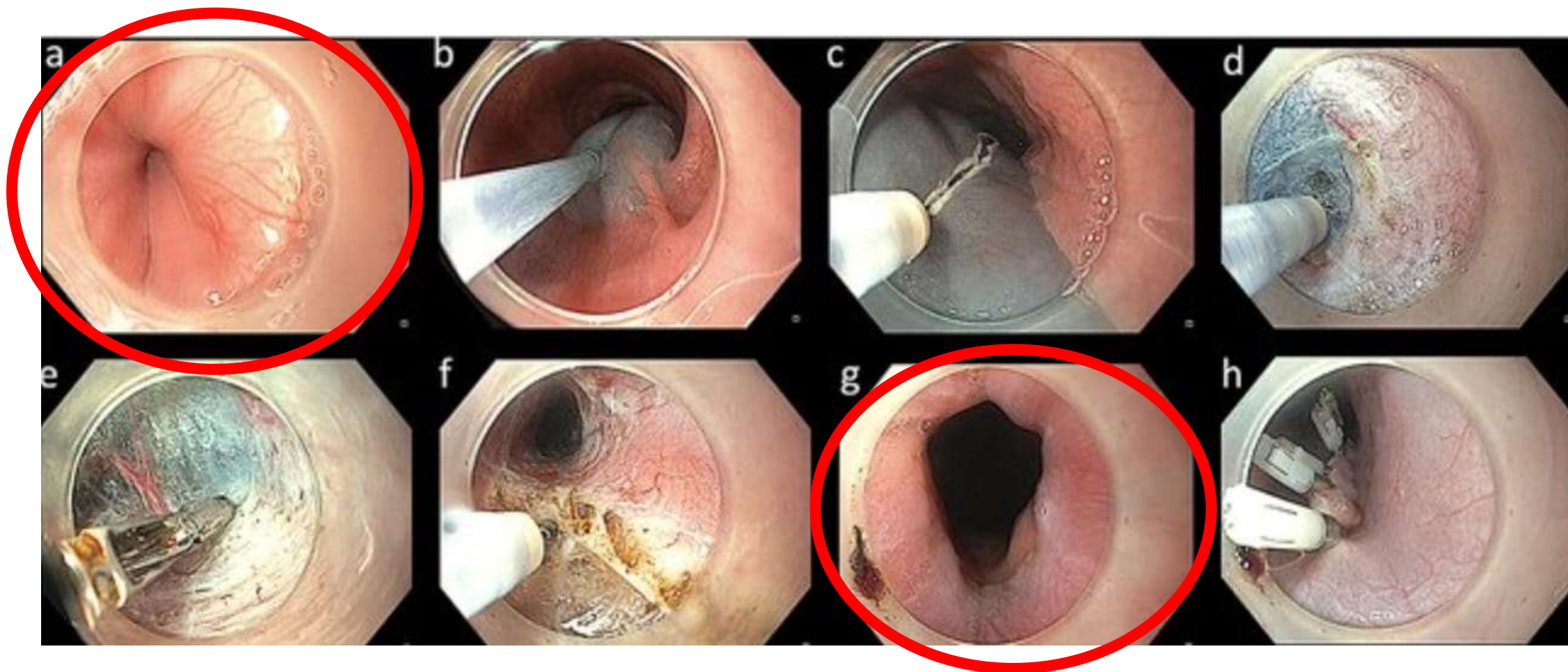
- Creation of submucosal bleb
- Incision over bleb

- Submucosal tunneling
- Myotomy

- Mucosal closure




# Procedure






# INDICATIONS

- 
- Achalasia Types I,II,III

- 
- Failed Pneumatic dilation
  - Failed Heller myotomy

- 
- Hypertensive LES
  - Nut cracker esophagus



## CONTRAINDICATIONS FOR POEM

- 
- Patients with severe coagulopathy
  - Severe Cardio-pulmonary disease

- 
- Cirrhosis with portal hypertension with varices
  - Severe stasis esophagitis and/or esophageal candidiasis

- 
- Conditions that cause severe, extensive fibrosis of the esophageal submucosa

# CASE SERIES

# Case 1

38 years, Male , Resident of Pimpri ,Pune

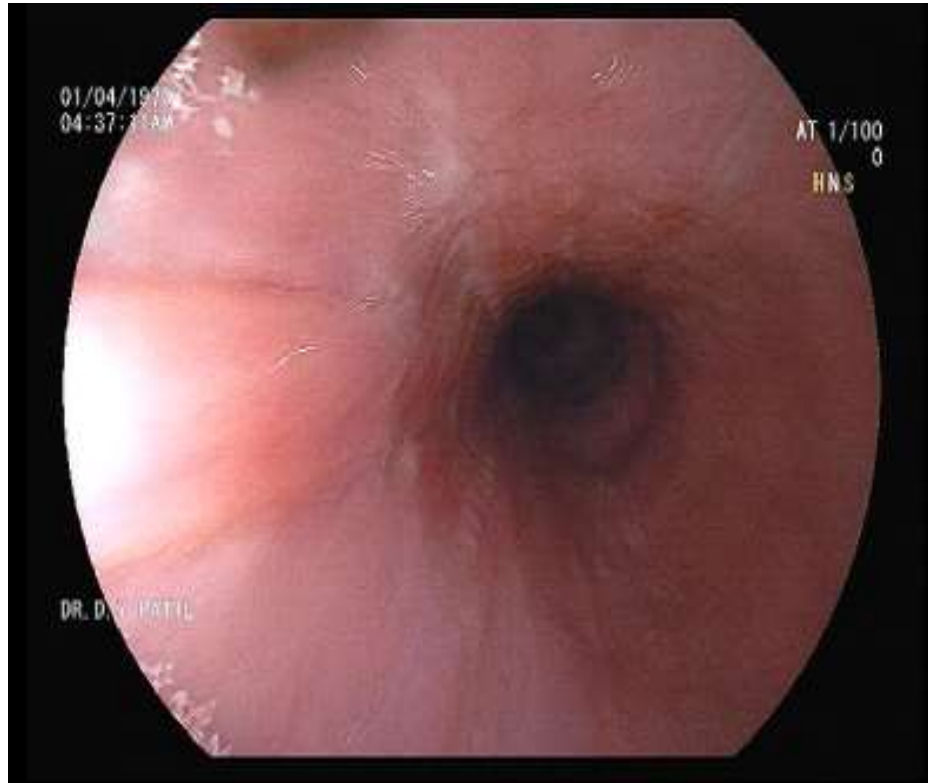
FARMER

**ESOPHAGEAL DYSPHAGIA** SINCE 1 Yr

- SOLIDS AND LIQUIDS,WITH EVERY MEAL
- OCCASIONAL REGURGITATION
- OCCASIONAL RETROSTERNAL CHEST PAIN
- 6 KGS WEIGHT LOSS IN 1 Yr

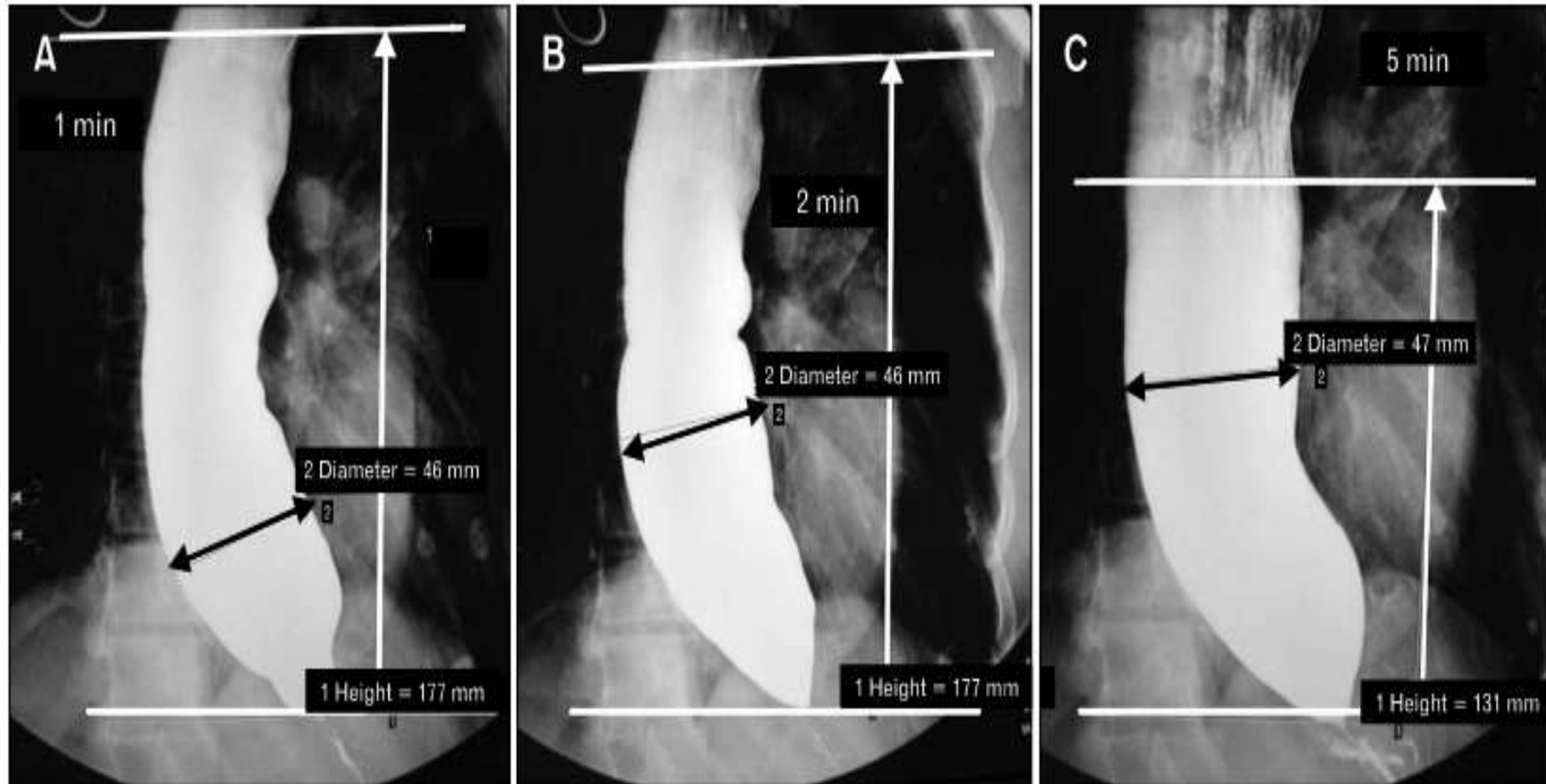


## OGDSCOPY:



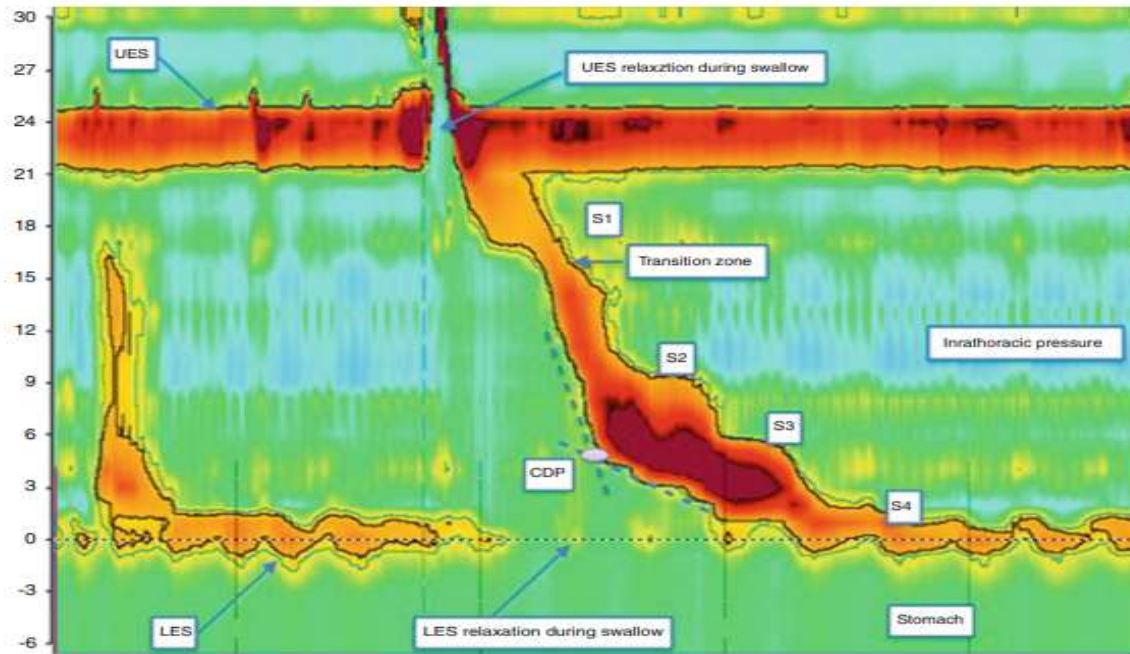
**MILDLY DILATED ESOPHAGUS WITH POOLING OF SALIVA  
SIGNIFICANT RESISTANCE AT GEJ,SCOPE NEGOTIATED WITH POPUP SENSATION INTO STOMACH**

# TIMED BARIUM ESOPHAGOGRAM

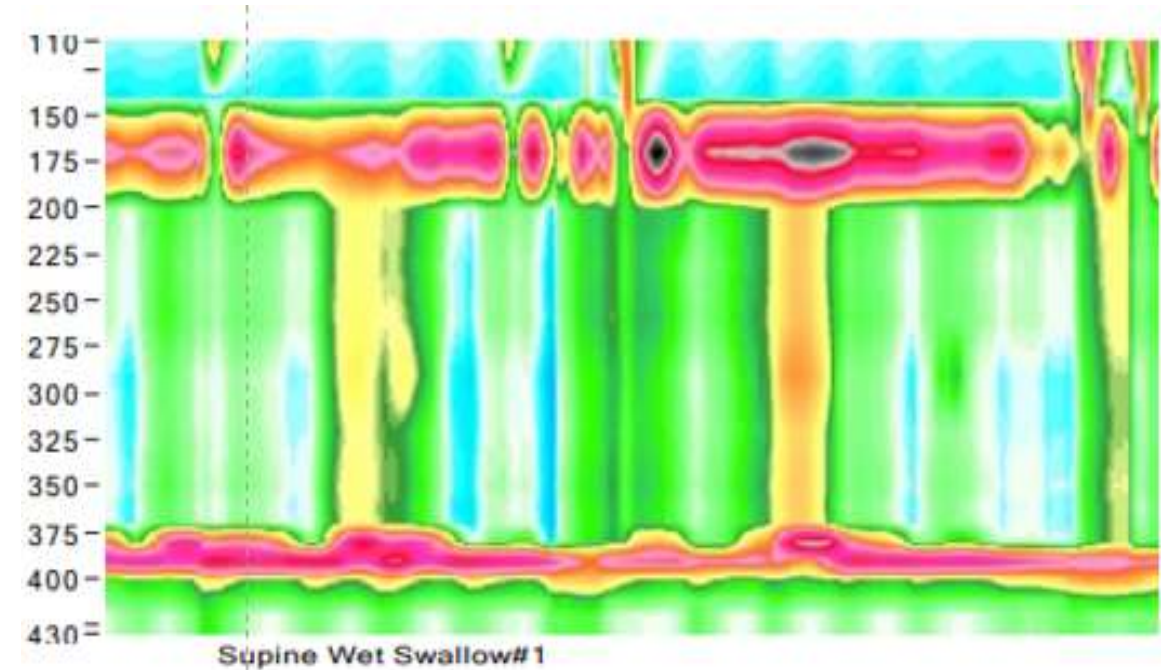


DELAYED EMPTYING WITH HOLD UP OF CONTRAST AT 5 MINUTES

# HIGH RESOLUTION MANOMETRY



NORMAL MANOMETRY STUDY



ACHALASIA CARDIA -TYPE II

# DIAGNOSIS

ACHALASIA CARDIA(TYPE II)-ECKARDT'S SCORE 7/12

# POEM PROCEDURE



07/11/2024  
10:33:02AM

\*1/100 ⊗  
Lv+3 AVE ⊗

S1: F/T  
S2: EZOOM  
S3: IRIS  
2.8 9.2  
9.3  
EG-760R  
7G402K081

\* ⊗  
HT NR  
SE 7  
7

DY PATIL HOSP. PUNE

BL-7000

0

00:00:00.01

	CASE 2 (32y,F)	CASE 3 (40y,M)	CASE 4 (36y,M)	CASE 5 (48y,M)	CASE 6 (50y,F)
<b>SYMPTOMS</b>	ESOPHAGEAL MOTOR DYSPHAGIA SINCE 4 YRS, <ul style="list-style-type: none"> <li>• WITH EVERY MEAL</li> <li>• &gt;10KGS WEIGHT LOSS</li> <li>• OCCASIONAL REGURGITATION</li> </ul>	ESOPHAGEAL MOTOR DYSPHAGIA SINCE 6 MONTHS, <ul style="list-style-type: none"> <li>• WITH EVERY MEAL</li> <li>• 6 KGS WEIGHT LOSS</li> <li>• REGURGITATION DAILY</li> </ul>	ESOPHAGEAL MOTOR DYSPHAGIA SINCE 3YRS <ul style="list-style-type: none"> <li>• DAILY</li> <li>• 6KGS WEIGHT LOSS</li> <li>• CHEST PAIN DAILY</li> <li>• REGURGITATION DAILY</li> </ul>	ESOPHAGEAL MOTOR DYSPHAGIA SINCE 2YRS <ul style="list-style-type: none"> <li>• WITH EVERY MEAL</li> <li>• 5KGS WEIGHT LOSS</li> <li>• REGURGITATION DAILY</li> <li>• OCCASIONAL CHEST PAIN</li> </ul>	ESOPHAGEAL MOTOR DYSPHAGIA SINCE 4 YRS, <ul style="list-style-type: none"> <li>• WITH EVERY MEAL</li> <li>• 12KGS WEIGHT LOSS</li> <li>• REGURGITATION DAILY</li> </ul>
<b>ECKDART'S SCORE</b>	7/12	7/12	8/12	8/12	8/12
<b>OGDSCOPY</b>	DILATED ESOPHAGUS WITH RESISTANCE AT THE GE JUNCTION	DILATED ESOPHAGUS WITH POOLING OF SALIVA	DILATED ESOPHAGUS WITH RESISTANCE AT THE GE JUNCTION	DILATED ESOPHAGUS WITH POOLING OF SALIVA	DILATED ESOPHAGUS WITH POOLING OF SALIVA
<b>HIGH RESOLUTION MANOMETRY</b>	ACHALASIA CARDIA TYPE II	ACHALASIA CARDIA TYPE I	ACHALASIA CARDIA TYPE II	ACHALASIA CARDIA TYPE II	ACHALASIA CARDIA TYPE II
<b>TIMED BARIUM ESOPHAGOGRAM</b>	DELAYED EMPTYING WITH HOLD UP OF CONTRAST AT 5 MINUTES	DELAYED EMPTYING WITH HOLD UP OF CONTRAST AT 5 MINUTES	DELAYED EMPTYING WITH HOLD UP OF CONTRAST AT 5 MINUTES	DELAYED EMPTYING WITH HOLD UP OF CONTRAST AT 5 MINUTES	DELAYED EMPTYING WITH HOLD UP OF CONTRAST AT 5 MINUTES

# ON FOLLOW UP AFTER 3 MONTHS

	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6
ECKDART'S SCORE	3/12	2/12	3/12	2/12	3/12	2/12
POST POEM ADVERSE EVENTS	NONE	NONE	MILD GASTRO ESOPHAGEAL REFLUX	NONE	NONE	NONE

# DISCUSSION



## **Clinical Outcomes and Complications for Achalasia Patients Admitted After Per-Oral Endoscopic Myotomy**

### **CONCLUSION:**

- There was no inpatient mortality conferring an excellent safety profile of this procedure.
- In years to come, the trends of the utilization of POEM are expected to rise, and the focus on safety and same day discharge or observation may be one key measure of POEM quality

# Peroral endoscopic myotomy: 10-year outcomes from a large, single-center U.S. series with high follow-up completion and comprehensive analysis of long-term efficacy, safety, objective GERD, and endoscopic functional luminal assessment

Rani J Modayil <sup>1</sup>, Xiaocen Zhang <sup>2</sup>, Brooke Rothberg <sup>1</sup>, Maria Kollarus <sup>1</sup>, Iosif Galibov <sup>1</sup>, Hallie Peller <sup>1</sup>, Sharon Taylor <sup>1</sup>, Collin E Brathwaite <sup>1</sup>, Bhawna Halwan <sup>1</sup>, James H Grendell <sup>1</sup>, Stavros N Stavropoulos <sup>1</sup>

**Conclusions:** POEM is exceptionally safe and highly effective on long-term follow-up, with >90% clinical success at  $\geq 5$  years.

**Systematic Review and Meta-analysis**

**Peroral endoscopic myotomy compared to laparoscopic Heller myotomy and  
pneumatic dilation in the treatment of achalasia: a systematic review**

**CONCLUSIONS:**

- POEM has improved efficacy compared to PD with similar cost effectiveness.
- POEM results in comparable patient outcomes compared to LHM.
- POEM achieved shorter operative times, reduced blood loss, and less pain, shorter hospital stay compared with LHM.
- Overall, POEM is a feasible first-line treatment for achalasia.

# The Efficacy of Peroral Endoscopic Myotomy vs Pneumatic Dilation as Treatment for Patients With Achalasia Suffering From Persistent or Recurrent Symptoms After Laparoscopic Heller Myotomy: A Randomized Clinical Trial



Caroline M G Saleh <sup>1</sup>, Pietro Familiari <sup>2</sup>, Barbara A J Bastiaansen <sup>1</sup>, Paul Fockens <sup>1</sup>, Jan Tack <sup>3</sup>, Guy Boeckxstaens <sup>3</sup>, Raf Bisschops <sup>3</sup>, Aaltje Lei <sup>1</sup>, Marlies P Schijven <sup>1</sup>, Jan Guido Costamagna <sup>2</sup>, Albert J Bredenoord <sup>4</sup>

**Conclusions:** Among patients with achalasia experiencing persistent or recurrent symptoms after LHM, POEM resulted in a significantly higher success rate than PD, with a numerically higher incidence of grade A-B reflux esophagitis.



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# Per Oral Endoscopic Myotomy (POEM) for pediatric achalasia: Institutional experience and outcomes

Mikael Petrosyan <sup>a</sup>  , Shikib Mostammand <sup>b</sup>, Adil A. Shah <sup>a</sup>, Anil Darbari <sup>b</sup>, Timothy D. Kane <sup>a</sup>

## Conclusions

Peroral endoscopic myotomy is a safe and effective approach for pediatric achalasia.'

# GASTRO ESOPHAGEAL REFLUX POST-POEM

- Incidence of post-POEM GER has been reported as high as 40-60% in recent literature.
- GER is more frequent after POEM as compared with LHM or PD.
- Most GER is mild and easily treatable using proton pump inhibitors.
- Anti-reflux procedures have been reported for treatment of refractory post-POEM GER.

# SUMMARY:

- The endoscopic management of achalasia and nonachalasia spastic esophageal motility disorders has advanced with the introduction of POEM.
- Esophageal POEM is the most studied of the third-space endoscopy procedures currently being performed.
- The available evidence suggests excellent results with E-POEM in treatment-naïve and treatment-failure cases of achalasia.
- Therefore, E-POEM has the potential to become the treatment of choice in a variety of spastic as well as nonspastic motility disorders of the esophagus.

THANK YOU