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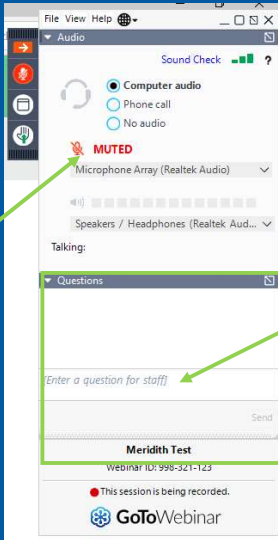
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All attendees will be muted and will remain in Listen Only Mode.

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ACG will send a link to a CME & MOC evaluation to all attendees on the live webinar.

ABIM Board Certified physicians need to complete their MOC activities by December 31, 2023 in order for the MOC points to count toward any MOC requirements that are due by the end of the year. No MOC credit may be awarded after March 1, 2024 for this activity.

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If you plan to claim MOC Points for this activity, you will be asked to: Please list specific changes you will make in your practice as a result of the information you received from this activity.

Include specific strategies or changes that you plan to implement.
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ACG Virtual Grand Rounds

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Technology
Committee

Week 9 –Thursday, March 2, 2023
Best of ACG 2022! Outstanding Science, Expert Discussions
 Moderators: Vivek Kaul, MD, FACC and Vladimir M. Kushnir MD
 Faculty: Amer AlSamman, MD; Adam Buckholz, MD; Daniel Castaneda, MD; Sarah M. Enslin, PA-C; and Daniela Guerrero Vinsard, MD
 Panelists: Prabhleen Chahal, MD, FACC; Jean Chalhoub, MD; Ryan B. Perumpail, MD; Aparna Repaka, MD; Brandon A. Wuertth, MD
At Noon and 8pm Eastern





Week 10 – Thursday, March 9, 2023
 The Role of Genetic Testing in Early Colorectal Cancer Detection
 Faculty: Jordan J. Karlitz, MD, FACC; Heather L. Hampel, MS, CGC; and Candace Peterson, MS, CGC
At Noon and 8pm Eastern

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Disclosures

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Gregory B. Haber, MD, FACC

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POEM Approaches for the Esophageal and Pyloric Sphincters

Gregory Haber MD

Professor of Medicine

Director of Advanced Therapeutics and Innovation

NYU Langone Medical Center

New York NY



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Per Oral Endoscopic Myotomy

- Myotomy of LES
- Myotomy of Esophageal MP
- Cricopharyngeal Myotomy
- Diverticular Rim Myotomy
- Pyloric Sphincter Myotomy
- Myotomy for Access for Endoscopic Fundoplication

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POEM Approaches for the Esophageal and Pyloric Sphincters

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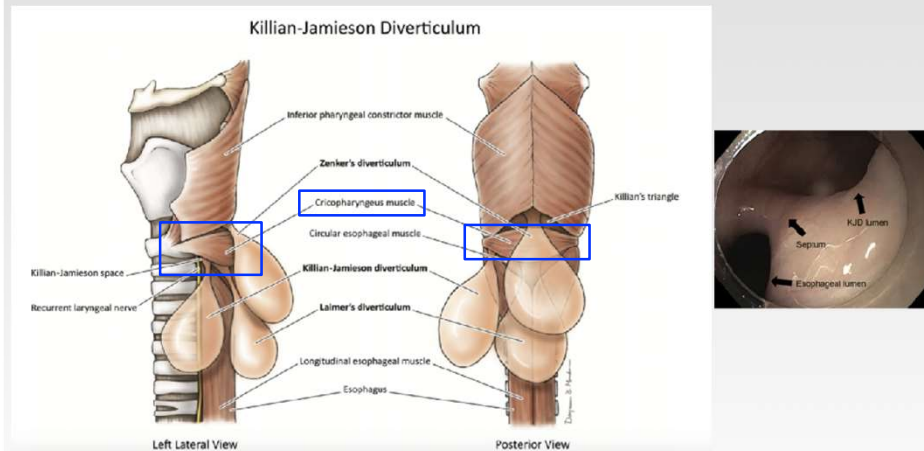
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Per Oral Endoscopic Myotomy

- Myotomy of LES
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- Cricopharyngeal Myotomy
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- Pyloric Sphincter Myotomy
- Myotomy for Access for Endoscopic Fundoplication

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Zenker's/Killian-Jamieson



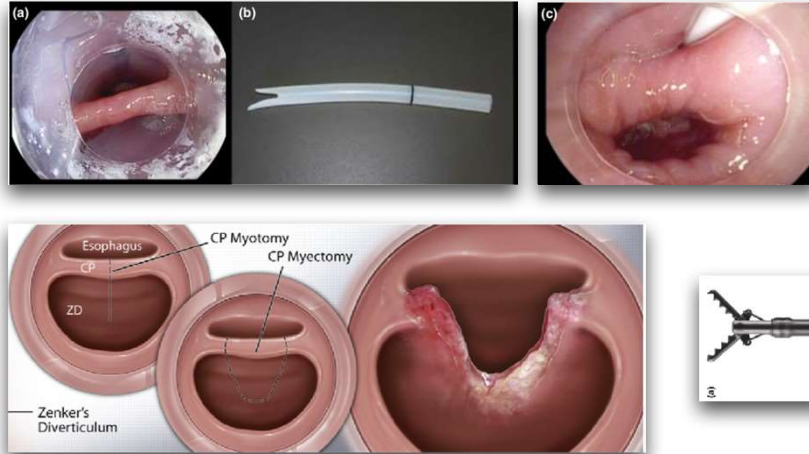
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Endoscopic Crico-Pharyngeal Myotomy

- Conventional approach is transection of the septum cutting mucosal and muscle planes
- The myotomy is limited by the depth of the diverticular pouch
- Recurrence occurs in 15-20% of pts thought to be due to incomplete myotomy or regrowth of the muscle
- New iterations to reduce recurrence include Myomectomy and Z-POEM

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Techniques of Septotomy and Myotomy



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Summary of Flexible Endoscopic Septum Division

Study	N	Treatment success rate (%)	Average follow-up duration (months)	Recurrence rate (%)
Ishioka <i>et al.</i> 1995 ¹¹	42	100	38	7.1
Mulder <i>et al.</i> 1995 ¹⁰	20	100	6.7	0
Hashiba <i>et al.</i> 1999 ³²	47	96	1 day to 1 year	4.2
Evrard <i>et al.</i> 2003 ³³	30	96.6	12.5	3.3
Rabenstein <i>et al.</i> 2007 ³⁴	41	95.1	16	12.2
Costamagna <i>et al.</i> 2007 ³⁵	11 [†]	91	6.5	9
Vogelsang <i>et al.</i> 2007 ³⁰	31	84	24	32.3%
Christiaens <i>et al.</i> 2007 ³⁶	21	100	22.6	0
Al-Kadi <i>et al.</i> 2010 ³⁷	18	78	27.5	11.1
Case & Baron 2010 ³⁸	22	100	12.7	31.8
Repici <i>et al.</i> 2010 ³⁹	32	87.5	23.9	6.2
Repici <i>et al.</i> 2011 ⁴⁰	28	92.9	20	3.6
Huberty <i>et al.</i> 2013 ⁴¹	150	94.6	43	23.1
Manno <i>et al.</i> 2014 ⁴²	19	100	27	10.5
Laquière <i>et al.</i> 2015 ⁴³	42	88.1	16	14.2
Battaglia <i>et al.</i> 2015 ⁴⁴	31	90.3	7	6.5
Halland <i>et al.</i> 2016 ⁴⁵	52	100	26	11.5
Pescarus <i>et al.</i> 2016 ⁴⁶	26	100	21.8	11.5
Costamagna <i>et al.</i> 2016 ⁴⁷	89	85.5	36	10.8
Antonello <i>et al.</i> 2016 ⁴⁸	59	83.1	18	18.6
Gölder <i>et al.</i> 2017 ⁴⁹	18	88.9	3	5.6
Rouquette <i>et al.</i> 2017 ⁵⁰	24	91.7	19.5	12.5

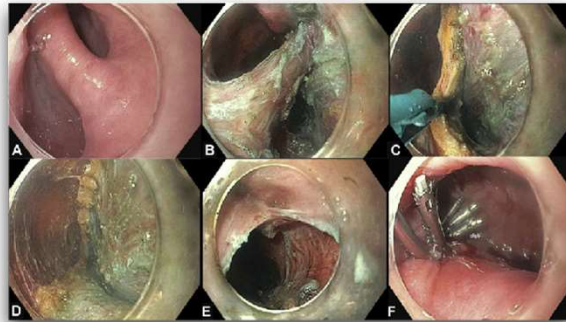
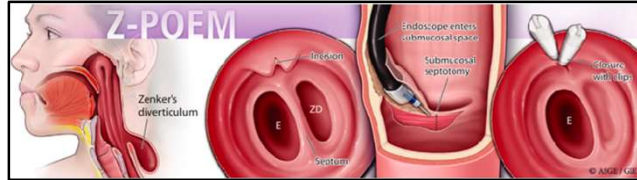
Pooled Success Rate of 91%, Adverse Events 11.3%, Recurrence 16.3%

Ishaq S, Dig Endosc, 2018

18

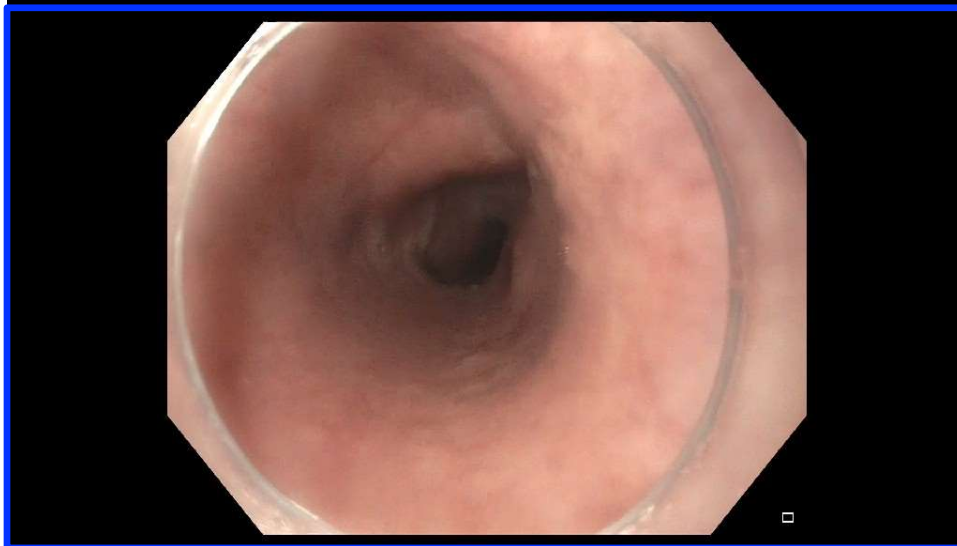
An international study on the use of peroral endoscopic myotomy in the management of Zenker's diverticulum
Juliana Yang, MD,¹ Stephanie Novak, MD,² Michael Ujiki, MD,² Óscar Hernández, MD,³ Pankaj Desai, MD,⁴ Petros Benias, MD,⁵ David Lee, MD,⁶ Kenneth Chang, MD,⁶ Bertrand Brieau, MD,⁷ Maximilien Barret, MD,⁸ Nikhil Kumta, MD,⁸ Xianhui Zeng, MD,⁹ Bing Hu, MD,⁹ Konstantinos Delis, MD,¹⁰ Mouen A. Khashab, MD,¹⁰

GIE, 2020



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Zenker's/Killian-Jamieson



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An international study on the use of peroral endoscopic myotomy in the management of Zenker's diverticulum GIE 2020

Juliana Yang, MD,¹ Stephanie Novak, MD,² Michael Ujiki, MD,³ Óscar Hernández, MD,³ Pankaj Desai, MD,⁴ Petros Benias, MD,⁵ David Lee, MD,⁶ Kenneth Chang, MD,⁶ Bertrand Bricau, MD,⁷ Maximilien Barret, MD,⁸ Nikhil Kumta, MD,⁸ Xianhui Zeng, MD,⁹ Bing Hu, MD,⁹ Konstantinos Delis, MD,¹⁰ Mouna A. Khashab, MD

Outcomes	Value
Clinical success, % (n)	92 (69)
Technical success, % (n)	97.3 (73)
Mean peroral endoscopic myotomy procedure time, min, mean \pm SD	52.4 \pm 2.9
Repeat interventions	
Surgical interventions	0
Endoscopic interventions	1
Postprocedure follow-up, days, median (IQR)	291.5 (103.5-436)
Days of hospitalization, mean \pm SD	1.8 \pm .2
Preprocedure dysphagia score, mean \pm SD	1.96 \pm .68
Postprocedure dysphagia score, mean \pm SD	.25 \pm .52

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Achalasia

- ◇ Primary motility disorder characterized by esophageal aperistalsis and failure of receptive relaxation of a frequently hypertensive LES
- ◇ Affects one in 100,000
- ◇ Myenteric inflammation with loss of ganglion cells and fibrosis of myenteric nerves
- ◇ Cardinal symptoms are dysphagia, chest pain, regurgitation and weight loss

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Eckhardt Score

Points	Dysphagia, Chest Pain, Regurg	Weight Loss
0	No Symptom	none
1	Occasional	<5 Kg
2	Daily	5-10 Kg
3	Every Meal	>10 Kg
	Modified Normal 3 or less	

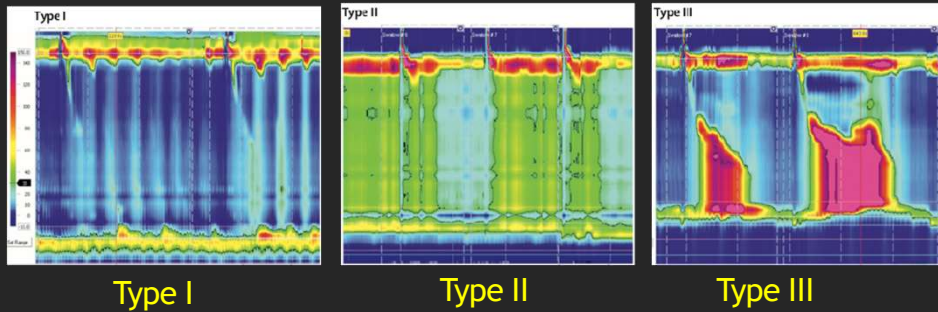
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Investigation

- UGIS- dilated esophagus, bird beak, air fluid level, absence of gastric air bubble
- Timed Barium Swallow: 200cc barium, upright pt, height of barium column at 1,2,5 min
- EMS / HRM
- CT chest abdomen or EUS
- EGD – aspiration risk : clear fluids prior to fasting, overtube or intubation

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High Resolution Manometry



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Spastic Motility Disorders

Table 1
Selected esophageal motility disorders

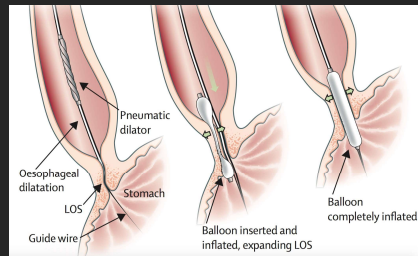
Diagnosis	Peristalsis	Criteria
<i>Achalasia</i>	—	IRP ≥ 15
Type I (classic)	Absent	No additional criteria
Type II (panpressurization)	Abnormal	$\geq 20\%$ panpressurization
Type III (vigorous)	Abnormal	$\geq 20\%$ spastic contractions
EGJ outflow obstruction	Intact or weak	IRP ≥ 15
DES	Absent	Normal IRP, $\geq 20\%$ premature contractions
Jackhammer esophagus	Absent	Normal IRP, DCI > 8000
Nutcracker esophagus	Abnormal	Normal IRP, DCI > 5000

Abbreviations: DCI, distal contractile integral (mm Hg-sec-cm); DES, diffuse esophageal spasm; EGJ, esophagogastric junction; IRP, integrated relaxation pressure (mm Hg).

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Pneumatic Dilation

Rigiflex	30mm	35mm	40mm
Response	74%	86%	90%



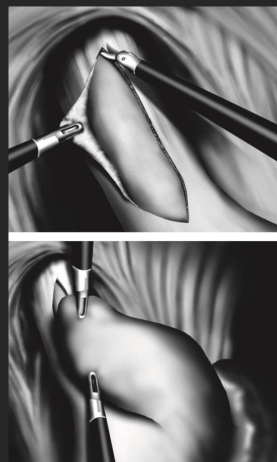
2-3% Perforation

1/3 Relapse <5yr

Richter JE, Expert Rev Gastroenterol Hepatol, 2008

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Heller Myotomy




- Anterior myotomy with a partial fundoplication
- Reflux Sx 31.5% vs 8.8% without and with fundoplication
- Traditionally Dor but Toupet equally effective
- Laparoscopic better than thoracoscopic (89% vs 78%)

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POEM

...Pasricha initially reported a method of submucosal endoscopic myotomy with no skin incision in an experimental model [1]. Subsequently, Inoue modified the technique and applied it clinically...[2].

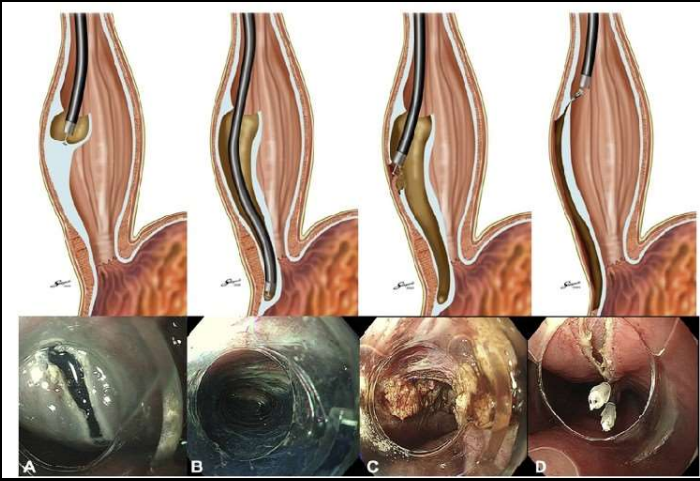
1. Pasricha, et al. Submucosal endoscopic esophageal myotomy: a novel experimental approach for the treatment of achalasia. *Endoscopy* 2007;39(9): 761-4.
2. Inoue H, et al. First clinical experience of submucosal endoscopic myotomy for esophageal achalasia with no skin incision. *Gastrointest Endosc* 2009;69: A122



Welcome to
Dr. HARUHIRO INOUE
Official Homepage

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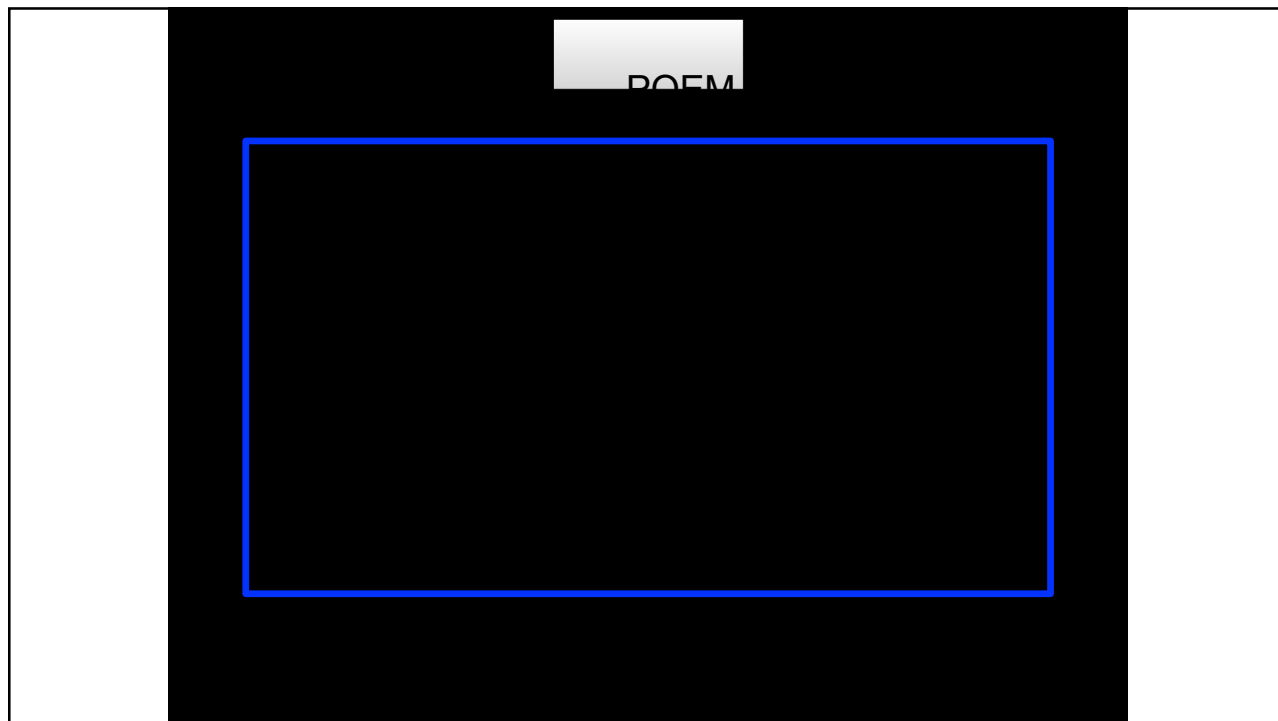
Steps in POEM Procedure



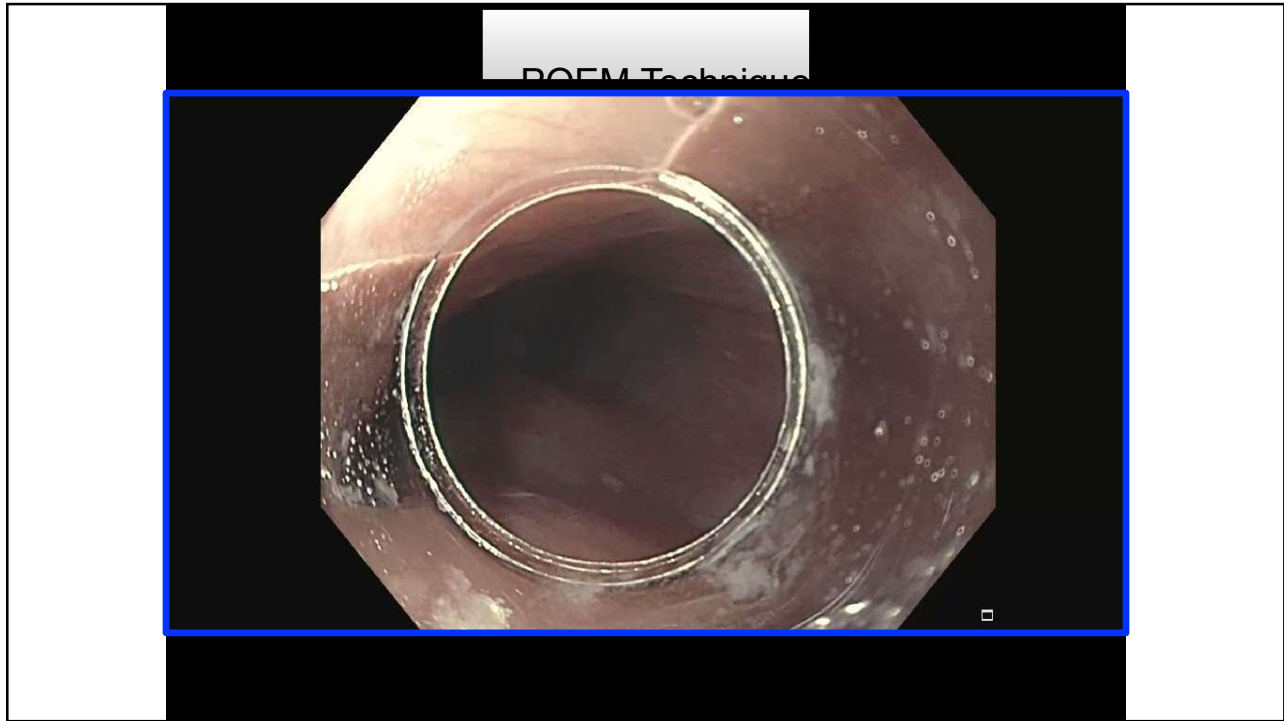
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ENDOFLIP™ IMPEDANCE PLANIMETRY SYSTEM

Endoflip™ impedance planimetry system






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WHAT IT DOES AND HOW IT WORKS

Balloon placement



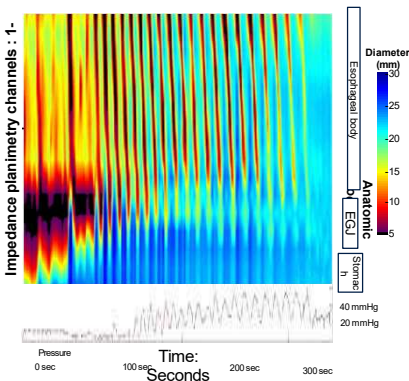
EGJ
Stomach

1.0 image



Time:
Instant

Endoflip™ 2.0 impedance planimetry system image



Impedance planimetry channels : 1-30

Diameter (mm)
30
25
20
15
10
5

Esophageal body
Anatomic
EGJ
Stomach

Pressure
40 mmHg
20 mmHg

Time:
0 sec 100 sec 200 sec 300 sec
Seconds

Provided by: Esophageal Center at Northwestern

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Outcomes in 500 Achalasia Pts

Variable	Before POEM	2 mo after POEM	1–2 y after POEM	3 y after POEM
Eckardt score, median (range)	6 (5–8)	1 (0–2)	1 (1–2)	1 (1–2)
LES pressure, mmHg, median (range)	25.4 (18.2–35.3)	13.4 (10.5–16.4)	11.9 (7.0–15.9)	11.7 (9.6–14.9)

Inoue H, J Amer Coll Surg, 2015

36

Comprehensive Analysis of Adverse Events Associated With Per Oral Endoscopic Myotomy in 1826 Patients: An International Multicenter Study [Haito-Chavez Y, AJG, 2017](#)

Adverse Event	Procedural		Post Procedure	
	Mild/Mod	Severe	Mild/Mod	Severe
Mucosal Perf	50	1		
Capno Peritoneum	22			
Capno Thorax	4		1	
Capno Mediastinum		1	1	
Esophageal Leak			11	2
Submuc Hematoma			10	
Pneumonia			8	1
Arrhythmia		1	6	
Bleeding in Tunnel	4	4		
Prolonged Chest Pain			4	
Pleural Effusion			3	

0.5% Severe AE, 4 Surgery, 0 Mortality

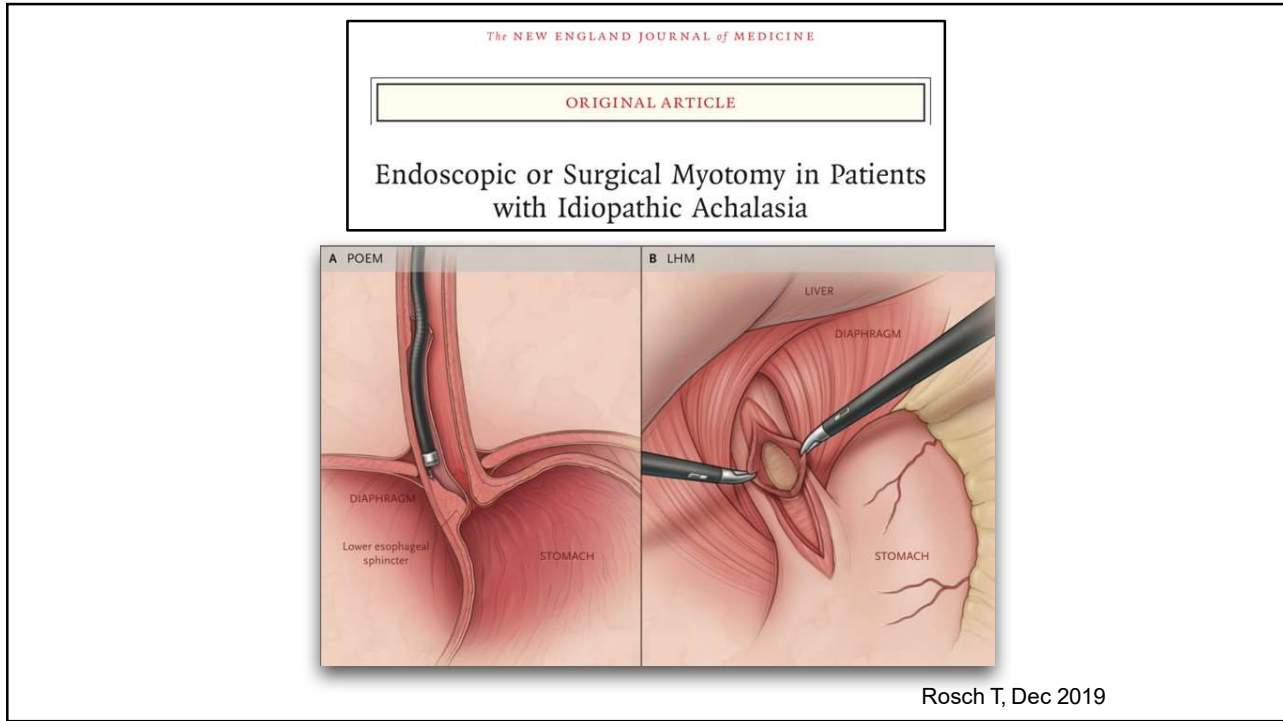
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JAMA | Original Investigation

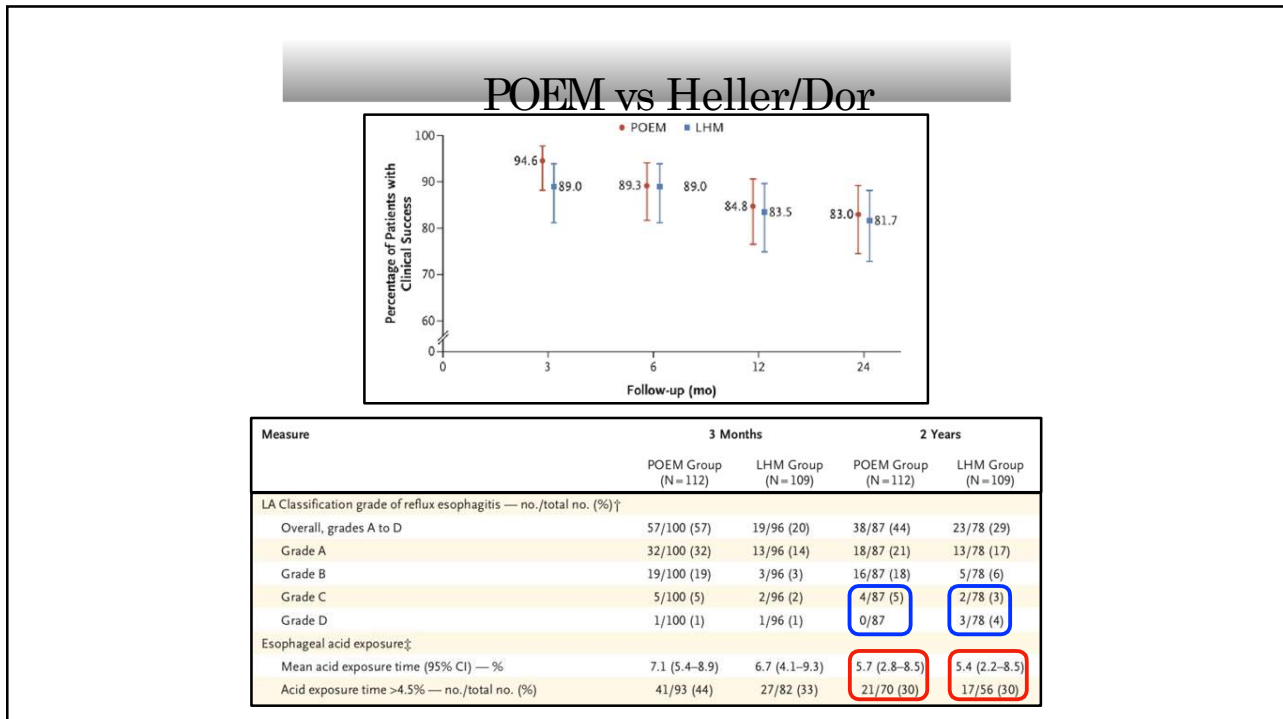
Effect of Peroral Endoscopic Myotomy vs Pneumatic Dilation on Symptom Severity and Treatment Outcomes Among Treatment-Naive Patients With Achalasia
A Randomized Clinical Trial [Fockens P, July 2019](#)

	POEM		Pneumatic Dilation	
	No. (%)	SD	No. (%)	SD
2-y Follow-up (primary end point)	(n = 63)		(n = 63)	
Overall treatment success	58 (92)	3.4	34 (54)	6.3
Reasons for failure ^c				
Eckardt score >3	5 (8)	3.4	28 (44)	6.2
Re-treatment	5 (8)	3.4	26 (41)	10.5
Treatment-related SAEs	0	0	1 (1.6)	1.6
Endoscopic reflux esophagitis ^d	(n = 54)		(n = 29)	
No. (%)	22 (41)		2 (7)	
SD	6.5		4.7	
Grade, No. (%)				
A	17 (31)		2 (7)	
B	2 (4)		0	
C	3 (6)		0	
D	0		0	
PPI use, No (%)	24 (41)		7 (21)	

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Editorial Thieme

Will Reflux Kill POEM?

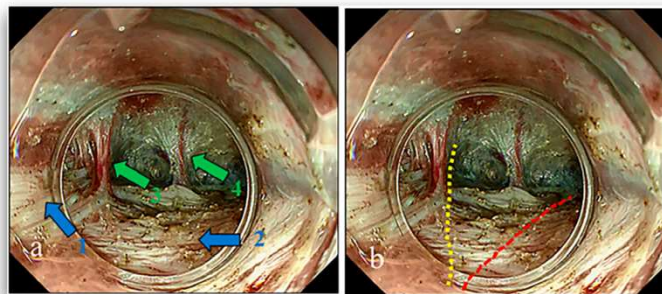
Referring to Kumbhari V et al. p.634–642

Authors
 Thomas Rösch¹, Alessandro Repici², Guy Boeckxstaens³

- ◆ In the large European PRCT of LHM vs Balloon, abnormal acid exposure was present in the LHM group in 23% at 2 yr and 34% at 5 yr
- ◆ Symptoms occur in only 25% of pts with abnormal acid exposure
- ◆ PPI meds are effective for symptom relief
- ◆ Alternative endoscopic anti-reflux treatments are being developed

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Novel per-oral endoscopic myotomy method preserving oblique muscle using two penetrating vessels as anatomic landmarks reduces postoperative gastroesophageal reflux



	TPVs group (n = 83)	Conventional group (n = 31)
Endoscopic RE findings, n (%)	Negative: 23 (27.7)	Negative: 5 (16.1)
	Grade A: 39 (47.0)	Grade A: 8 (25.8)
	Grade B: 24 (28.9)	Grade B: 17 (54.8)
	Grade C: 1 (1.2)	Grade C: 0 (0)
	Grade D: 1 (1.2)	Grade D: 1 (3.2)
Endoscopic RE findings ≥ grade B, n (%)	26 (31.3)	18 (58.1)
GER symptoms, n (%)	9 (10.8)	6 (19.4)

Tanaka S, J Gastroenterol and Hepatol, 2019

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THE "ANTI-REFLUX" POEM: A TECHNIQUE MODIFICATION THAT DRASTICALLY REDUCES OBJECTIVELY MEASURED REFLUX AFTER PER ORAL ENDOSCOPIC MYOTOMY (POEM)

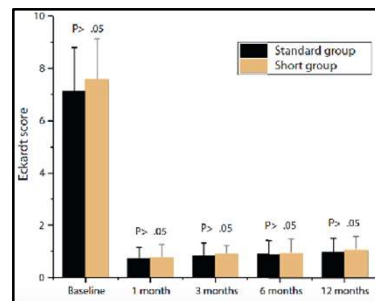
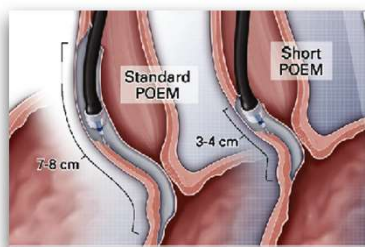
Outcomes	Antireflux (N=116)	Control (N=116)	p-value
pH study			
No. of pts that had pH study	69 (59%)	75 (65%)	0.50
Positive pH study	43%	75%	<0.001
Total acid exposure, median [IQR]	4.1 [2.6-5]	10 [5.18]	<0.0001
DeMeester score	24 [13-54]	38 [16-66]	0.42
No. of pts with follow-up endoscopy	66 (57%)	80 (69%)	0.08
GERD symptoms >2 x a week	5 (6.9%)	25 (22%)	0.01
% of patients with follow-up	100%	100%	1.0

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Safety and efficacy of peroral endoscopic myotomy with standard myotomy versus short myotomy for treatment-naïve patients with type II achalasia: a prospective randomized trial

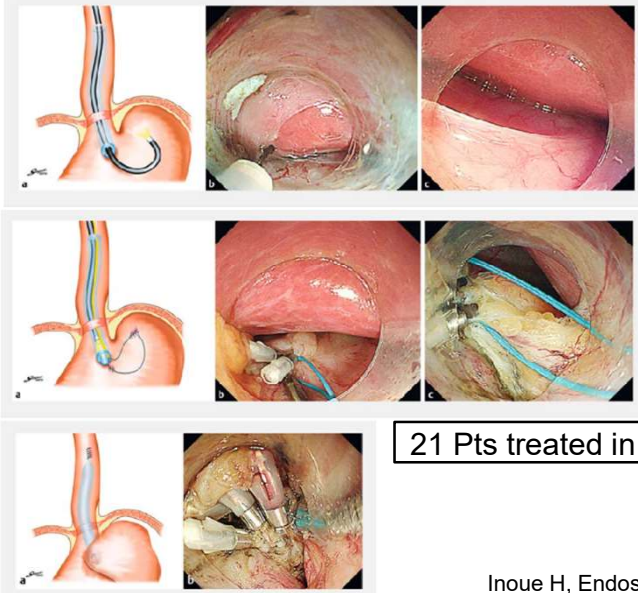
Li Gu, MD,¹ Zhenghui Ouyang, MD,² Liang Lv, MD,³ Chengbo Liang, MD,³ Hongyi Zhu, MD,⁴ Deliang Liu, MD, PhD¹ GIE, 2021



Reflux adverse events	Standard group	Short group
Abnormal esophageal acid exposure	21 (43.6)	11 (23.9)
GERD symptom*	11 (22.9)	7 (15.2)
Endoscopic reflux esophagitis	7 (14.6)	4 (8.7)

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POEM and Endoscopic Fundoplication

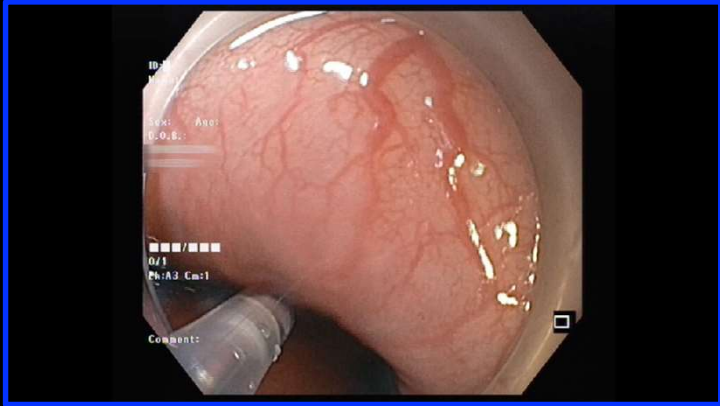


21 Pts treated in 51 min

Inoue H, Endoscopy, 2019

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POEM + Fundoplication



ID: [unreadable]
[unreadable] Age: [unreadable]
[unreadable]
[unreadable]
0/1
[unreadable] Cm:1
Comment:

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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, MD,¹ Xiaocen Zhang, MD,² Brooke Rothberg, MD,³ Maria Kollarus, RN,⁴ Iosif Galibov, Hallic Peller, BS,¹ Sharon Taylor, MD,¹ Collin E. Brathwaite, MD,⁴ Bhawna Halwan, MD,¹ James H. Grendell, MD,¹ Stavros N. Stavropoulos, MD¹

GIE, 2022

- 610 Consecutive Pts from 2009-2019
- 292 (47.9%) with prior treatments
- Signif Adverse Events in 3.4%
- No IR or Surgical Intervention, No deaths

Prior treatment, any type	292 (47.9)
Dilation	108 (17.7)
Botulinum toxin injection	137 (22.5)
Heller myotomy	83 (13.6)
POEM	17 (2.8)

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Long-Term Follow up of POEM

Stavropoulos, DDW 2019 (our previous report)	515	ES ≤3 and no call for additional treatment	94%/424	93%/219	93%/152	92%/87	90%/49	—	—
The current study	610	ES ≤3 and no call for additional treatment	98%/473	96%/362	96%/263	94%/201	92%/127	91%/65	91%/27

Only 2% of pts missed their annual follow-up

Stavropoulos SN, GIE, 2022

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Gastroparesis

- Gastroparesis=Delayed gastric emptying of solid or liquid foods in the absence of mechanical obstruction
- Common causes are: Diabetes, PostSurgical, Neurologic, Scleroderma, Post Infectious and Idiopathic
- Prevalence per 100,000 is 38 in women and 9.6 in men
- Medical Therapy includes Prokinetics, Anti-emetics, and Neuromodulators
- Pyloric Therapies include Botulinum Toxin, Dilation, Transpyloric Stents, Surgical Pyloroplasty, Endoscopic Pyloro-Myotomy
- Adjuvant Treatments are Gastric Electrical Stimulator, Sleeve Gastrectomy and Feeding Jejunostomy

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CLINICAL GUIDELINES

ACG Clinical Guideline: Gastroparesis

Outline

camille: Michael MD, DSC, FRCP (UK), MACG, AGAF¹; Kuo, Benjamin MD, MS, FCG²; Nguyen, Linda MD³; Vaughn, Vida M. MEd, MBA, Petrey, Jessica MSLS⁴; Greer, Katarina MD, MS⁵; Yadapati, Rena M., MSHS, FCG⁶; Abell, Thomas L. MD⁴

ima_gss

Author Information @

the American Journal of Gastroenterology 117(8):p 1197-1220, August 2022. | DOI: 10.143.09/ajg.o00000000001a.74

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Gastroparesis Cardinal Symptom Index (GCSI): Development and validation of a patient reported assessment of severity of gastroparesis symptoms

Denisis A. Revicki¹, Anne M. Rentz², Dominique Dubois³, Peter Kahrfla⁴, Vincent Stanghellini⁵, Nicholas J. Tauey⁶ & Jan Tack⁷

Symptom Subscale	Symptom	None	Very Mild	Mild	Mod	Severe	Very severe
Nausea/vomiting	Nausea	0	1	2	3	4	5
	Retrieving	0	1	2	3	4	5
	Vomiting	0	1	2	3	4	5
Fullness/satiety	Stomach fullness	0	1	2	3	4	5
	Not able to finish meal	0	1	2	3	4	5
	Fullness after eating	0	1	2	3	4	5
	Loss of appetite	0	1	2	3	4	5
Bloating	Bloating	0	1	2	3	4	5

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Early Botox Trials Negative

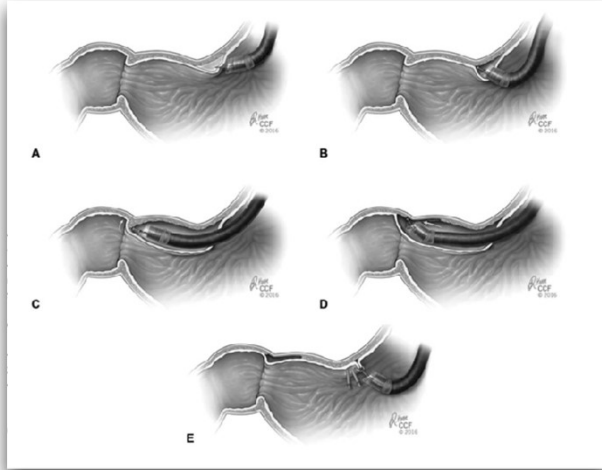


Clinical trial: a randomized-controlled crossover study of intrapyloric injection of botulinum toxin in gastroparesis

J. ARTS, L. HOLVOET, P. CAENEPEEL, R. BISSCHOPS, D. SIFRIM, K. VERBEKE, J. JANSSENS & J. TACK

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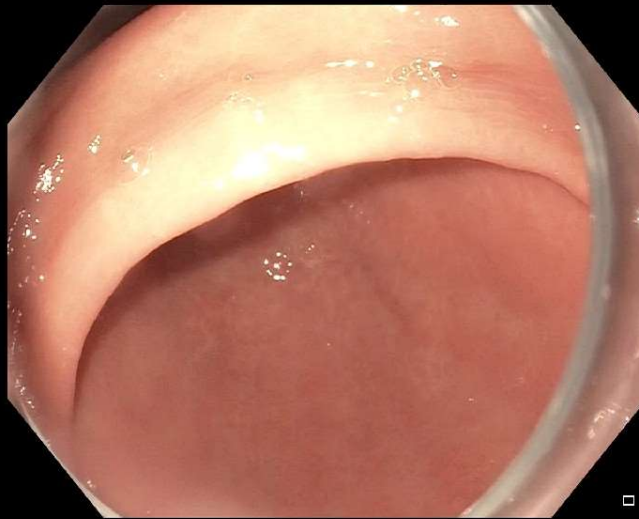
Per-oral Pyloromyotomy (POP) for Medically Refractory Gastroparesis



Rodriguez J, Ann Surg, 2018

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G POEM



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**Per-oral Pyloromyotomy (POP) for Medically
Refractory Gastroparesis**
Short Term Results From the First 100 Patients at a High Volume Center

TABLE 2. Gastroparesis Characteristics

Factor	Statistics
Cause of gastroparesis	
Idiopathic	56 (56.0)
Diabetes	21 (21.0)
Postsurgical	19 (19.0)
Autoimmune	1 (1.0)
Multifactorial	2 (2.0)
Prior interventions for gastroparesis	67 (67.0)
PEG	5 (5.0)
PEG-JET	7 (7.0)
Jejunostomy tube	25 (25.0)
Partial gastrectomy	1 (1.0)
Gastric Electrical Stimulator	20 (20.0)
Intrapyloric Botulinum Toxin Injection	46 (46.0)
Other	2 (2.0)

TABLE 4. Gastroparesis Symptoms and Gastric Emptying

Factor	Initial (N = 100)	3 mo Follow-up (N = 100)
BMI, kg/m ^{2a}		
Overall GSCT ^b	3.8 ± 0.86	2.4 ± 1.2
Fullness/Early satiety subscore ^c		
Nausea/vomiting subscore ^c	4.1 ± 0.94	2.8 ± 1.5
Bloating subscore ^c	3.0 ± 1.4	2.5 ± 1.6
4 hour gastric emptying ^d	39.9 ± 26.5	16.3 ± 21.4

63.4% of Pts achieved normal 4 hr emptying on Scintigraphy

Rodriguez J, Ann Surg, 2018

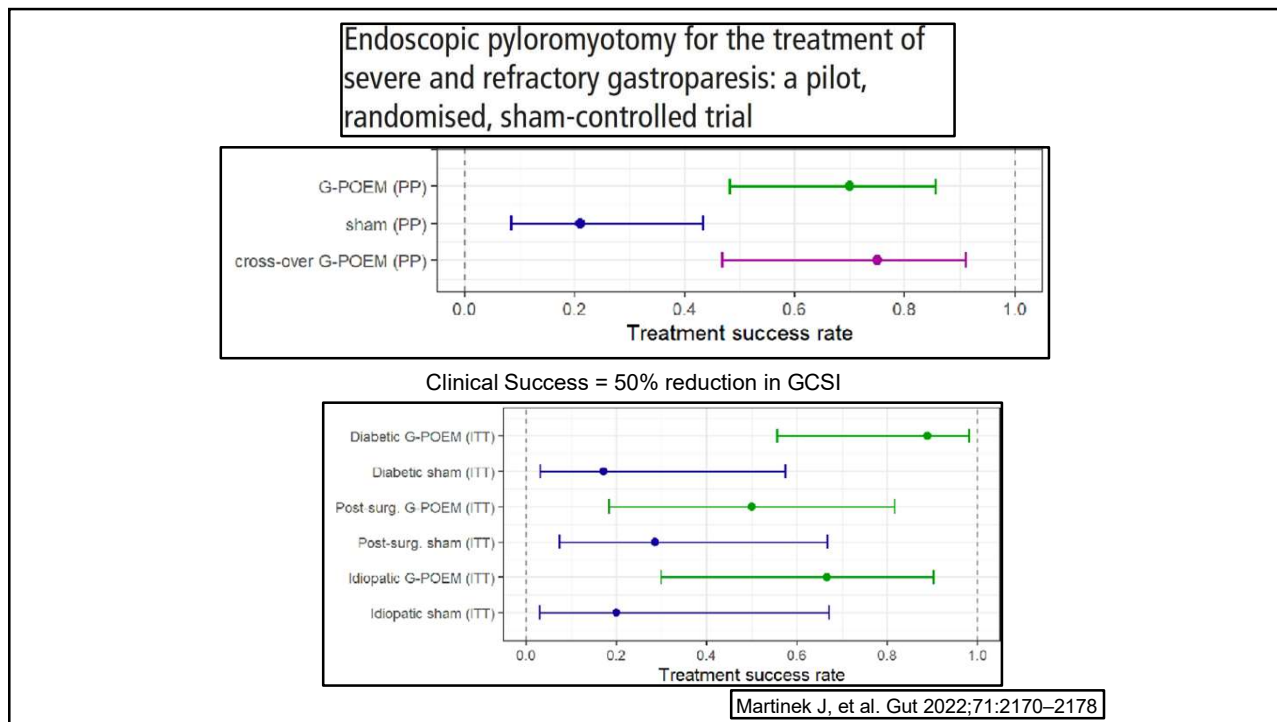
55

**Endoscopic pyloromyotomy for the treatment of
severe and refractory gastroparesis: a pilot,
randomised, sham-controlled trial**

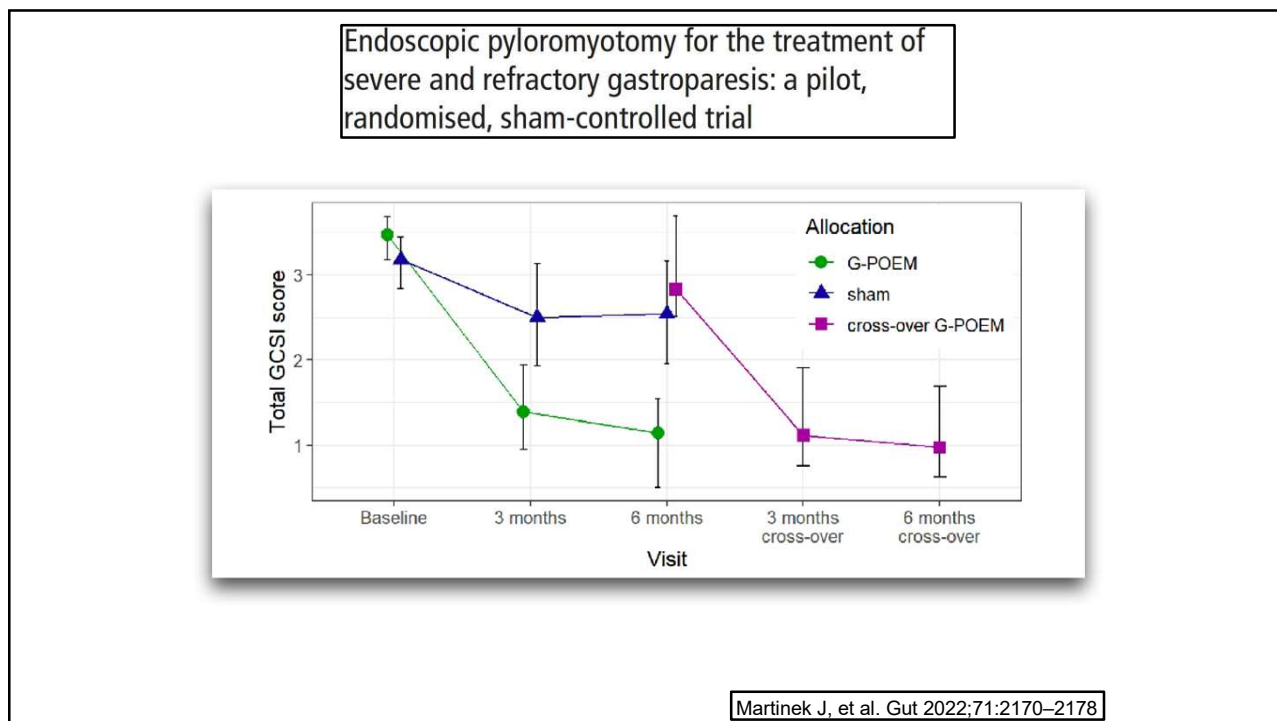
- RCT stopped after interim analysis of 41 enrolled pts
- Gastroparesis Clinically severe with GCSI score >2.3
- Refractory = 6 mos symptoms w failure of prokinetic medication
- GES abnormal retention >60% at 2 hr, >10% at 4 hr

Martinek J, et al. Gut 2022;71:2170–2178

56

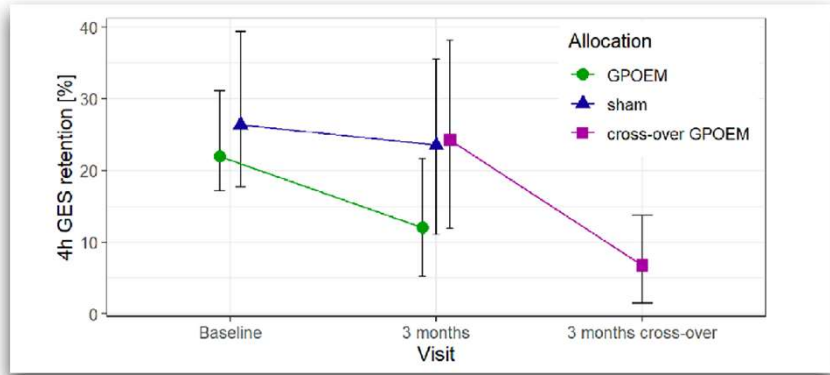


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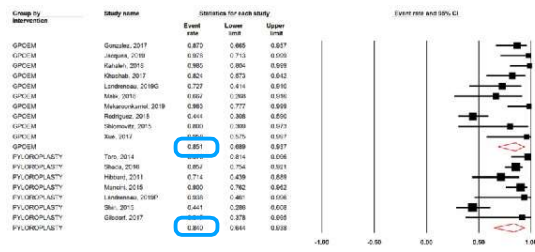
Endoscopic pyloromyotomy for the treatment of severe and refractory gastroparesis: a pilot, randomised, sham-controlled trial



Martinek J, et al. Gut 2022;71:2170–2178

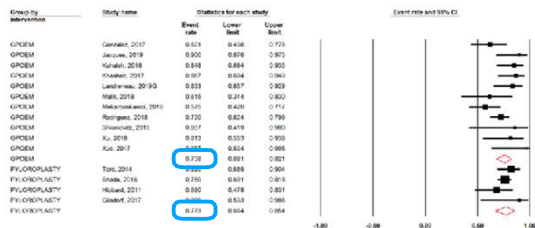
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Gastroparesis: G POEM vs Pyloroplasty



No differences in Outcomes
332 pt G POEM
375 pt Pyloroplasty

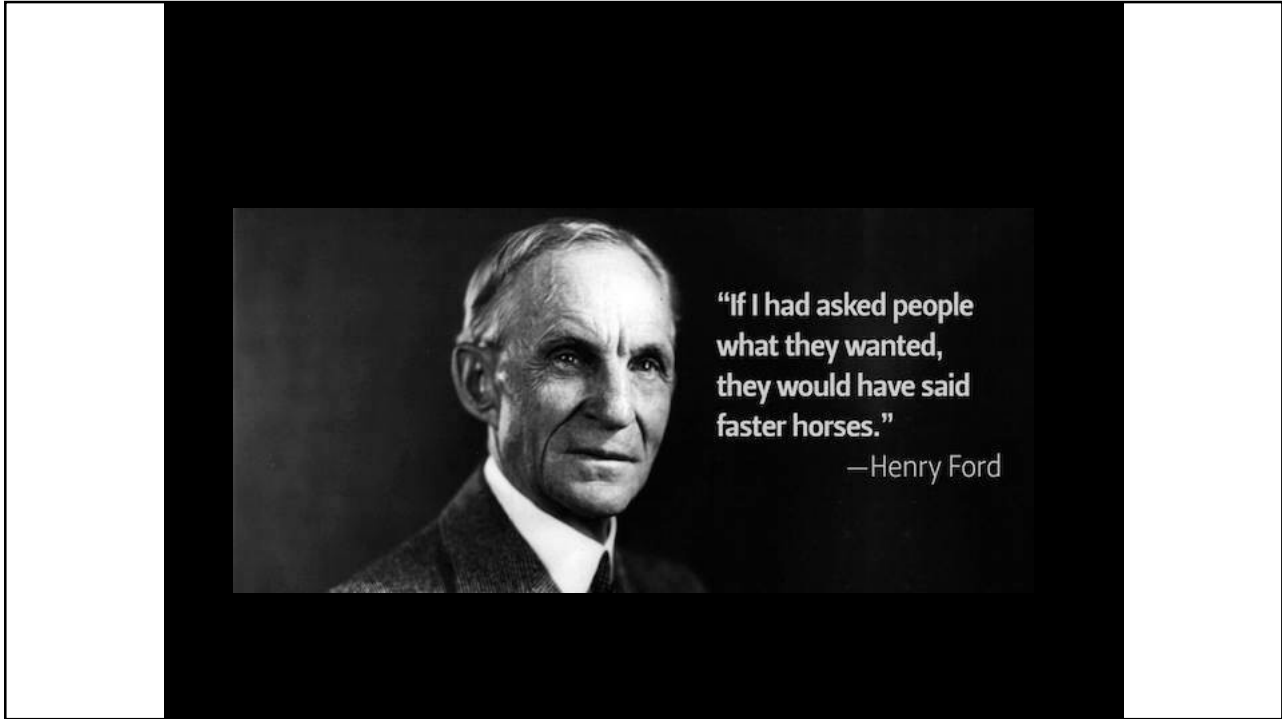
Clinical Success (GCSI)



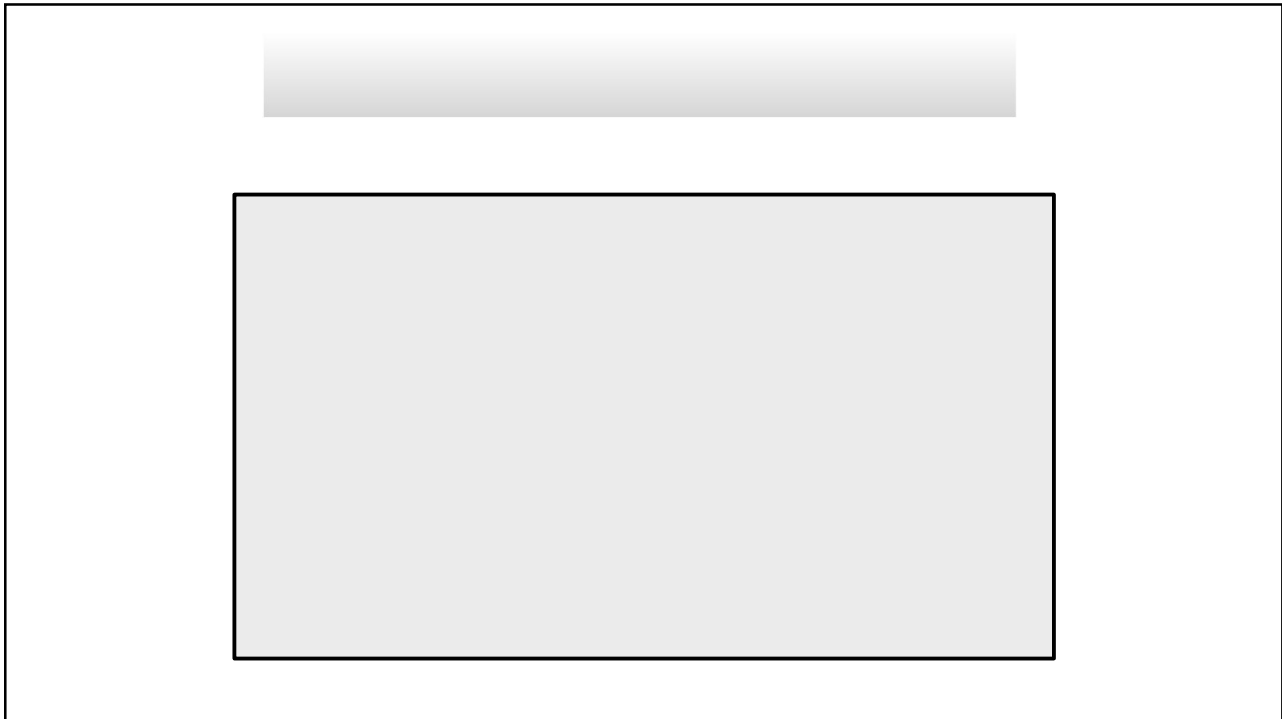
4 Hr Gastric Emptying

Mohan BP, Surg Endosc, 2019

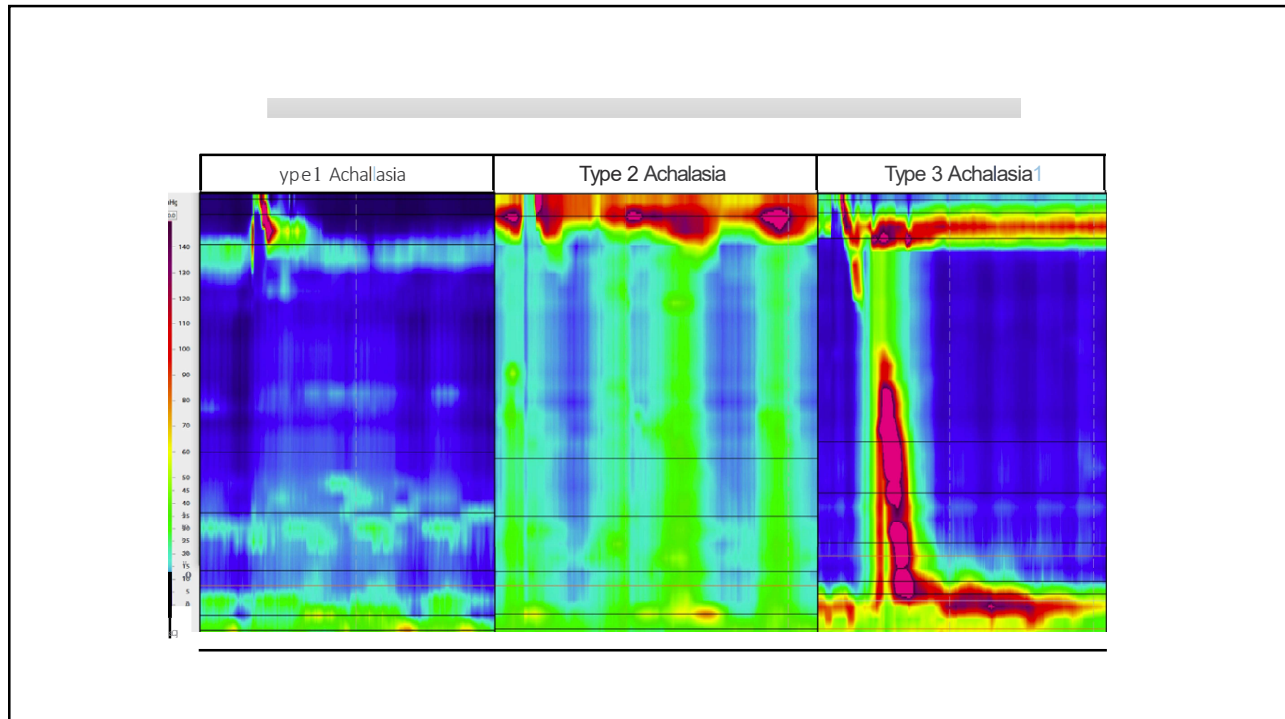
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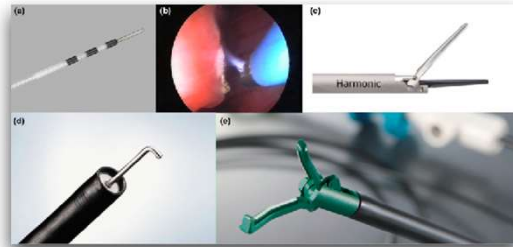
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Endoscopic Crico-Pharyngeal Myotomy

- Conventional approach is transection of the septum cutting mucosal and muscle planes
- The myotomy is limited by the depth of the diverticular pouch
- Recurrence occurs in 15-20% of pts thought to be due to incomplete myotomy or regrowth of the muscle
- New iterations to reduce recurrence include Myectomy
 - and Z POEM

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Techniques of Septotomy and Myotomy



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Summary of Flexible Endoscopic Septum Division

Study	N	Treatment success rate (%)	Average follow-up duration (months)	Recurrence rate (%)
Ishioka <i>et al.</i> 1995 ¹¹	42	100	38	7.1
Mulder <i>et al.</i> 1995 ¹⁰	20	100	6.7	0
Hashiba <i>et al.</i> 1999 ³²	47	96	1 day to 1 year	4.2
Evrard <i>et al.</i> 2003 ³³	30	96.6	12.5	3.3
Rabenstein <i>et al.</i> 2007 ³⁴	41	95.1	16	12.2
Costamagna <i>et al.</i> 2007 ³⁵	11 [†]	91	6.5	9
Vogelsang <i>et al.</i> 2007 ³⁰	31	84	24	32.3%
Christiaens <i>et al.</i> 2007 ³⁶	21	100	22.6	0
Al-Kadi <i>et al.</i> 2010 ³⁷	18	78	27.5	11.1
Case & Baron 2010 ³⁸	22	100	12.7	31.8
Repici <i>et al.</i> 2010 ³⁹	32	87.5	23.9	6.2
Repici <i>et al.</i> 2011 ⁴⁰	28	92.9	20	3.6
Huberty <i>et al.</i> 2013 ⁴¹	150	94.6	43	23.1
Manno <i>et al.</i> 2014 ⁴²	19	100	27	10.5
Laquière <i>et al.</i> 2015 ⁴³	42	88.1	16	14.2
Battaglia <i>et al.</i> 2015 ⁴⁴	31	90.3	7	6.5
Halland <i>et al.</i> 2016 ⁴⁵	52	100	26	11.5
Pescarus <i>et al.</i> 2016 ⁴⁶	26	100	21.8	11.5
Costamagna <i>et al.</i> 2016 ⁴⁷	89	85.5	36	10.8
Antonello <i>et al.</i> 2016 ⁴⁸	59	83.1	18	18.6
Gölder <i>et al.</i> 2017 ⁴⁹	18	88.9	3	5.6
Rouquette <i>et al.</i> 2017 ⁵⁰	24	91.7	19.5	12.5

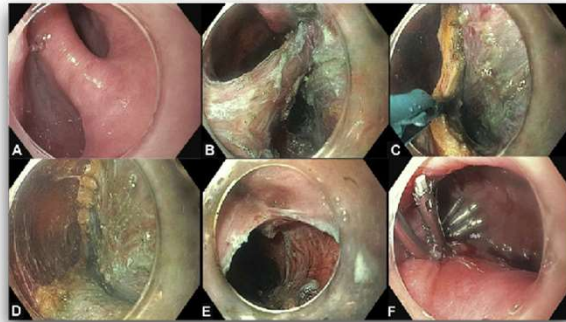
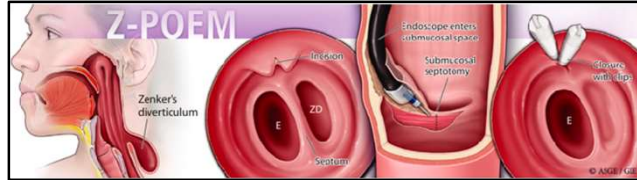
Pooled Success Rate of 91%, Adverse Events 11.3%, Recurrence 16.3%

Ishaq S, Dig Endosc, 2018

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An international study on the use of peroral endoscopic myotomy in the management of Zenker's diverticulum
Juliana Yang, MD,¹ Stephanie Novak, MD,² Michael Ujiki, MD,² Óscar Hernández, MD,³ Pankaj Desai, MD,⁴ Petros Benias, MD,⁵ David Lee, MD,⁶ Kenneth Chang, MD,⁶ Bertrand Briau, MD,⁷ Maximilien Barret, MD,⁸ Nikhil Kumta, MD,⁸ Xianhui Zeng, MD,⁹ Bing Hu, MD,⁹ Konstantinos Delis, MD,¹⁰ Mouen A. Khashab, MD,¹⁰

GIE, 2020



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Z-POEM



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An international study on the use of peroral endoscopic myotomy in the management of Zenker's diverticulum

Juliana Yang, MD,¹ Stephanie Novak, MD,² Michael Ujiki, MD,² Óscar Hernández, MD,³ Pankaj Desai, Petros Benias, MD,³ David Lee, MD,³ Kenneth Chang, MD,⁶ Bertrand Briau, MD,⁷ Maximilien Barret, Nikhil Kumta, MD,⁸ Xianhui Zeng, MD,⁹ Bing Hu, MD,⁹ Konstantinos Delis, MD,¹⁰ Mouen A. Khashab,

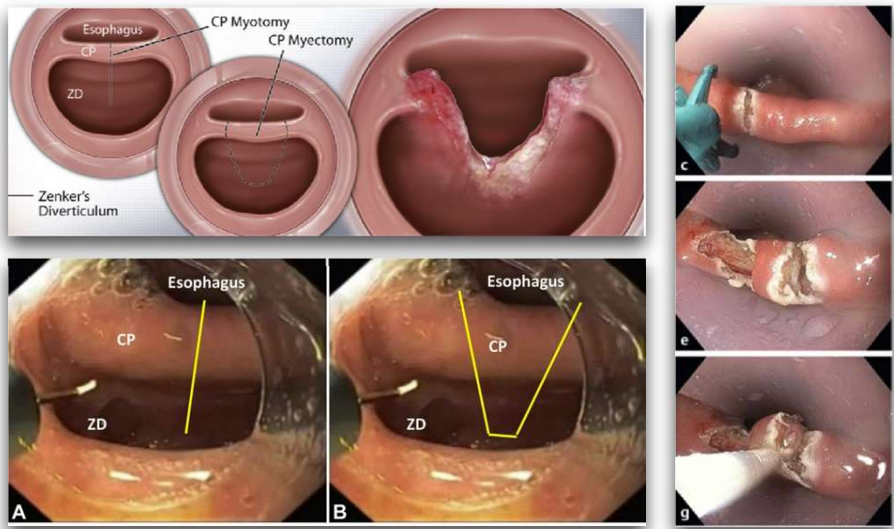
Outcomes	Value
Clinical success, % (n)	92 (69)
Technical success, % (n)	97.3 (73)
Mean peroral endoscopic myotomy procedure time, min, mean ± SD	52.4 ± 2.9
Repeat interventions	
Surgical interventions	0
Endoscopic interventions	1
Postprocedure follow-up, days, median (IQR)	291.5 (103.5-436)
Days of hospitalization, mean ± SD	1.8 ± .2



GIE, 2020

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Comparison of flexible endoscopic cricopharyngeal myectomy and myotomy approaches for Zenker diverticulum repair



Pang M, GIE, 2019

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Comparison of flexible endoscopic cricopharyngeal myectomy and myotomy approaches for Zenker diverticulum repair

Characteristic	CP myotomy (n = 44)	CP myectomy (n = 20)
ZD recurrence, n (%)		
Treatment naïve	8/36 (22.2)	0/10 (.0)
Retreatment	2/8 (25.0)	0/10 (.0)
Total	10 (22.7)	0 (.0)

Mean F/U 50.2 wk
Recurrence 19 mos

Mean F/U 41.8 wk

Pang M, GIE, 2019

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Challenging Achalasia Patients

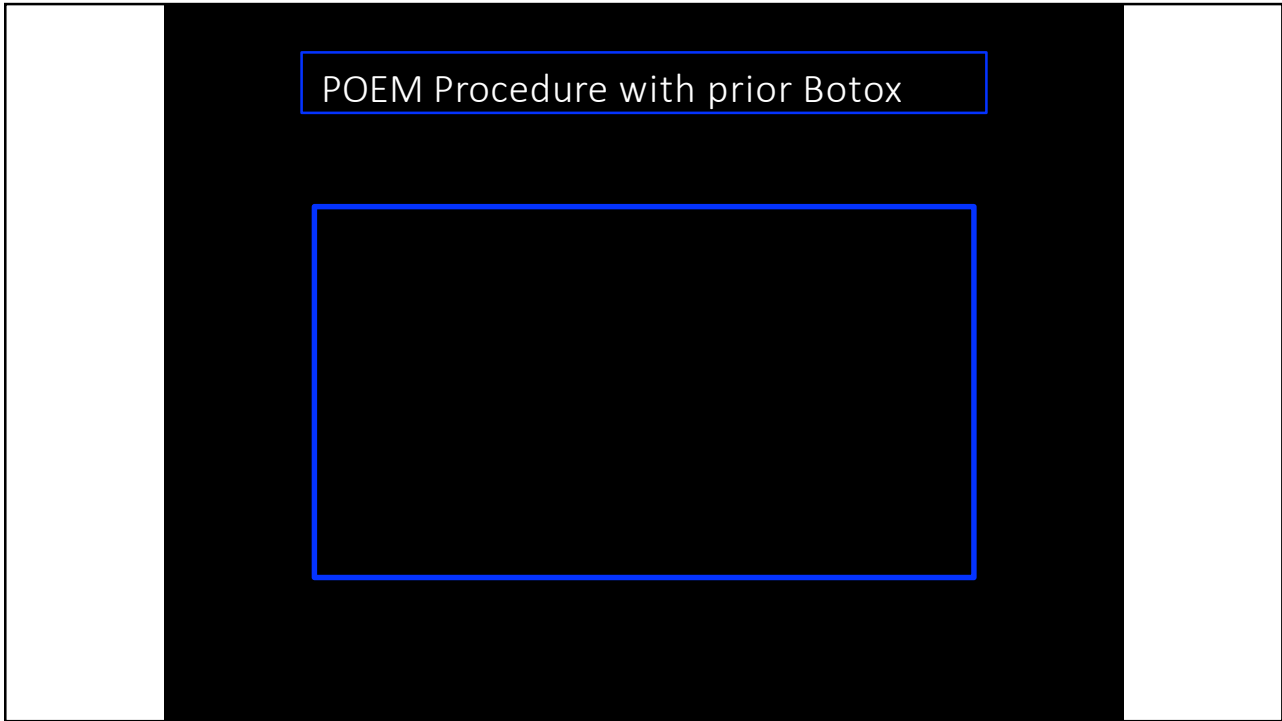
- Type III - longer myotomy
- Multiple Prior Treatments - increased fibrosis, difficult delineation of tissue planes
- Prior Failed Myotomy - change orientation
- Sigmoid Esophagus - difficulty with orientation and impaired maneuverability

Velocity of Dissection (min/cm)

Simple	Type III	Pri or Myotomy	≥ 4 Prior Procedures	Sigmoid Esophagus
4.4	4.8	5.9	6.9	8.2

Bechara R, Digestive Endosc, 2019

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GERD after POEM vs HM

A systematic review and meta-analysis of 1542 POEM pts in 17 studies and 2581 LHM pts in 28 studies

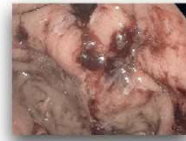
GERD	POEM	LHM
Symptoms	19%	9%
Esophagitis	29%	7.6%
pH	39%	16.8%

Repici A, GIE, 2018

74

TIF Post POEM

TIF post-POEM patient data.							
	Age, years	Gender	Indication for TIF	On PPI pre-TIF	Esophagitis on EGD pre-TIF	Off PPI post-TIF	Healed esophagitis post-TIF
Patient 1	39	F	+pH study	Y	Y, Class B	Y	Y
Patient 2	70	F	Regurgitation	Y	N	Y	n/a
Patient 3	51	M	+pH study	Y	Y, Class D	Y	Y
Patient 4	44	M	+pH study	Y	N	Y	n/a
Patient 5	69	M	+pH study	Y	Y, Class B	Y	Y



Tyberg A, Endosc Int Open, 2018

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Follow-up

- N = 15
- Median follow up – 3 months (IQR – 1 to 6)
- GERD symptoms – Nil
- Mean Eckhardt score – 1 (range 0 – 2)
- UGI findings – wrap in place in 100%
- Mean DeMeester score (7/15) – 3.1 (range 2.9 – 3.2)

¹ *Bapaye et al, Endoscopy E-videos (Accepted for publication)*

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Comparison of Short Versus Long Esophageal Myotomy in Cases With Idiopathic Achalasia: A Randomized Controlled Trial

AIG, Hyderabad

Procedure characteristics	Long myotomy (n = 37)	Short myotomy (n = 34)	P-value
Length of esophageal myotomy (cm)	7.97 ± 2.40	2.76 ± 0.41	< 0.001
Length of gastric myotomy (cm)	2.84 ± 0.63	2.70 ± 0.73	0.389
Total operating time	72.43 ± 27.28	44.03 ± 13.78	< 0.001

J Neurogastroenterol Motil, Vol. 27 No. 1 January, 2021

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Comparison of Short Versus Long Esophageal Myotomy in Cases With Idiopathic Achalasia: A Randomized Controlled Trial

AIG, Hyderabad

Procedure characteristics	Long myotomy (n = 37)	Short myotomy (n = 34)	P-value
Length of esophageal myotomy (cm)	7.97 ± 2.40	2.76 ± 0.41	< 0.001
Length of gastric myotomy (cm)	2.84 ± 0.63	2.70 ± 0.73	0.389
Total operating time	72.43 ± 27.28	44.03 ± 13.78	< 0.001

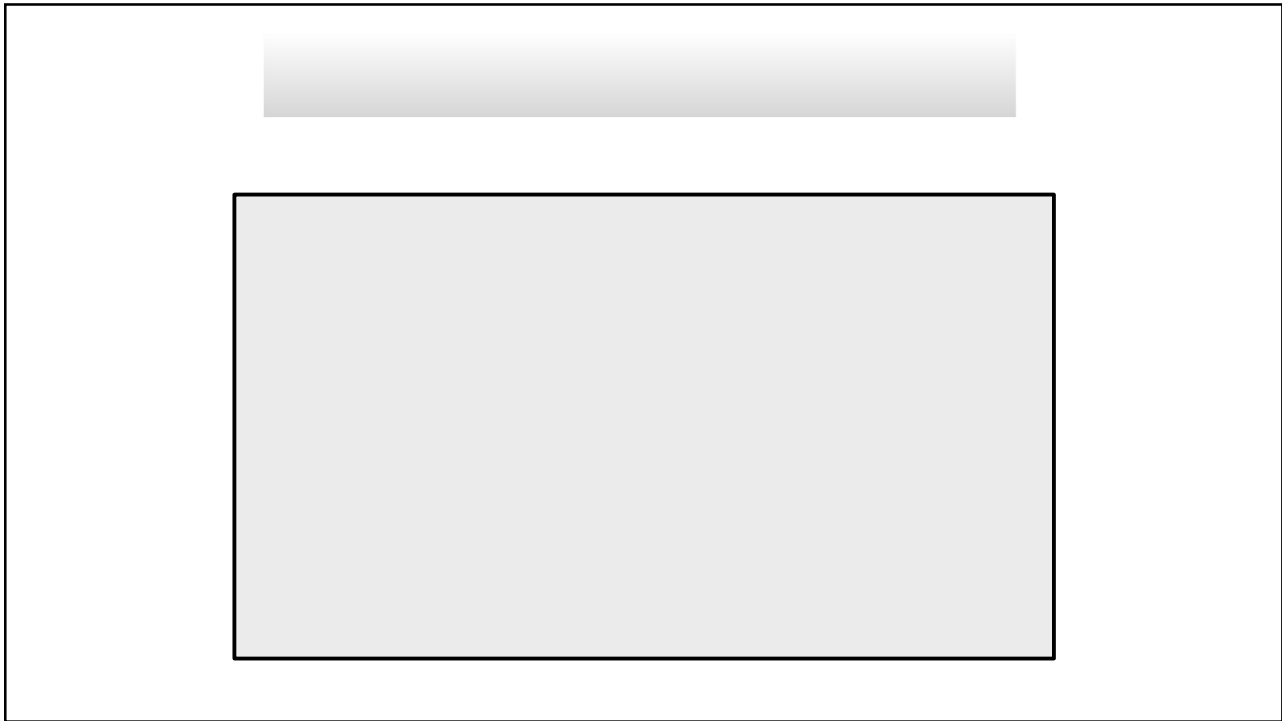
- Anterior Approach
- No signif difference in reflux
- Acid Exposure >6%
12/37 (40%) in Long and 7/34 (26%) in Short

J Neurogastroenterol Motil, Vol. 27 No. 1 January, 2021

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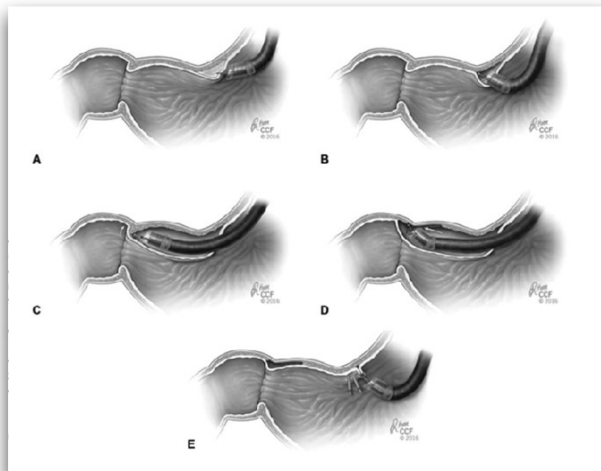


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Per-oral Pyloromyotomy (POP) for Medically
Refractory Gastroparesis
Short Term Results From the First 100 Patients at a High Volume Center



Rodriguez J, Ann Surg, 2018

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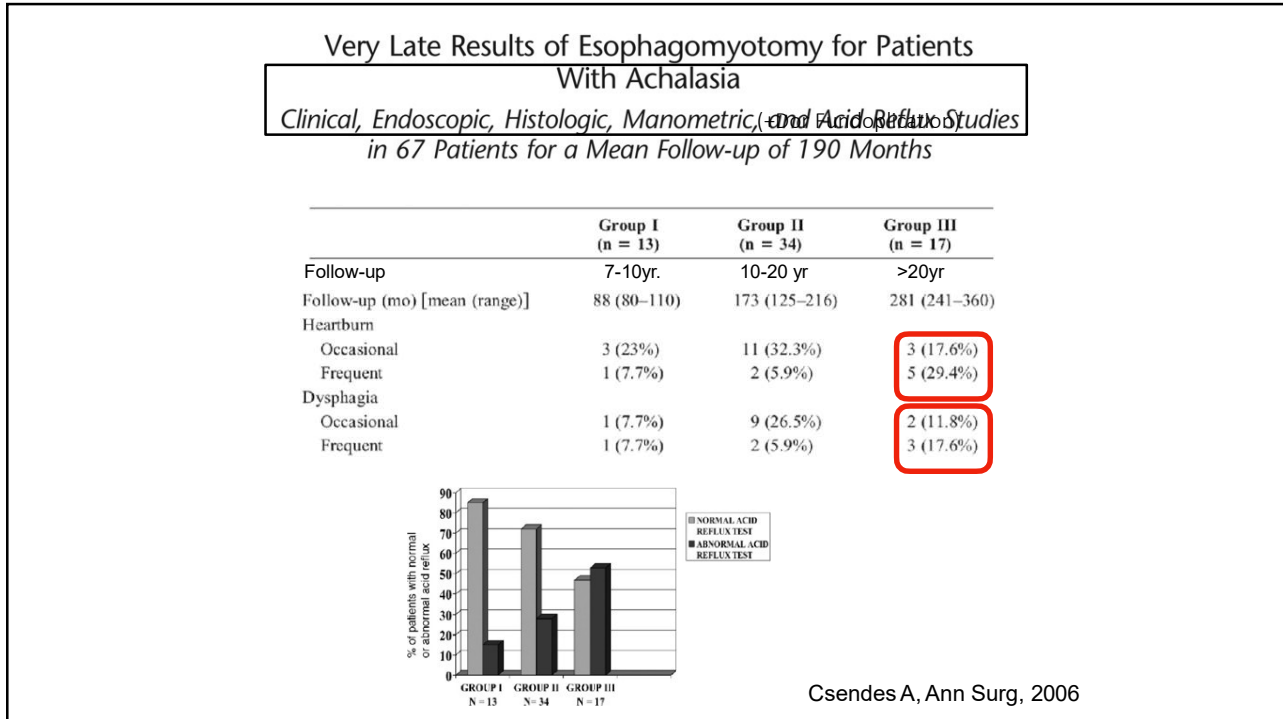
Manometric Definition of Esophageal Disorders

DCI: distal contractile integral = mmHg.sec.cm
Contraction >20mm from transition zone
to upper margin LES

IRP: integrated relaxation pressure = average
pressure in lowest 4/10 sec of deglutitive relaxation

DL: distal latency = interval from UES relaxation to
point of deceleration 3 cm above LES
Normal > 4.5s

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Virtual Grand Rounds

universe.gi.org

Questions?

Gregory B. Haber, MD, FACP

Vivek Kaul, MD, FACP

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CONNECT AND COLLABORATE IN GI



ACG & CCF IBD Circle



ACG Hepatology Circle



ACG Functional GI
Health and Nutrition Circle



GI

ACG GI Circle

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