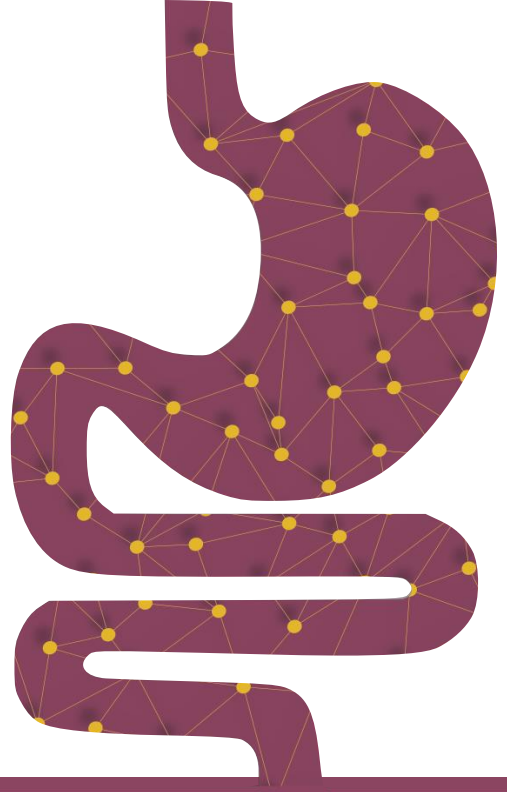


¿QUÉ HAY DE NUEVO EN LA CLÍNICA DE LOS TRASTORNOS MOTORES ESOFÁGICOS? CLASIFICACIÓN DE CHICAGO V4.0

II JORNADA DE FORMACIÓN CONTINUADA EN GASTROENTEROLOGÍA Y HEPATOLOGÍA PARA RESIDENTES

24 y 25 de septiembre de 2021
Palacio de Congresos y Exposiciones de Ronda

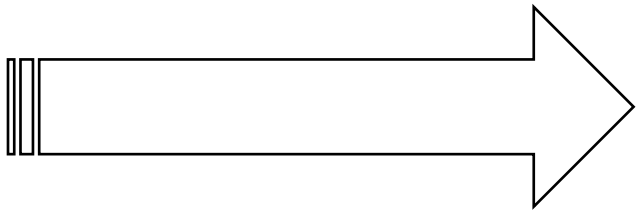
www.sapd.es

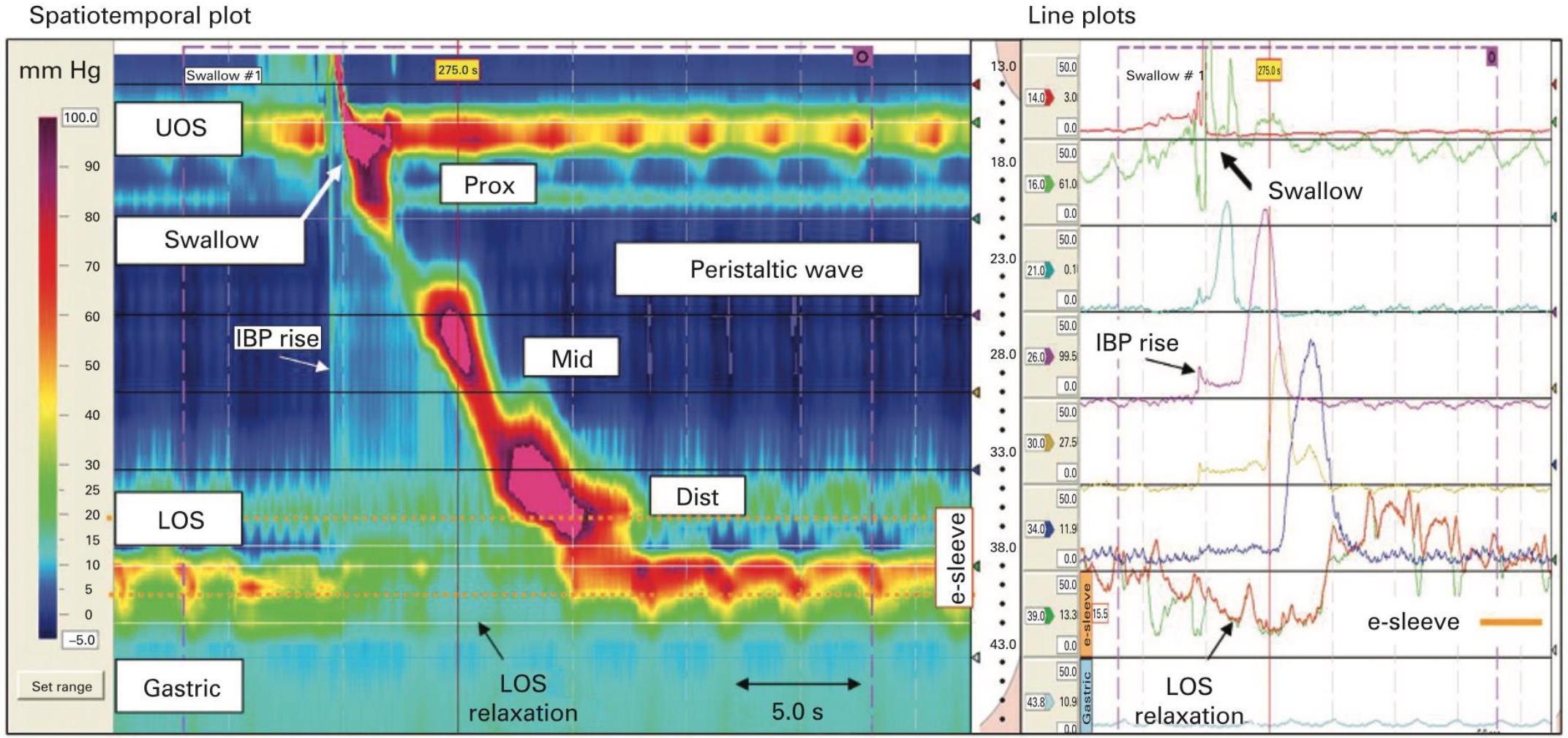
Juan Antonio Vázquez Rodríguez
Hospital de Poniente, El Ejido (Almería)

Tutora: Isabel Lavín Castejón
Hospital Virgen de la Victoria, Málaga

INTRODUCCIÓN

La manometría esofágica permite medir las presiones en la luz y los esfínteres esofágicos, valorando de esta manera la **ACTIVIDAD NEUROMUSCULAR** que condiciona el **funcionamiento** de este segmento de tubo digestivo





UOS: esfínter esofágico superior
LOS: esfínter esofágico inferior

Fox MR, Bredenoord AJ. Oesophageal high-resolution manometry: moving from research into clinical practice. Gut. 2008.

PRESIÓN INTEGRADA DE RELAJACIÓN (IRP)

Relajación deglutoria EEI

*Valor normal < 15 mmHg (supino)**

*el valor depende del sistema y de la posición

INTEGRAL DE CONTRACTILIDAD DISTAL (DCI)

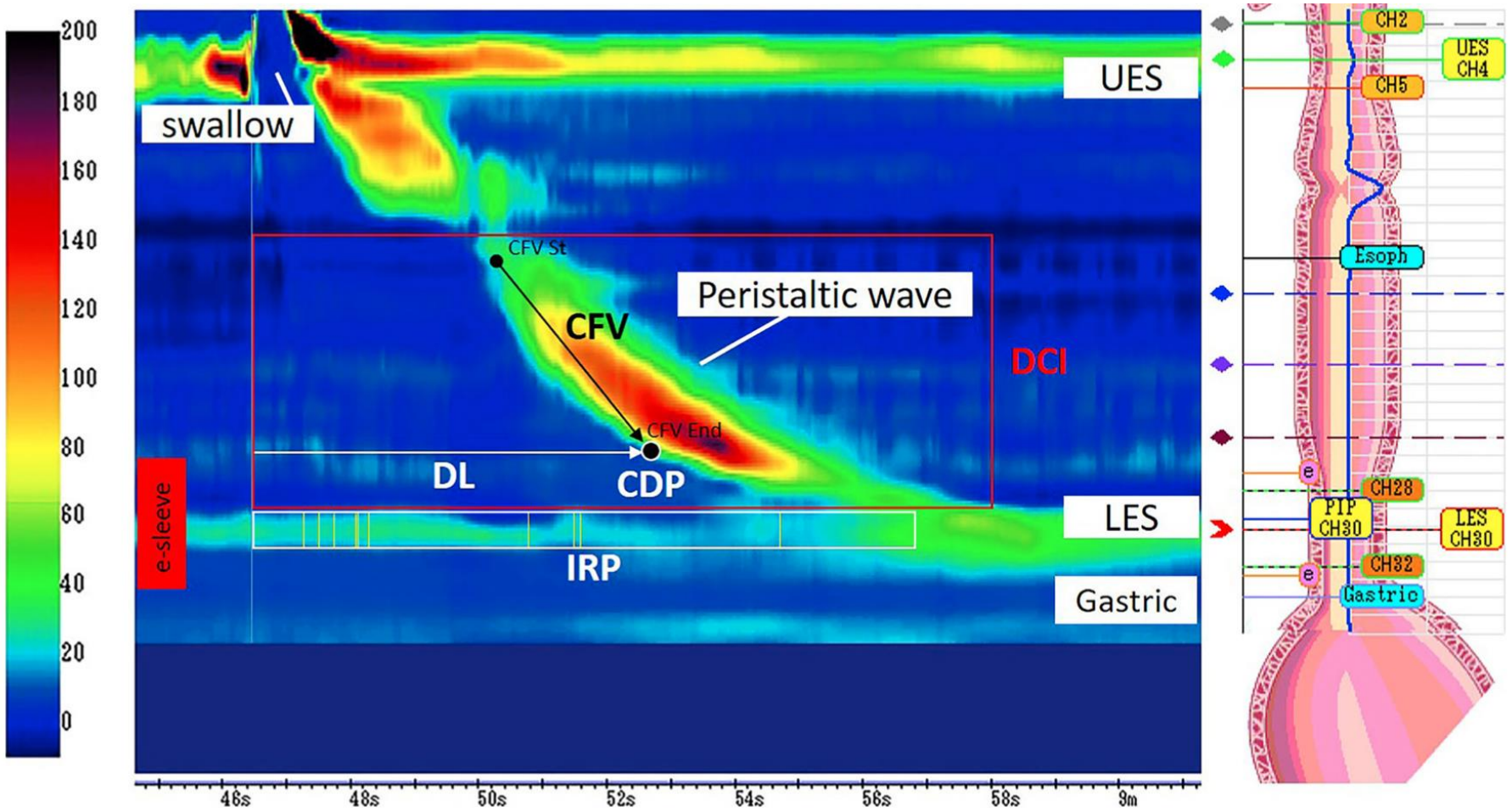
Fuerza de la contracción esofágica

Valor normal > 450 y < 8000 mmHg·s·cm

LATENCIA DISTAL (DL)

Latencia de la inhibición deglutoria

Valor normal < 4.5 s



UES: esfínter esofágico superior
LES: esfínter esofágico inferior
CFV: velocidad del frente contráctil
CDP: punto de deceleración contráctil

Yadlapati R, et al. Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0©. Neurogastroenterol Motil. 2021

neurogastroenterology & motility

Neurogastroenterol Motil (2009) **21,** 796–806 doi: 10.1111/j.1365-2982.2009.01311.x

REVIEW ARTIC

High-resolut pressure top abnormalitie

J. E. PANDOLFINO, M. R.

Department of Medicine, T

Abstract *High-resolutio pressure monitoring fro together with pressure t an unquestionable evo metry. However, with th challenges and one of t scheme to apply high-re*

Neurogastroenterology & Motility

Neurogastroenterol Motil (2012) **24** (Suppl. 1), 57–65

REVIEW ARTICLE

Chicago classific disorders defined topography[1]

A. J. BREDENOORD,* M. FOX,†,‡ P
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Neurogastroenterology & Motility

Neurogastroenterol Motil (2014) doi: 10.1111/nmo.12477

The Chicago C disorders, v3.0

P. J. KAHRILAS, A. J. BREDENO
INTERNATIONAL HIGH RESOL

Department of Medicine, Feinbe

Key Messages

- The Chicago Classificatio (HRM) imaged with press
- This update, CC v3.0, w consensus process.
- CC v3.0 utilizes a hierarc outflow, (ii) other major
- Disorders of EGJ outflow limit of normal. These di
- Major motility disorders obstruction are absent co
- Minor motility disorder

Received: 11 November 2020 | Revised: 21 November 2020 | Accepted: 24 November 2020

DOI: 10.1111/nmo.14058

ORIGINAL ARTICLE

Neurogastroenterology & Motility NGM WILEY

Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0©

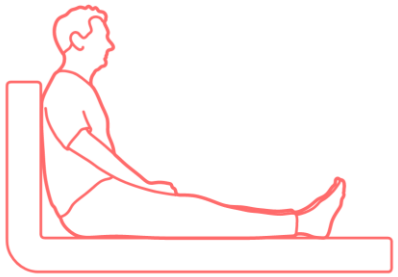
Rena Yadlapati[1] | Peter J. Kahrilas[2] | Mark R. Fox[3,4] | Albert J. Bredenoord[5] | C. Prakash Gyawali[6] | Sabine Roman[7,8] | Arash Babaei[9] | Ravinder K. Mittal[1,10] | Nathalie Rommel[11] | Edoardo Savarino[12] | Daniel Sifrim[13] | André Smout[5] | Michael F. Vaezi[14] | Frank Zerbib[15] | Junichi Akiyama[16] | Shobna Bhatia[17] | Serhat Bor[18] | Dustin A. Carlson[2] | Joan W. Chen[19] | Daniel Cisternas[20] | Charles Cock[21] | Enrique Coss-Adame[22] | Nicola de Bortoli[23] | Claudia Defilippi[24] | Ronnie Fass[25] | Uday C. Ghoshal[26] | Sutep Gonlachanvit[27] | Albis Hani[28] | Geoffrey S. Hebbard[29] | Kee Wook Jung[30] | Philip Katz[31] | David A. Katzka[32] | Abraham Khan[33] | Geoffrey Paul Kohn[34] | Adriana Lazarescu[35] | Johannes Lengliner[36] | Sumeet K. Mittal[37] | Taher Omari[38] | Moo In Park[39] | Roberto Penagini[40] | Daniel Pohl[41] | Joel E. Richter[42] | Jordi Serra[43] | Rami Sweis[44] | Jan Tack[45] | Roger P. Tatum[46] | Radu Tutuian[47,48] | Marcelo F. Vela[49] | Reuben K. Wong[50] | Justin C. Wu[51] | Yinglian Xiao[52] | John E. Pandolfino[2]

NOVEDADES CLASIFICACIÓN DE CHICAGO v4.0

Diagnosis	CCv3.0 Definition	CCv4.0 Definition
Disorders of EGJ Outflow		
Type I Achalasia	Median IRP elevated & 100% failed peristalsis	Median IRP elevated (supine and/or upright) & 100% failed peristalsis
Type II Achalasia	Median IRP elevated & 100% failed peristalsis with ≥20% panesophageal pressurization	Median IRP elevated (supine and/or upright) & 100% failed peristalsis with ≥20% panesophageal pressurization
Type III Achalasia	Median IRP elevated & 100% failed peristalsis with ≥20% swallows with spasm	Median IRP elevated (supine and/or upright), 100% absent peristalsis & ≥20% swallows with spasm
EGJ outflow obstruction	Median IRP elevated and not meeting criteria for achalasia type I-III	Supine and upright median IRP elevated, supine intrabolus pressure elevated, and presence of normal peristalsis, with symptoms of dysphagia and/or non-cardiac chest pain, and at least one confirmatory non-HRM supportive test
Disorders of peristalsis		
Absent contractility	Normal median IRP and 100% failed peristalsis	Normal median IRP and 100% failed peristalsis
Distal esophageal spasm	Normal median IRP and ≥20% swallows with spasm	Normal median IRP and ≥20% swallows with spasm along with symptoms of dysphagia and/or non-cardiac chest pain
Hypercontractile esophagus	Normal median IRP and ≥20% hypercontractile swallows (Referred to as Jackhammer esophagus)	Normal median IRP and ≥20% hypercontractile swallows with symptoms of dysphagia and/or non-cardiac chest pain
Ineffective esophageal motility	≥50% ineffective swallows	>70% ineffective and/or fragmented swallows, or ≥50% failed swallows

Yadlapati R, et al. What is new in Chicago Classification version 4.0? Neurogastroenterol Motil. 2021.

NOVEDADES CLASIFICACIÓN DE CHICAGO v4.0



HIGH RESOLUTION ESOPHAGEAL MANOMETRY STANDARD PROTOCOL
CHICAGO CLASSIFICATION VERSION 4.0©

STUDY PROCEDURE

Study begins in supine position [use supine normative values]
- ≥60 second adaptation period
- Document position with at least 3 deep inspirations
- ≥30 second baseline period
- 10 supine wet (5mL) swallows
- 1 multiple rapid swallow (MRS) sequence (MRS may be repeated up to 3 sequences if failed attempt or abnormal response)

Change position to upright [use upright normative values]
- ≥60 second adaptation period
- Document position with at least 3 deep inspirations
- ≥30 second baseline period
- ≥5 upright wet (5mL) swallows
- 1 rapid drink challenge

If no major motility disorder is found consider the following manometric evaluations
- For high probability of a missed EGJ outflow obstruction: Solid test swallows, solid test meal, and/or pharmacologic provocation
- For suspected rumination/belching disorder: Post-prandial high-resolution impedance observation

If equivocal results are found and/or there is suspicion for an obstruction that does not fulfill criteria for achalasia, consider the following supportive tests
- Timed barium esophagram, preferably with tablet
- Endoluminal functional lumen imaging planimetry (FLIP)

CONSIDERATIONS

Prior to procedure patients should fast for at least 4 hours and informed consent should be obtained. The CCv4.0 Working Group recommends using a solid state high-resolution manometry catheter with less than 2cm sensor spacing with combined impedance sensors. However, the protocol and classification can be performed with water perfused catheters if appropriate normative values are used. Although the protocol designed by the CCv4.0 working group is considered to be the optimal protocol, clinicians can modify this protocol based on limited resources and time as long as normative values are applied and other positions and provocative tests are used appropriately. Physicians choosing to begin the study in the upright position should consider performing 10 upright swallows.
Classification is based on the primary position in which 10 wet swallows are performed, either supine or upright. Assessment of swallows in the secondary position and with provocation provide supportive data

In addition to Chicago Classification v3.0 metrics, final report should include baseline measures of the esophagogastric junction (EGJ) and symptoms experienced during the study and within 15 seconds of a motility dysfunction.

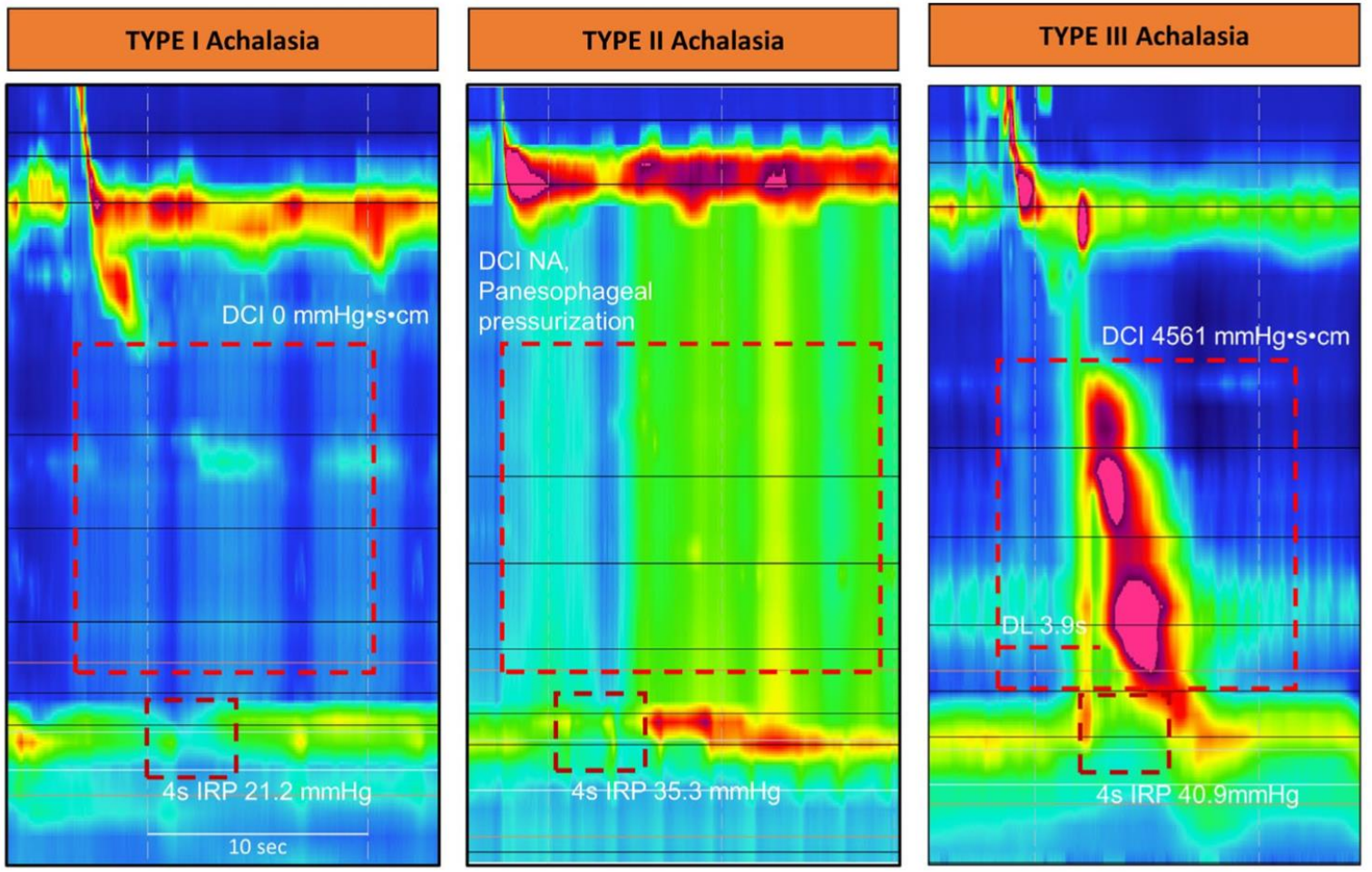
Yadlapati R et al. Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0©. Neurogastroenterol Motil. 2021.

ACALASIA

TIPO I (CLÁSICA):
- PRI ≥ 15 mmHg
- 100% degluciones con peristalsis fallida (DCI < 100 mmHg·s·cm)

TIPO II (CON COMPRESIÓN ESOFÁGICA):
- PRI ≥ 15 mmHg
- 100% degluciones con peristalsis fallida
- ≥ 20% degluciones con presurización panesofágica

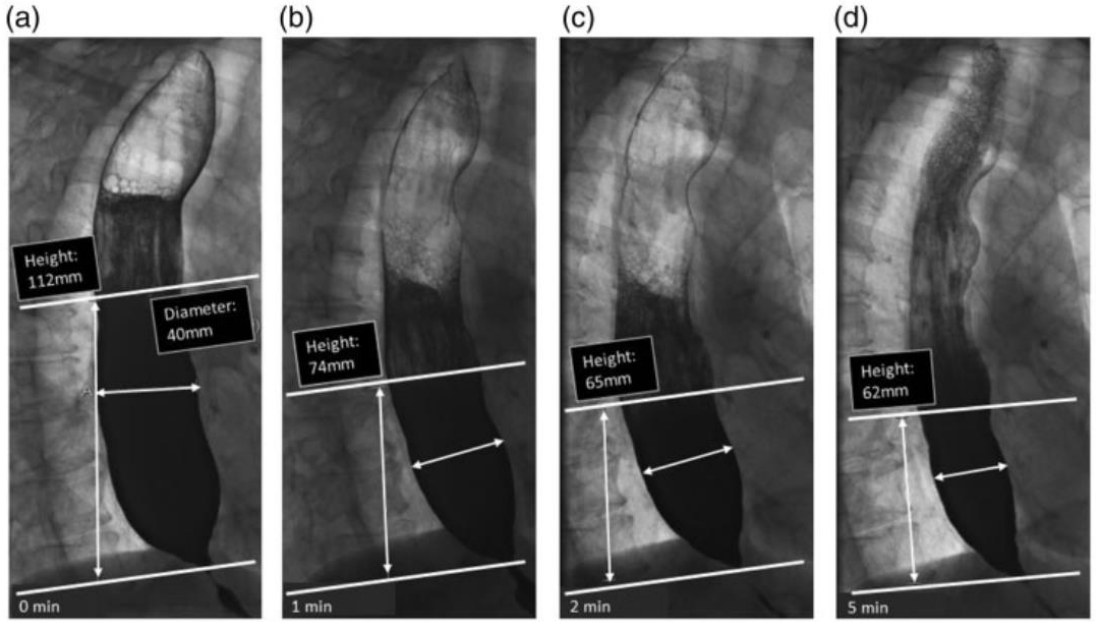
TIPO III (ESPÁSTICA):
- PRI ≥ 15 mmHg
- Ausencia peristalsis
- ≥ 20% degluciones con contracciones prematuras (LD < 4,5 s y DCI > 450 mmHg·s·cm)

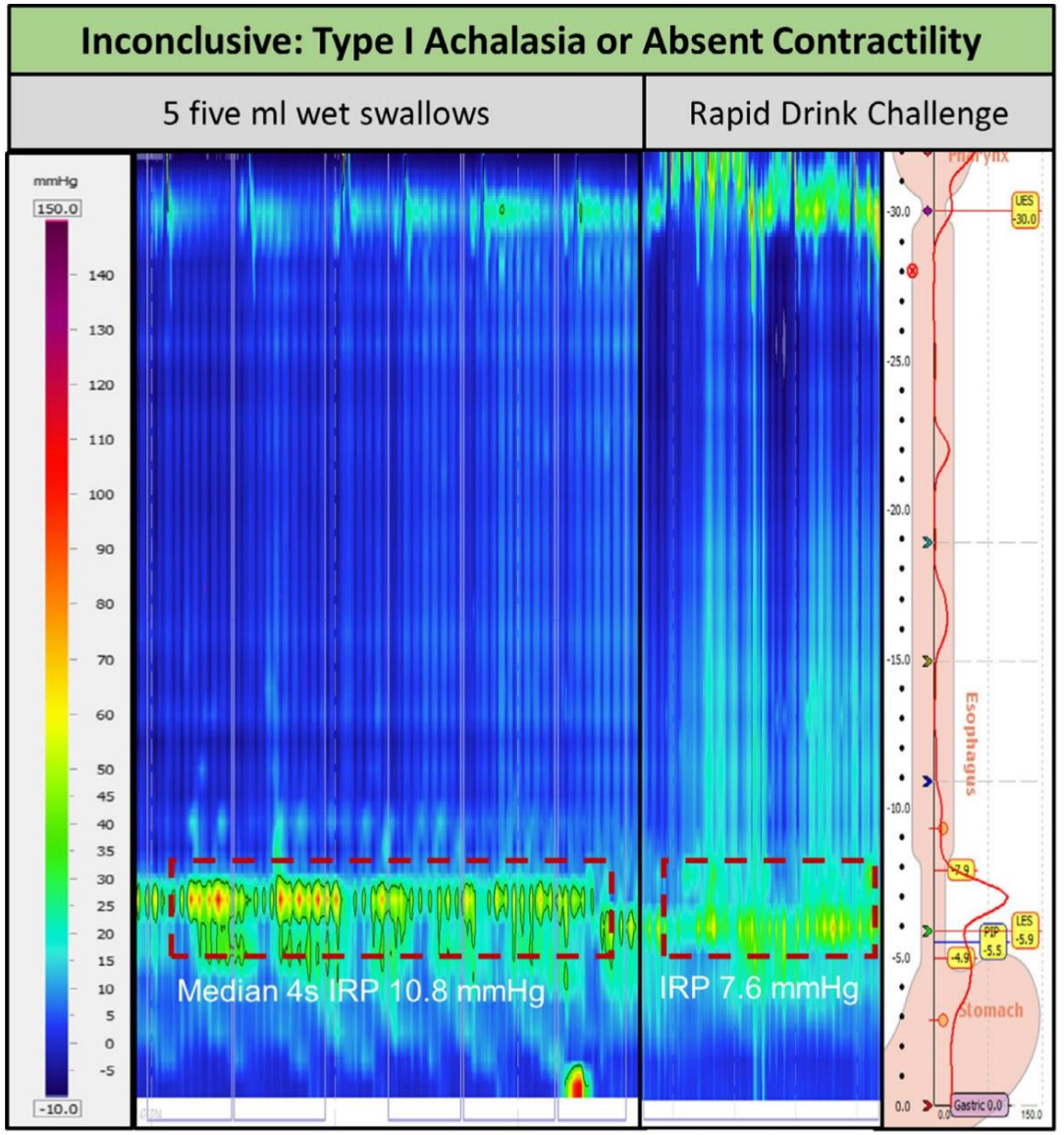


Yadlapati R et al. Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0©. Neurogastroenterol Motil. 2021.

ACALASIA

En los casos con resultados manométricos inconcluyentes son necesarios **estudios complementarios** (esofagograma temporizado con bario, FLIP)





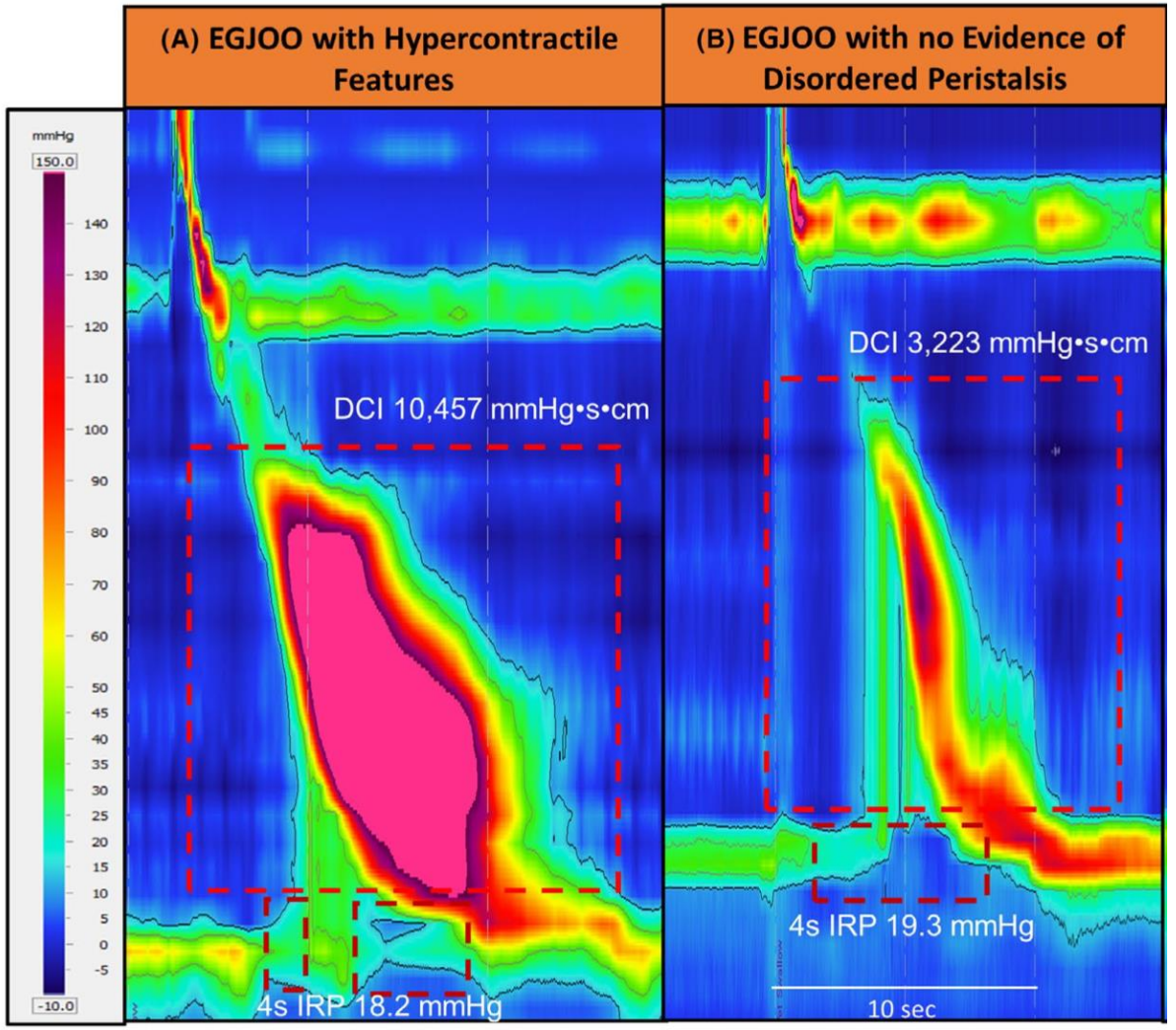
Yadlapati R et al. Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0©. Neurogastroenterol Motil. 2021.

OBSTRUCCIÓN FUNCIONAL DE LA UNIÓN ESOFAGOGÁSTRICA

EGJOO:

- PRI > 15 mmHg (supino e incorporado)
- Evidencia de peristalsis
- ≥ 20% degluciones con presurización intrabolo (presión compartimentalizada)

Debe describirse en función del patrón contráctil que presente (espástico, hipercontráctil, motilidad inefectiva, peristalsis normal)



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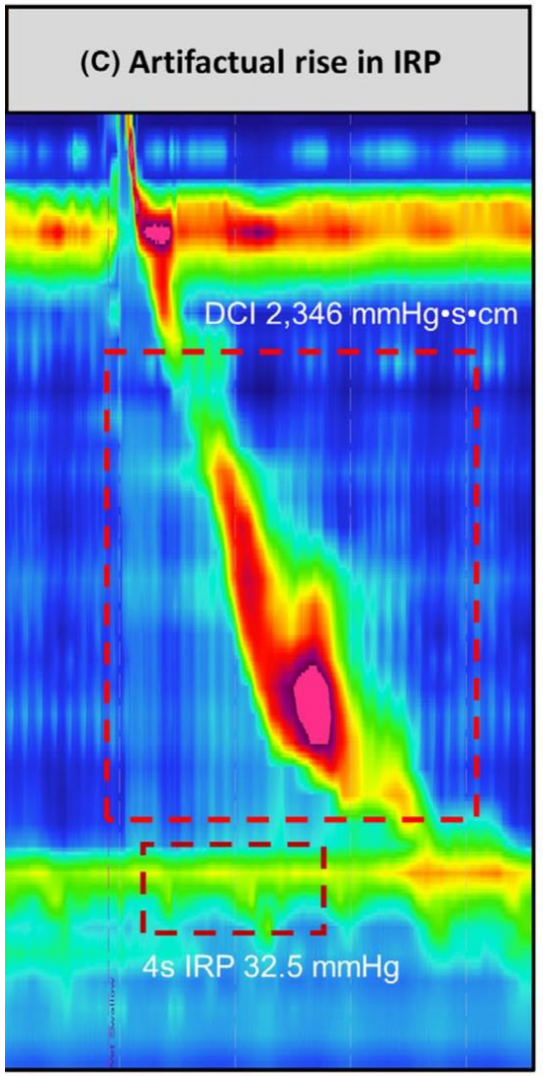
OBSTRUCCIÓN FUNCIONAL DE LA UNIÓN ESOFAGOGÁSTRICA

DESCARTAR OTRAS CAUSAS CON PATRÓN MANOMÉTRICO SIMILAR

- Artefactos
- Obstrucción mecánica
- Opioides
- Hernia de hiato por deslizamiento

DIAGNÓSTICO CLÍNICAMENTE CONCLUYENTE:
MANOMETRÍA COMPATIBLE + CLÍNICA COMPATIBLE (disfagia, dolor torácico no cardiaco)



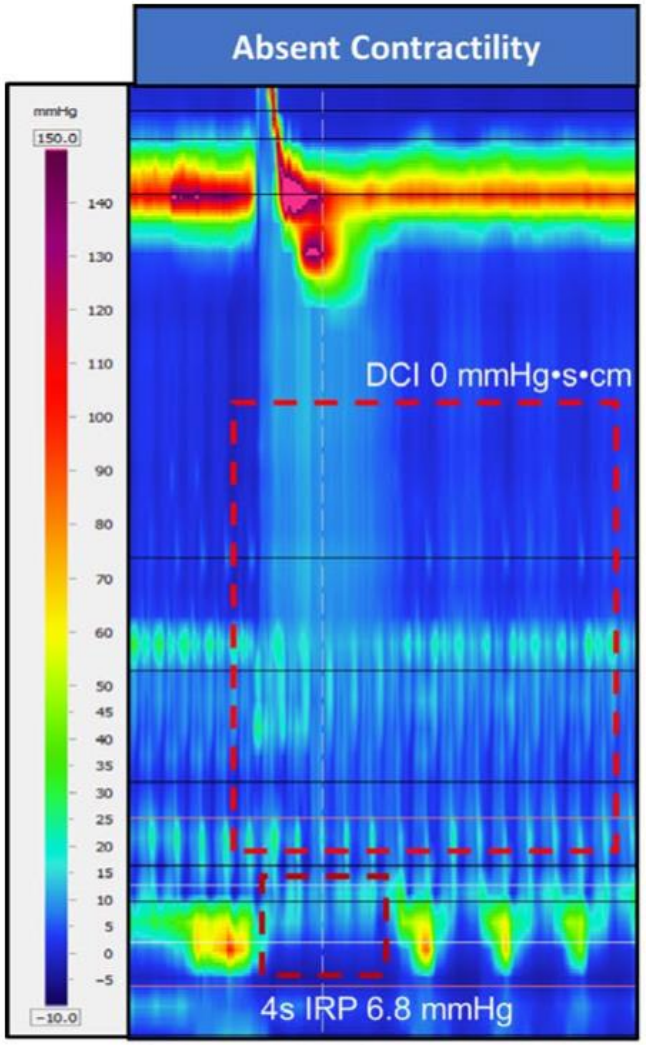
Yadlapati R et al. Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0©. Neurogastroenterol Motil. 2021.

AUSENCIA DE PERISTALSIS

AUSENCIA DE PERISTALSIS:

- PRI normal (supino e incorporado)
- 100% degluciones con peristalsis fallida (DCI < 100 mmHg·s·cm)

En los casos con resultados manométricos inconcluyentes son necesarios **estudios complementarios** (esofagograma temporizado con bario, FLIP)



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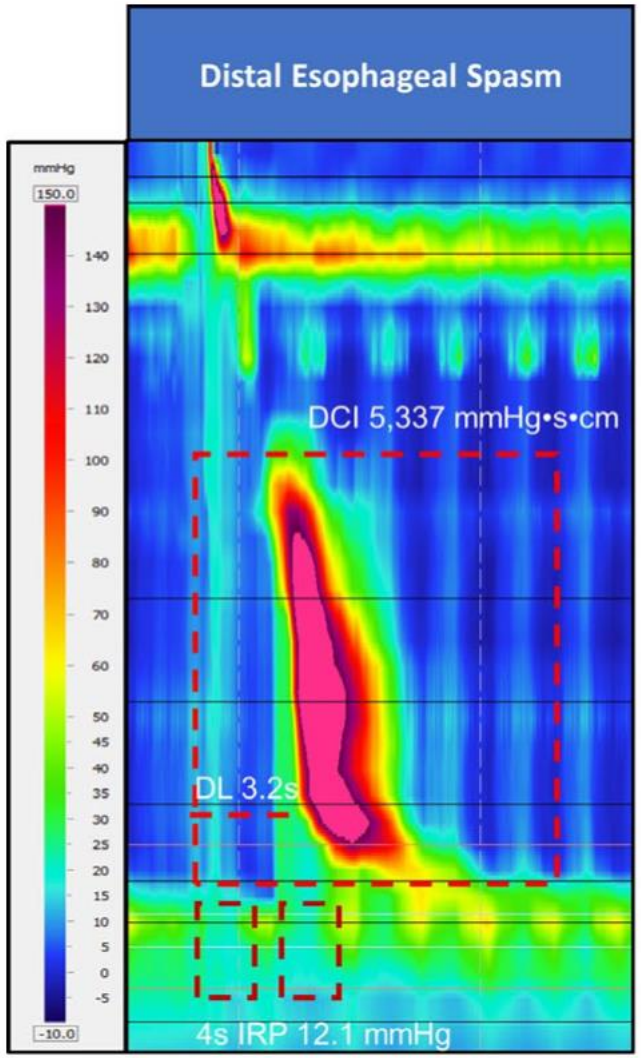
ESPASMO ESOFÁGICO DISTAL

DES:
- PRI normal
- ≥ 20% degluciones con contracciones prematuras (LD < 4,5 s y DCI > 450 mmHg·s·cm)

DIAGNÓSTICO CLÍNICAMENTE CONCLUYENTE:
MANOMETRÍA COMPATIBLE + CLÍNICA COMPATIBLE (disfagia, dolor torácico no cardiaco)



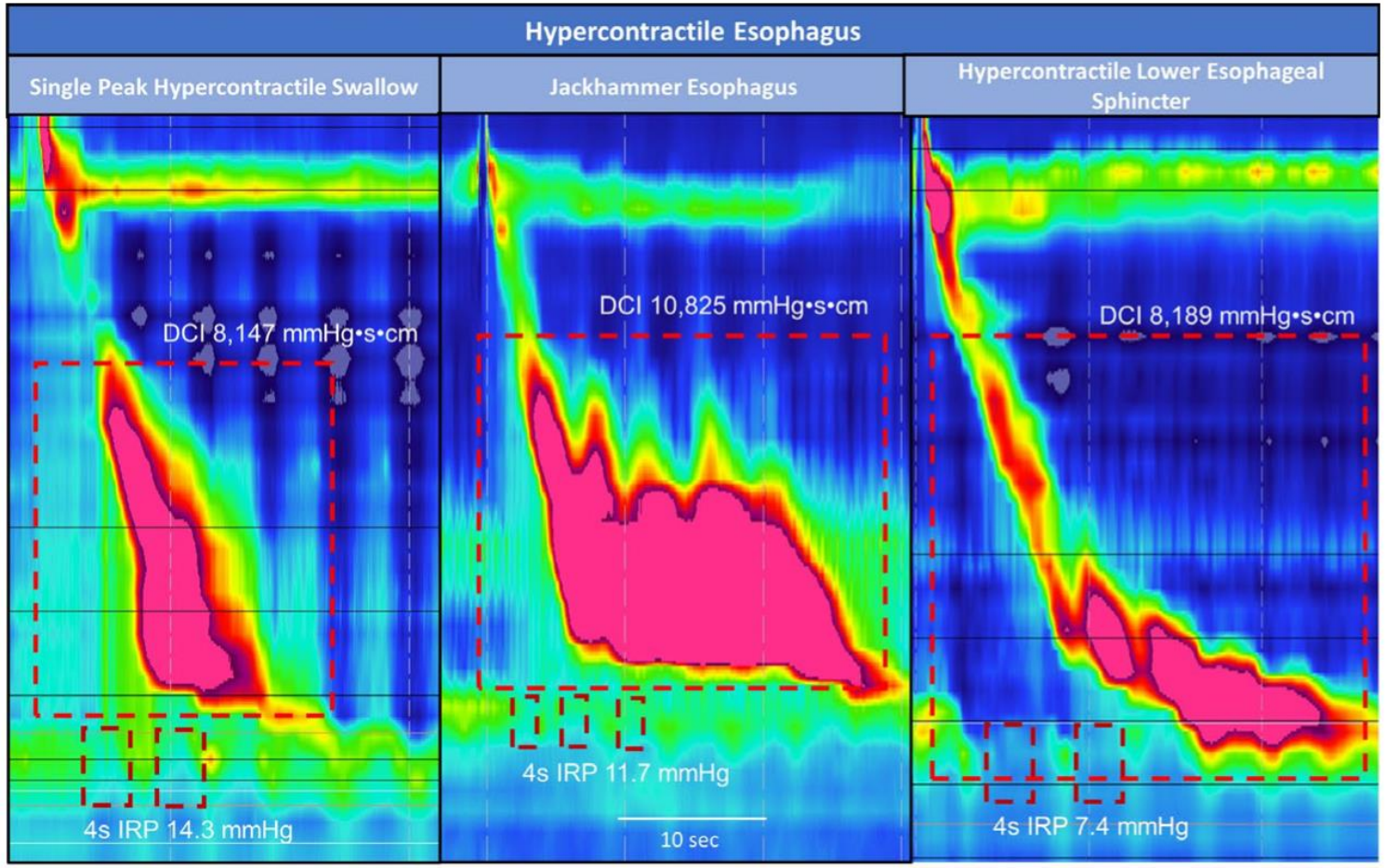
Yadlapati R et al. Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0©. Neurogastroenterol Motil. 2021.

ESÓFAGO HIPERCONTRÁCTIL

HE:
- PRI normal
- ≥ 20% degluciones con contracciones hipercontráctiles (DCI > 8000 mmHg·s·cm)

Subgrupos de HE: deglución con pico único hipercontráctil, contracciones prolongadas repetitivas ("jackhammer"), contracción vigorosa del EEI

JACKHAMMER: valores superiores de DCI, mayor gravedad de síntomas

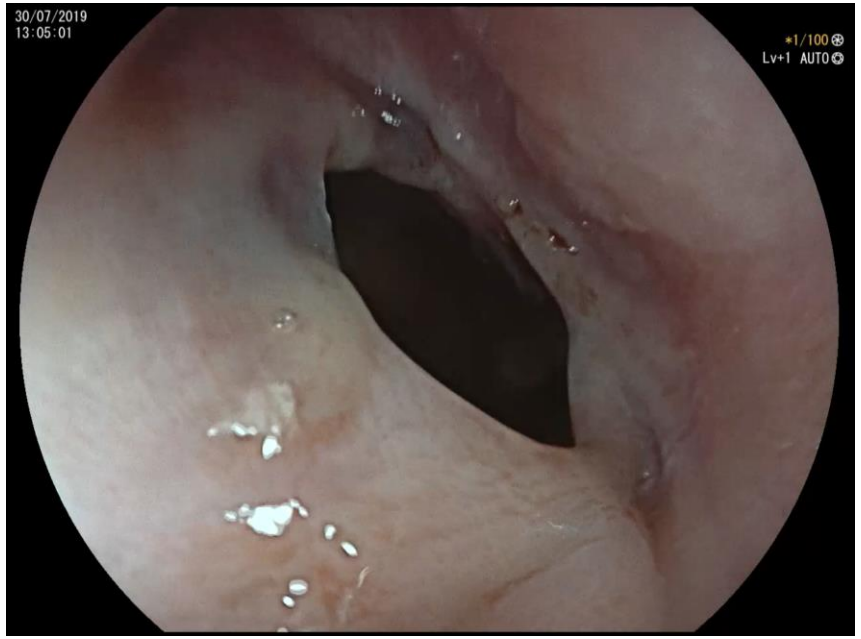


Yadlapati R et al. Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0©. Neurogastroenterol Motil. 2021.

ESÓFAGO HIPERCONTRÁCTIL

DESCARTAR OBSTRUCCIÓN MECÁNICA QUE DESENCADENE UNA RESPUESTA HIPERCONTRÁCTIL

DIAGNÓSTICO CLÍNICAMENTE CONCLUYENTE:
MANOMETRÍA COMPATIBLE + CLÍNICA COMPATIBLE (disfagia, dolor torácico no cardiaco)



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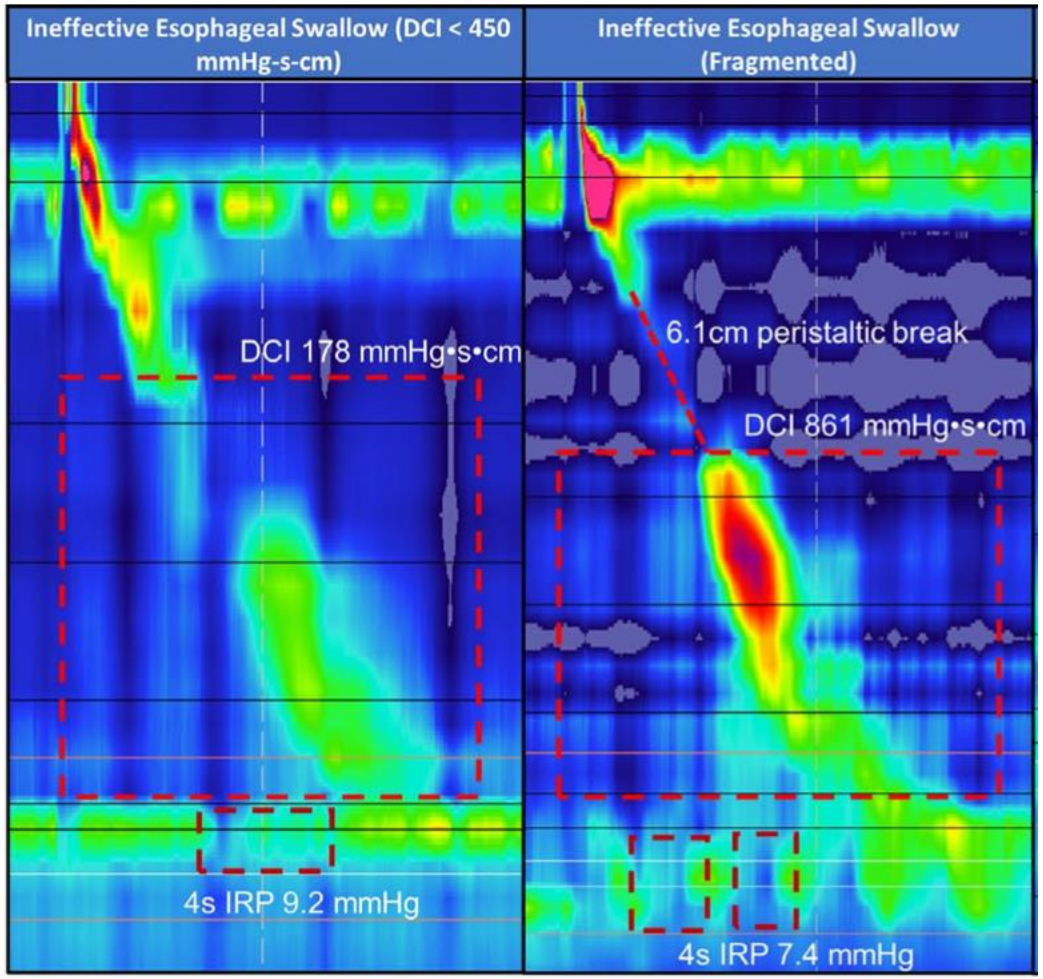
MOTILIDAD ESOFÁGICA INEFECTIVA

MOTILIDAD ESOFÁGICA INEFECTIVA:

- PRI normal
- ≥ 70% degluciones inefectivas* o ≥ 50% degluciones con peristalsis fallida

*deglución inefectiva: contracción débil (DCI > 100 y < 450 mmHg·s·cm) o peristalsis fallida (DCI < 100 mmHg·s·cm)

La **ERGE** es la principal causa de motilidad esofágica inefectiva



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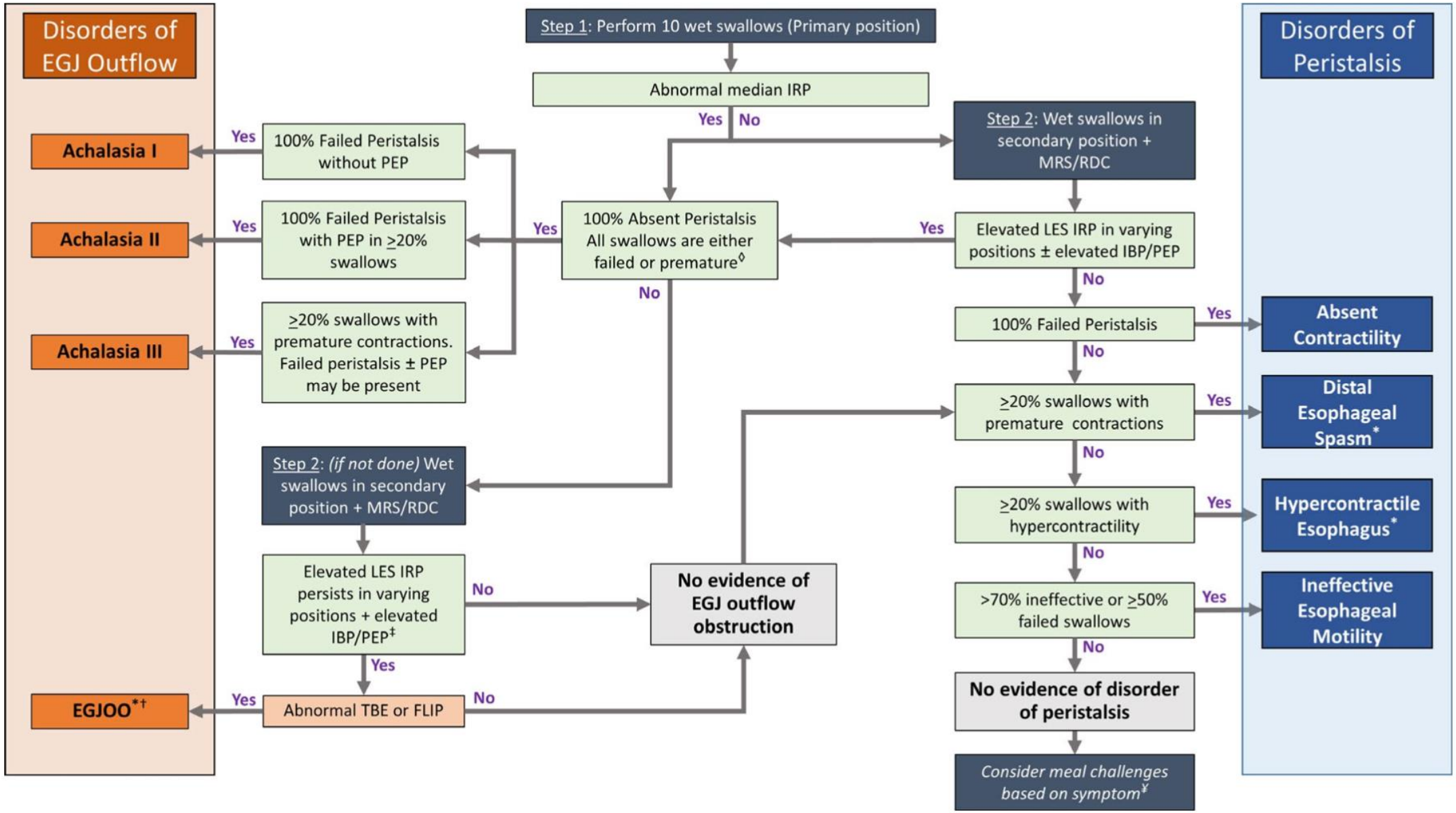


Yadlapati R et al. Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0©. Neurogastroenterol Motil. 2021.

TRATAMIENTO TRASTORNOS MOTORES ESOFÁGICOS

MÉDICO	• Nitratos, antagonistas del calcio, inhibidores de la fosfodiesterasa, inhibidores de la bomba de protones • **Baja eficacia**
ENDOSCÓPICO	• Inyección de toxina botulínica, dilatación endoscópica con balón, miotomía endoscópica peroral (POEM) • **Eficacia transitoria (excepto POEM)**
QUIRÚRGICO	• Miotomía de Heller +/- funduplicatura total o parcial • **Eficacia a corto y largo plazo en acalasia**

TRATAMIENTO ACALASIA

Recommendation 2.8

a. Treatment decisions in achalasia should be made based on patient-specific characteristics, the patient's preference, possible side effects and/or complications and a center's expertise. Overall, graded repetitive PD, LHM and POEM have comparable efficacy.

Strong recommendation, moderate certainty of evidence

Consensus: 100% agree [Vote: A++, 55.6%; A+, 44.4%; A, 0%; D 0%; D+, 0%; D++, 0%]

b. Botulinum toxin therapy should be reserved for patients who are too unfit for more invasive treatments, or in whom a more definite treatment needs to be deferred.

Conditional recommendation, moderate certainty of evidence

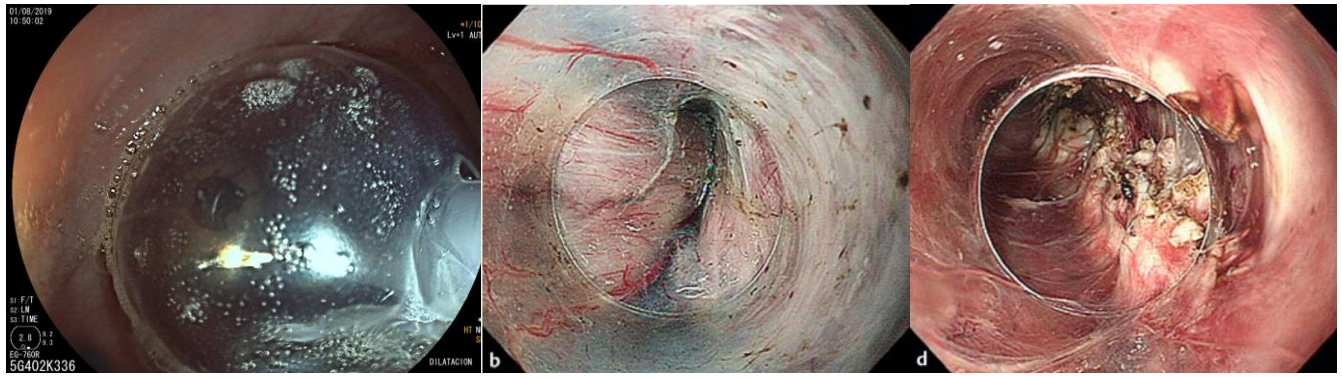
Consensus: 100% agree [Vote: A++, 100%; A+, 0%; A, 0%; D 0%; D+, 0%; D++, 0%]

Table 1 | Clinical scoring system for achalasia (Eckardt score)

Score	Symptom			
	Weight loss (kg)	Dysphagia	Retrosternal pain	Regurgitation
0	None	None	None	None
1	<5	Occasional	Occasional	Occasional
2	5–10	Daily	Daily	Daily
3	>10	Each meal	Each meal	Each meal

Table 2 | Clinical staging of achalasia

Stage	Eckardt score*	Clinical Implication
0	0–1	Remission
I	2–3	Remission
II	4–6	Treatment failure
III	>6	Treatment failure



Inoue H et al. Peroral endoscopic myotomy (POEM) for esophageal achalasia. Endoscopy. 2010.

Nijhuis O et al. European guidelines on achalasia. United European Gastroenterol J. 2020.

Eckardt AJ et al. Treatment and surveillance strategies on achalasia: an update. Nat Rev Gastroenterol Hepatol. 2011.

POEM

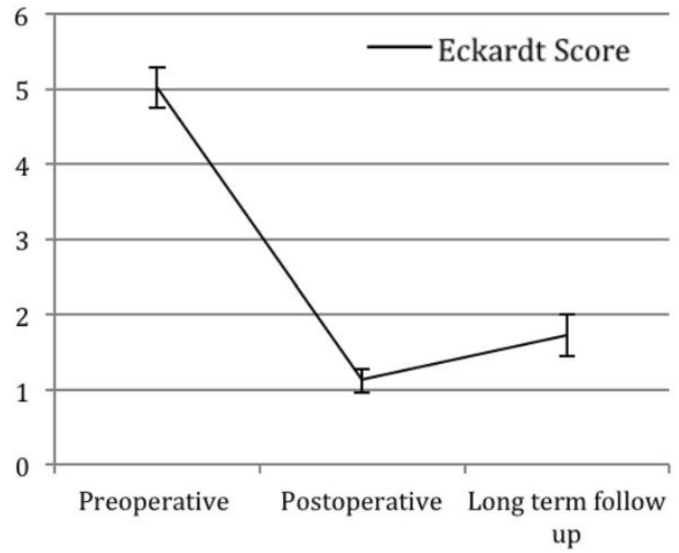
Eficaz y **seguro** en el tratamiento de la acalasia y de los trastornos motores esofágicos de tipo espástico

Table 2 The efficacy of POEM for non-achalasia esophageal motility disorders

First authors (publication year)	Patients (*n*)	Mean Eckardt score		Mean mytomy length (cm)	Clinical responses (%)	Mean follow-up	Compli-cations% (n/N)
		Pre-POEM	Post-POEM				
Louis [41]	1DES	7	1	13	100	2 M	0
Shiwaku [6]	1DES	7	0	17	100	NM	0
Kristens [42]	3NE	10,10,11	3,1,1	16	100	12 M	33.3
Khashab [24]	9DES	6.9	1	16	100	7.8 M	22.2
	10 JE	8.4	2.6		70		20
	54spastic achalasia	6.4	0.86		96.3		7.4
Sharata [43]	75achalasia	6	1	8	100	20.1 M	6
	25(12NE/5DES/8isolated hypertensive non-relaxing LES)	5			70	23.0 M	
Bechara [26]	4JE	5,5,11	6,0,0,2		75%	12 M	0
Khan [44]	37 JE	N	≤3	13.5	72%	N	16
	18DES				88%		14
Khashab [25]	15EGJ outflow obstruction (17DES/18JE)	6.2 6.9	1 1.9	15.1±4.7	93.3% 84.9%	195 days	18
Filicori [45]	(15hypercontractile esophagus 11DES 14 EGJ outflow obstruction	5.02(±0.27)	1.2	9.9±5.4 7.4±2.4 13.0±6.2	91%	48 M	10

Table 5. Comparison of Outcomes between Peroral Endoscopic Myotomy and Other Treatments for Esophageal Motility Disorders

Study	Treatment comparison	Patient (*n*)	Clinical responses (%)	Mean follow-up (mo)	Major complication (%)
Hungness et al. (2013)[30]	POEM vs. HM	18 vs. 55	89 (POEM)	6	17[b] vs. 13[b]
Bhayani et al. (2014)[46]	POEM vs. HM	37 vs. 64	95 vs. 90	6	13[b] vs. 18[b]
Kumbhari et al. (2015)[47]	POEM vs. HM	49 vs. 26	98 vs. 80	8.6 vs. 21.5	6[b] vs. 27[b]
Ponds et al. (2019)[48 a)]	POEM vs. PD	67 vs. 66	92 vs. 54	24	0 vs. 3
Shea et al. (2020)[49]	POEM vs. HM	44 vs. 97	73.3 vs. 65.4	18.2 vs. 45.0	N/A
Wirsching et al. (2019)[50]	POEM vs. HM	23 vs. 28	Mean Eckardt score 0 at follow up (both)	2.8 vs. 3.4	9[b] vs. 14[b]
Werner et al. (2019)[38 a)]	POEM vs. HM	112 vs. 109	83.0 vs. 81.7	24	2.7 vs. 7.3



Feng J et al. Peroral endoscopic myotomy for esophageal motility disorders. Esophagus. 2020.

Filicori F et al. Long-term outcomes following POEM for non-achalasia motility disorders of the esophagus. Surg Endosc. 2019.

Kim JY et al. Peroral endoscopic myotomy for esophageal motility disorders. Clin Endosc. 2020.

CONCLUSIONES

- La manometría de alta resolución es esencial para el diagnóstico de los trastornos motores esofágicos, aunque en ocasiones insuficiente para establecer el diagnóstico
- El nuevo protocolo de estudio consiste en 10 degluciones líquidas de 5 ml en supino junto con una prueba de degluciones rápidas múltiples, y 5 degluciones líquidas de 5 ml en posición incorporada junto con un test de bebida rápida
- Resulta fundamental descartar causas mecánicas y/o farmacológicas de hipertonía del EEI
- El diagnóstico clínicamente concluyente de obstrucción funcional de la unión esófago-gástrica, de espasmo esofágico distal y de esófago hipercontráctil requiere de un patrón manométrico junto con un cuadro clínico compatibles (disfagia, dolor torácico)
- La definición de motilidad esofágica inefectiva es ahora más estricta e incorpora la peristalsis fragmentada
- El tratamiento de la acalasia debe de basarse en las características del paciente, sus preferencias y la experiencia del centro
- El POEM es un tratamiento eficaz y seguro para la acalasia y los trastornos motores esofágicos de tipo espástico

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