

Case Discussion

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Supervisor 連漢仲 醫師

Patient Profile

- ID: 762318J
- Gender: male
- Age: 65 year-old
- Smoking: 0.5 PPD for 30 years, quit for 18 years
- Family history: nil

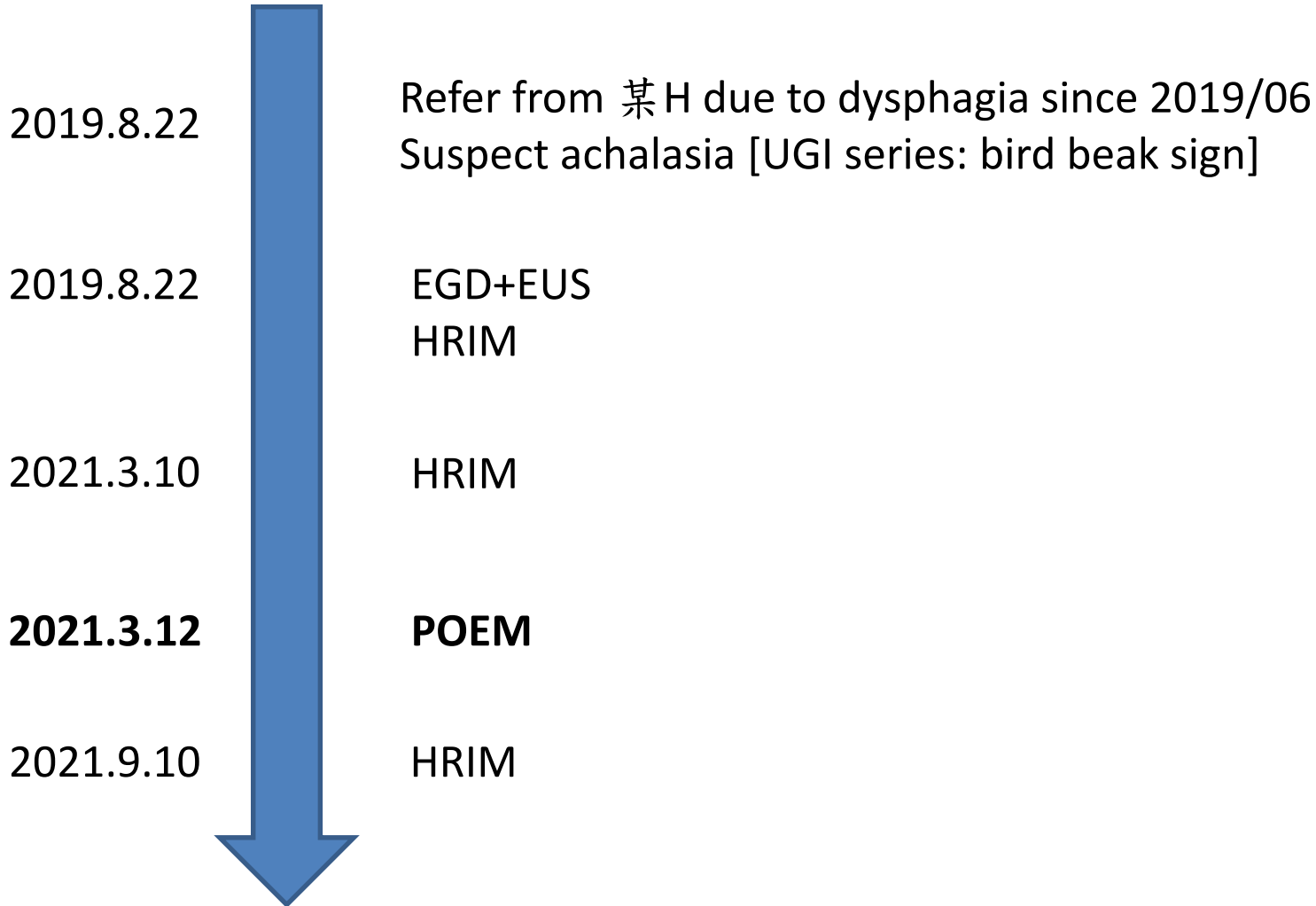
Chief Complaint

- Dysphagia since 2019/06

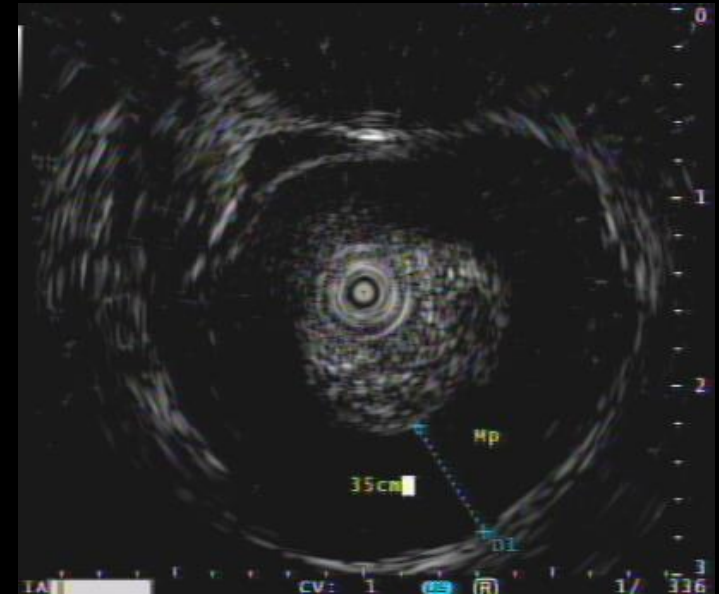
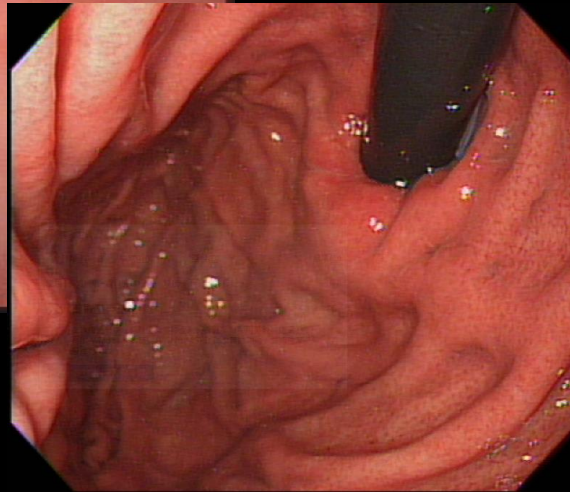
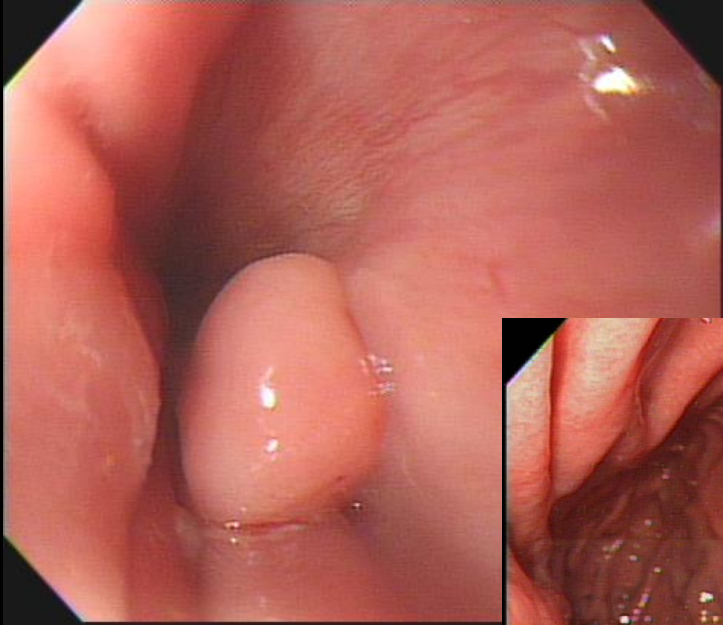
Past Medical History

- Oral and tongue cancer, SCC s/p surgical intervention + flap + CCRT 20+ years ago at TPVGH, stable disease
- Hypertension s/p Valsartan
- Diabetes mellitus, type II s/p Insulin (Toujeo and Novorapid)
- Hyperlipidemia s/p Atorvastatin

Course



2019/9/18 EGD



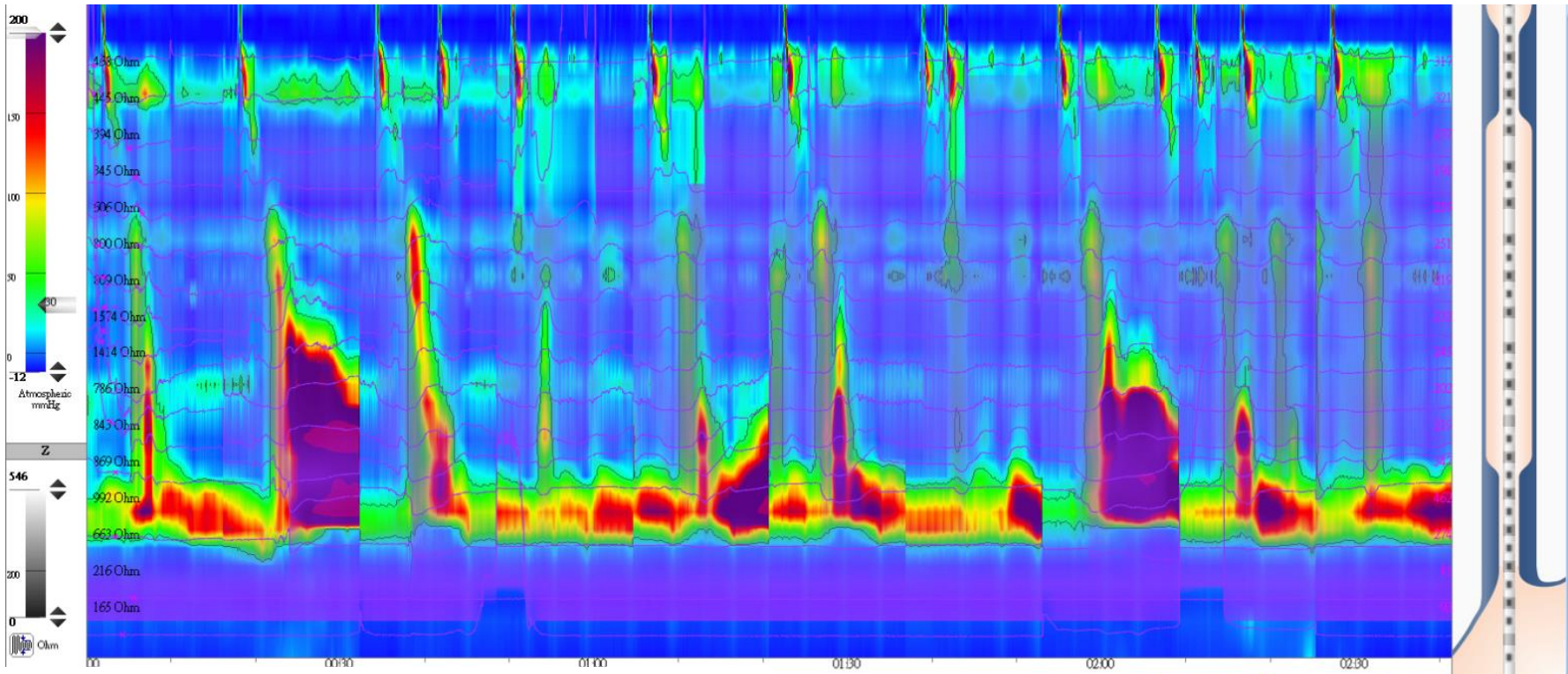
Thickened Mp layer, 7mm

- Strong resistance at EC-junction
- One polypoid lesion near EC-junction

2021/2/19
UGI Series

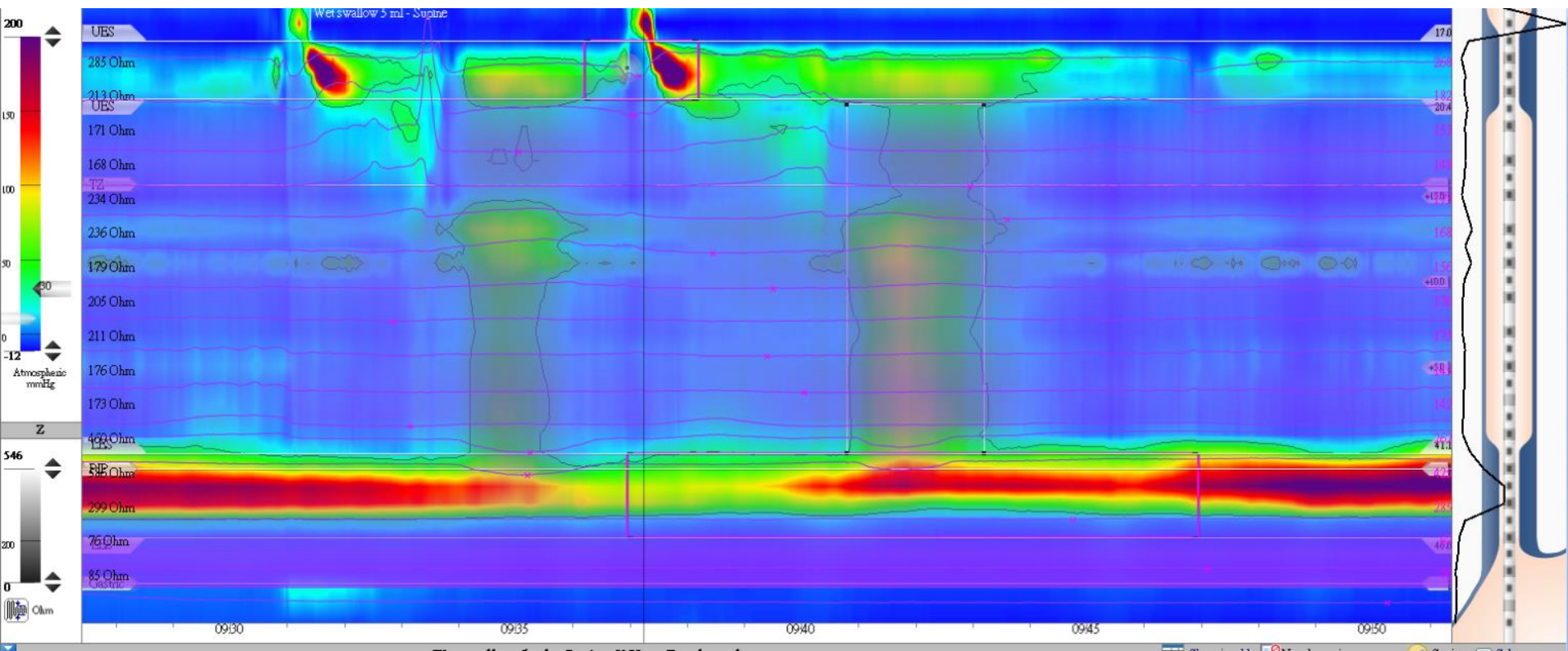


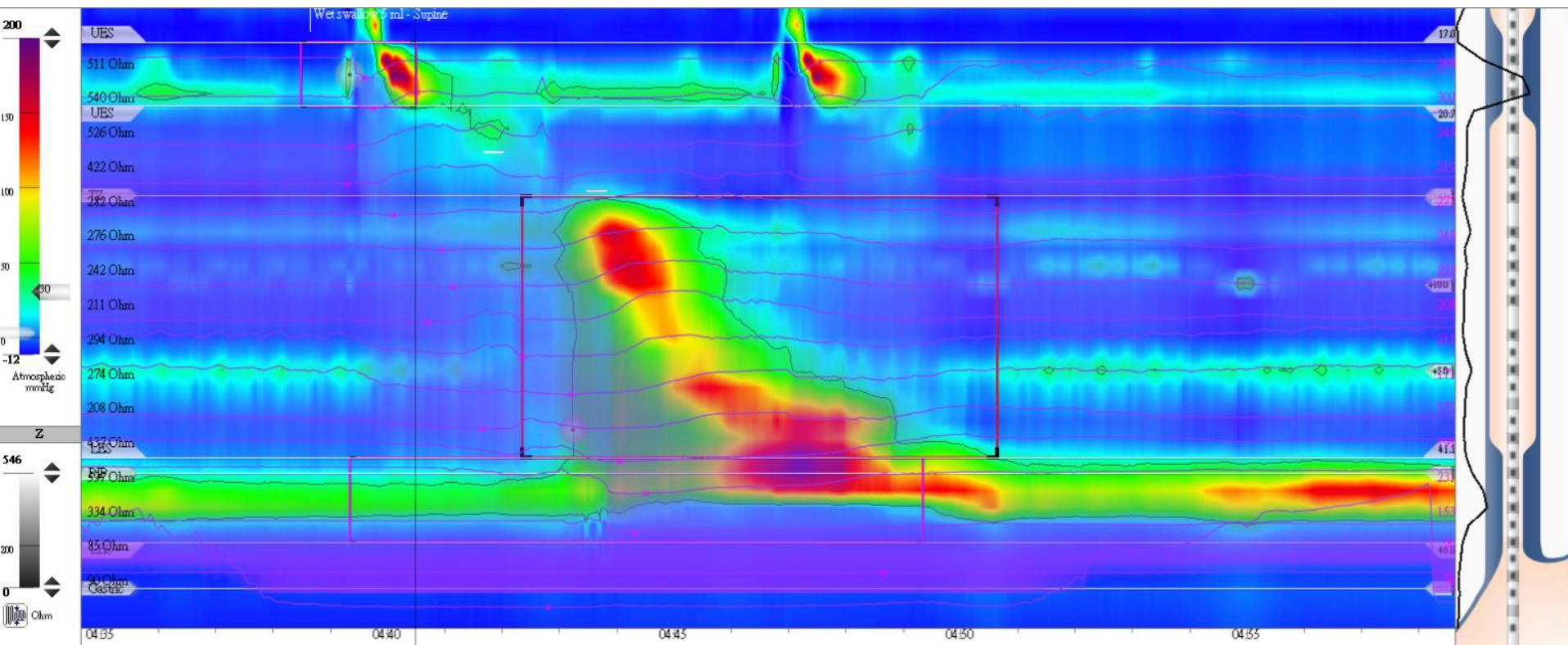
2019/9/18 HRIM WS(Supine)



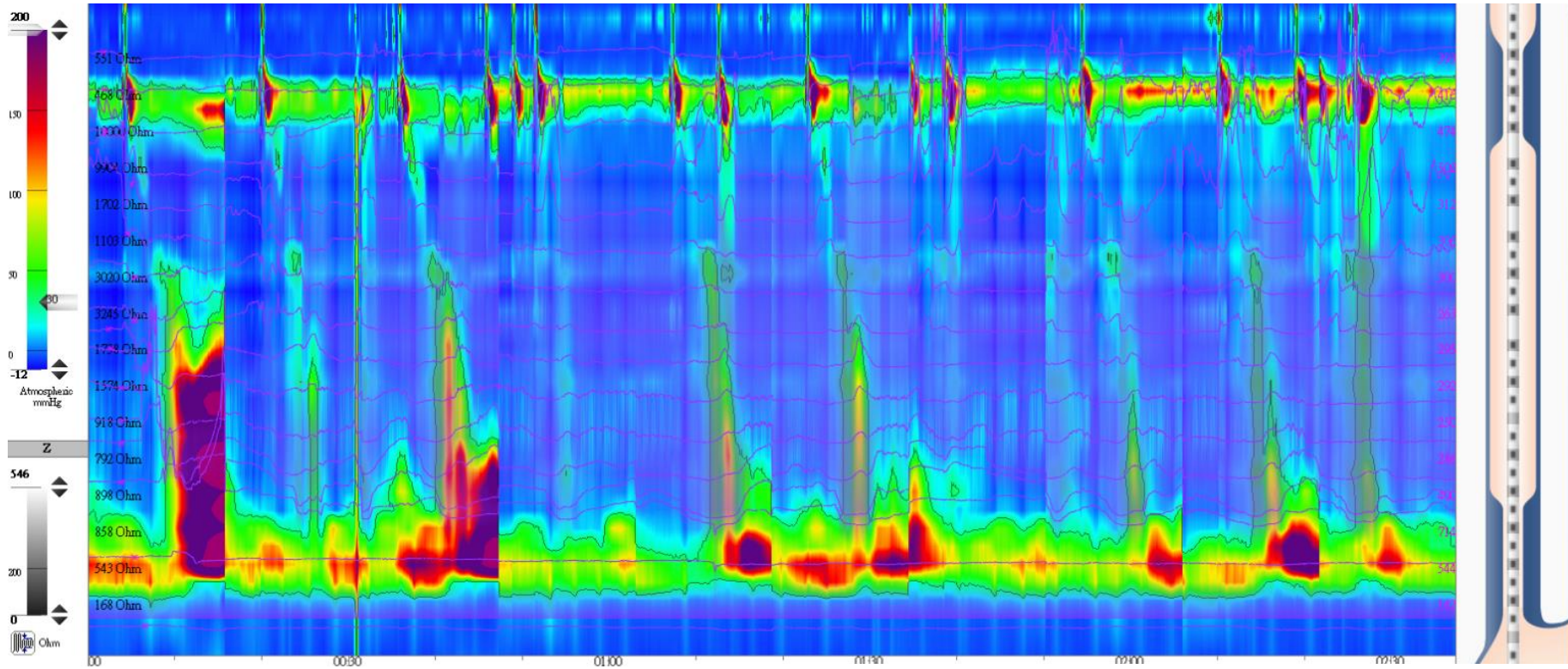
IRP 4s: 102.1 mmHg
Ineffective 20%
Failed contraction 20%

Premature 80%
Hyper 20%
PEP 10%
Distal latency 3.6s





2021/3/10 HRIM WS(Supine)



IRP 4s 97 mmHg

Ineffective 50%

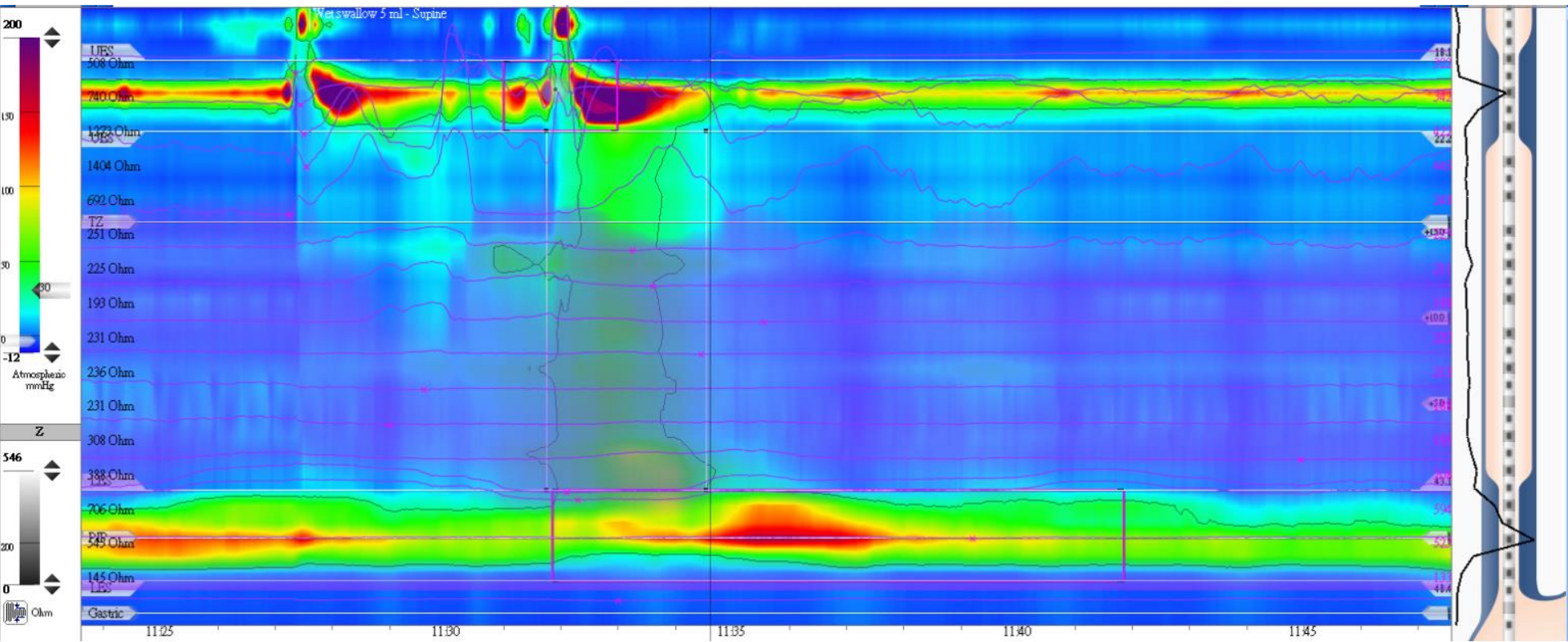
Failed contraction 40%

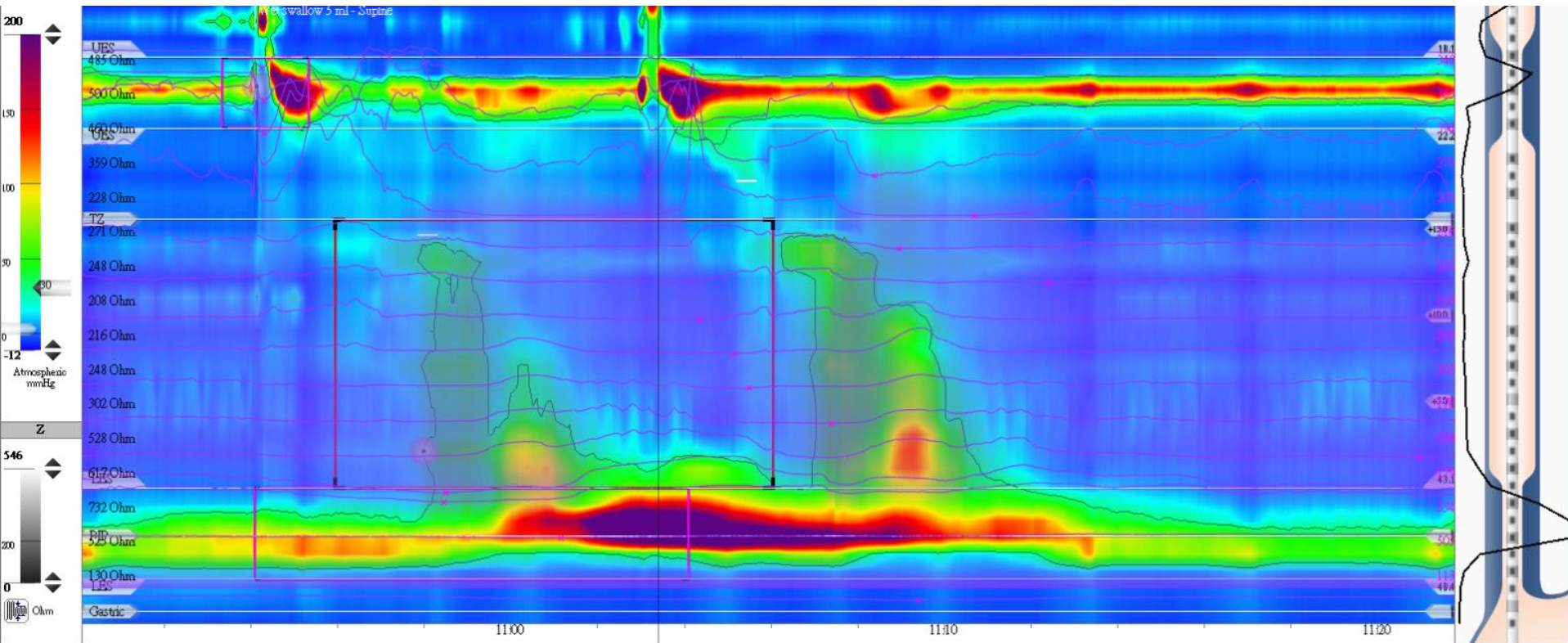
Premature 40%

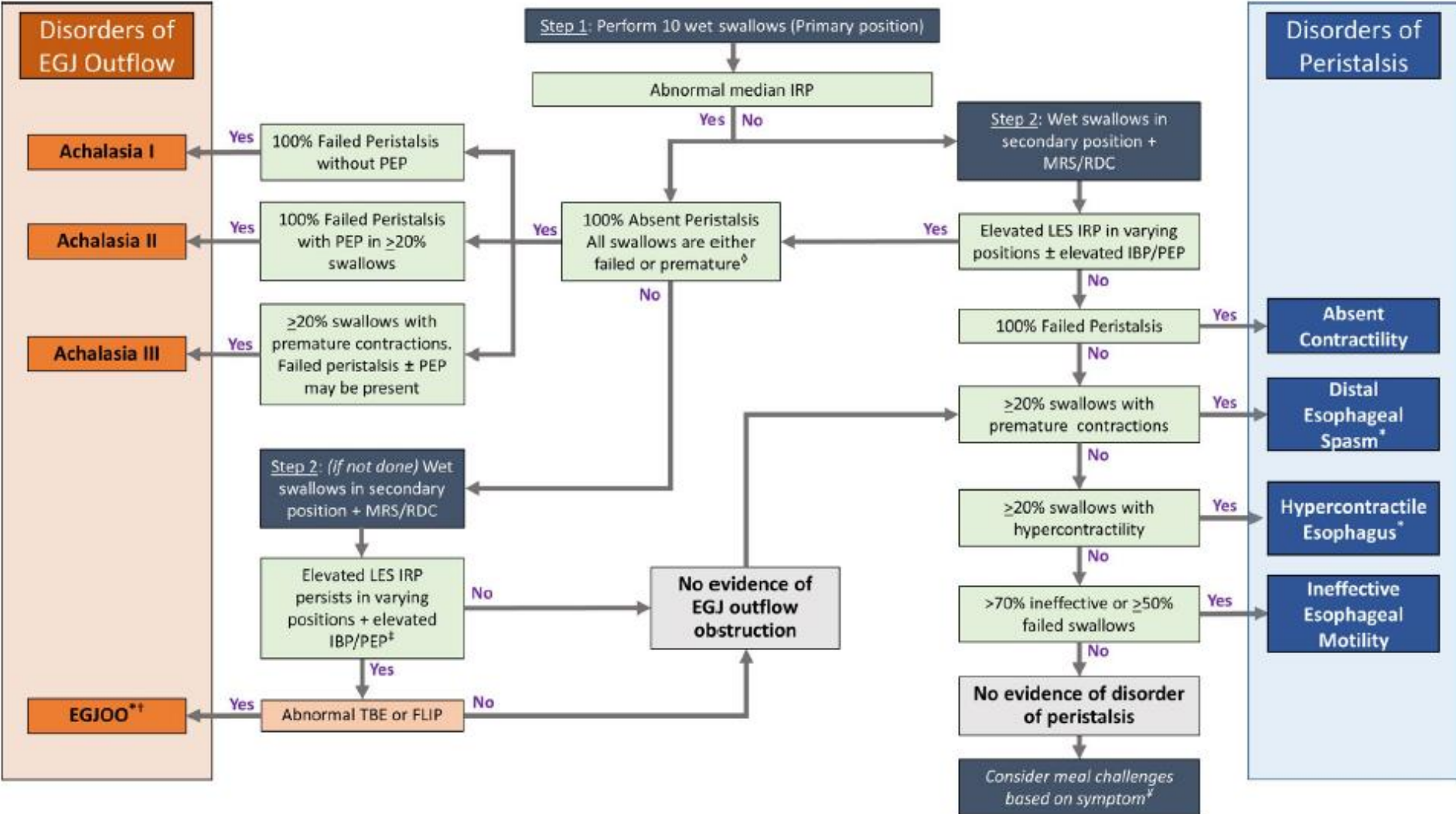
Hyper 20%

PEP 10%

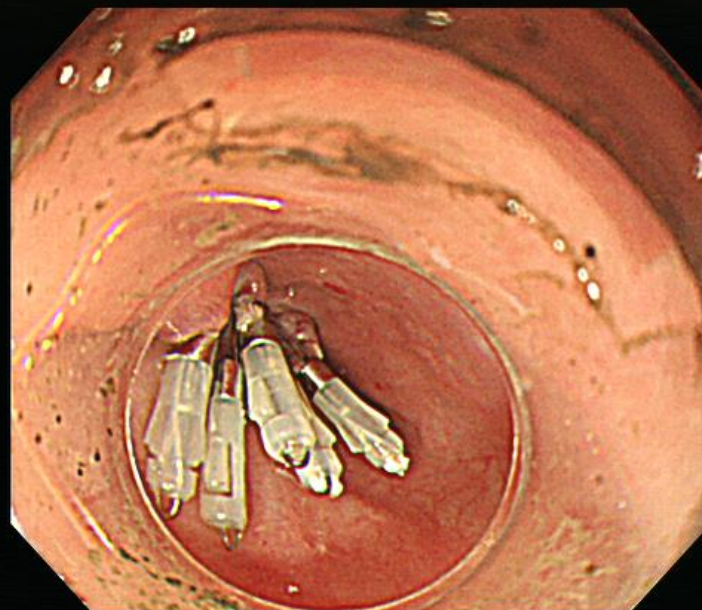
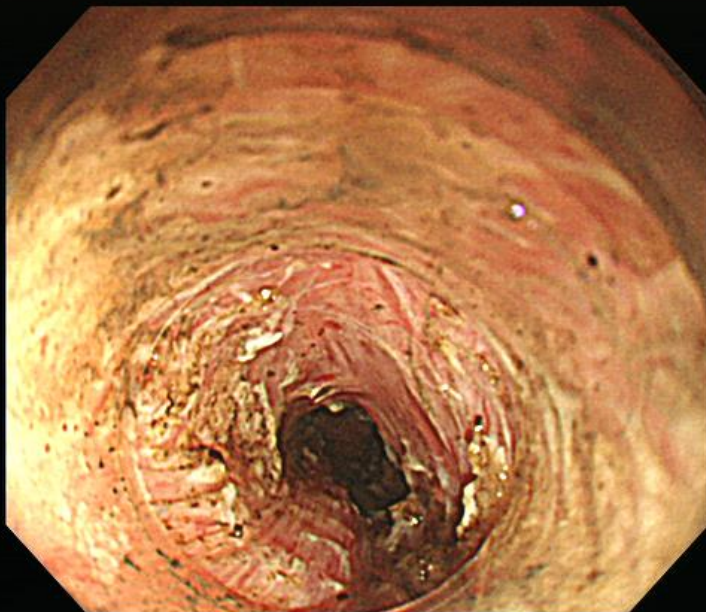
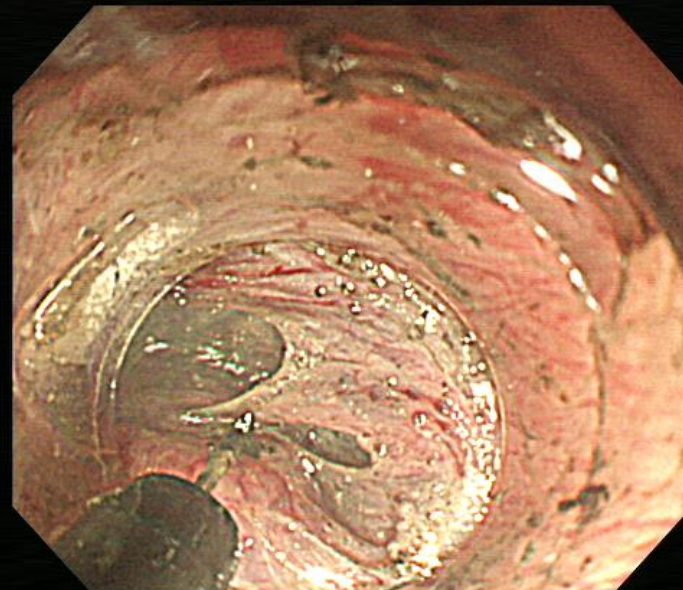
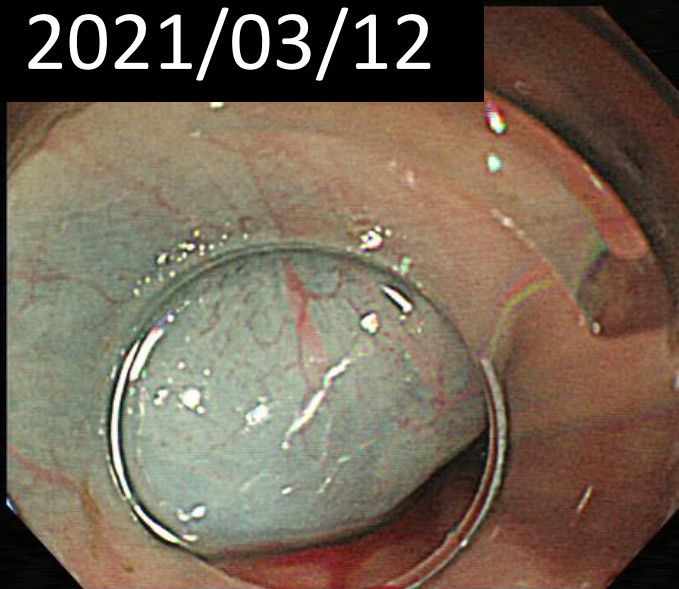
Distal latency 4.3s



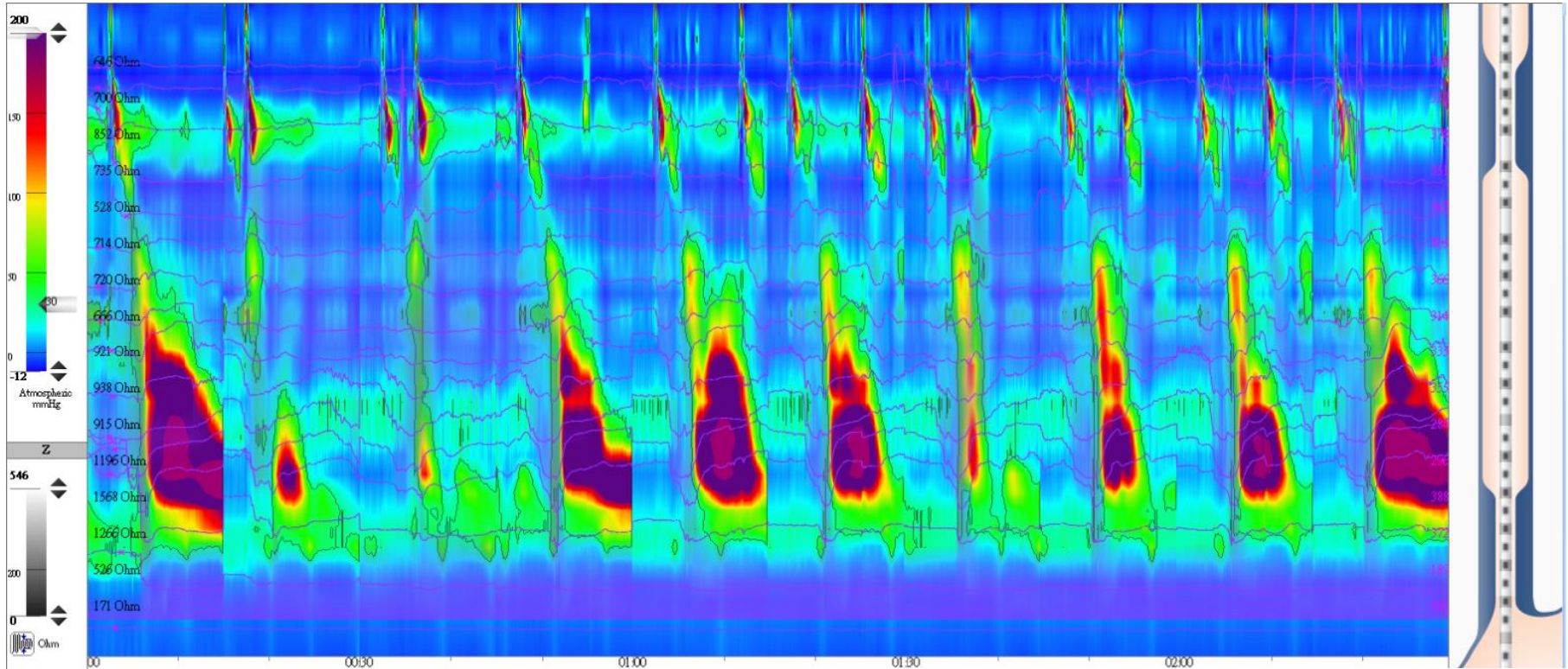




POEM 2021/03/12



2021/9/10 HRIM WS(Supine)



IRP 4s 27 mmHg

Ineffective 20%

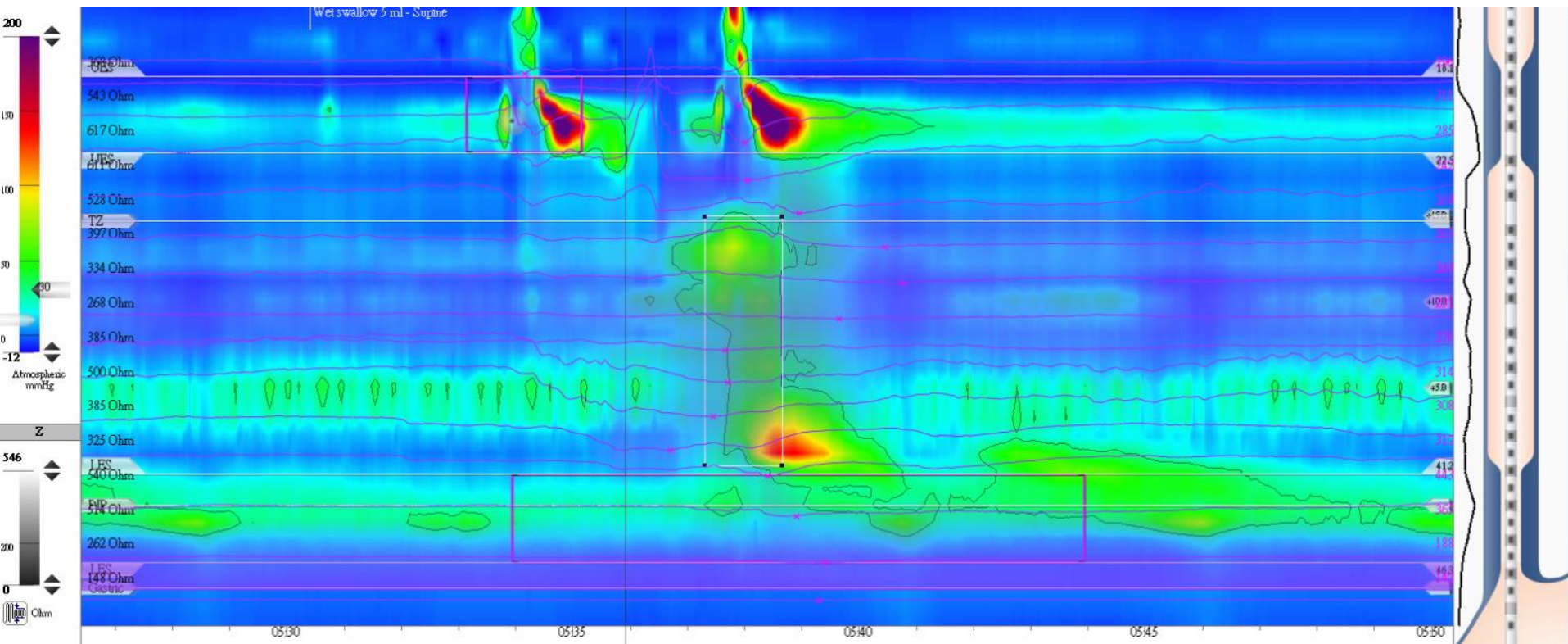
Failed contraction 20%

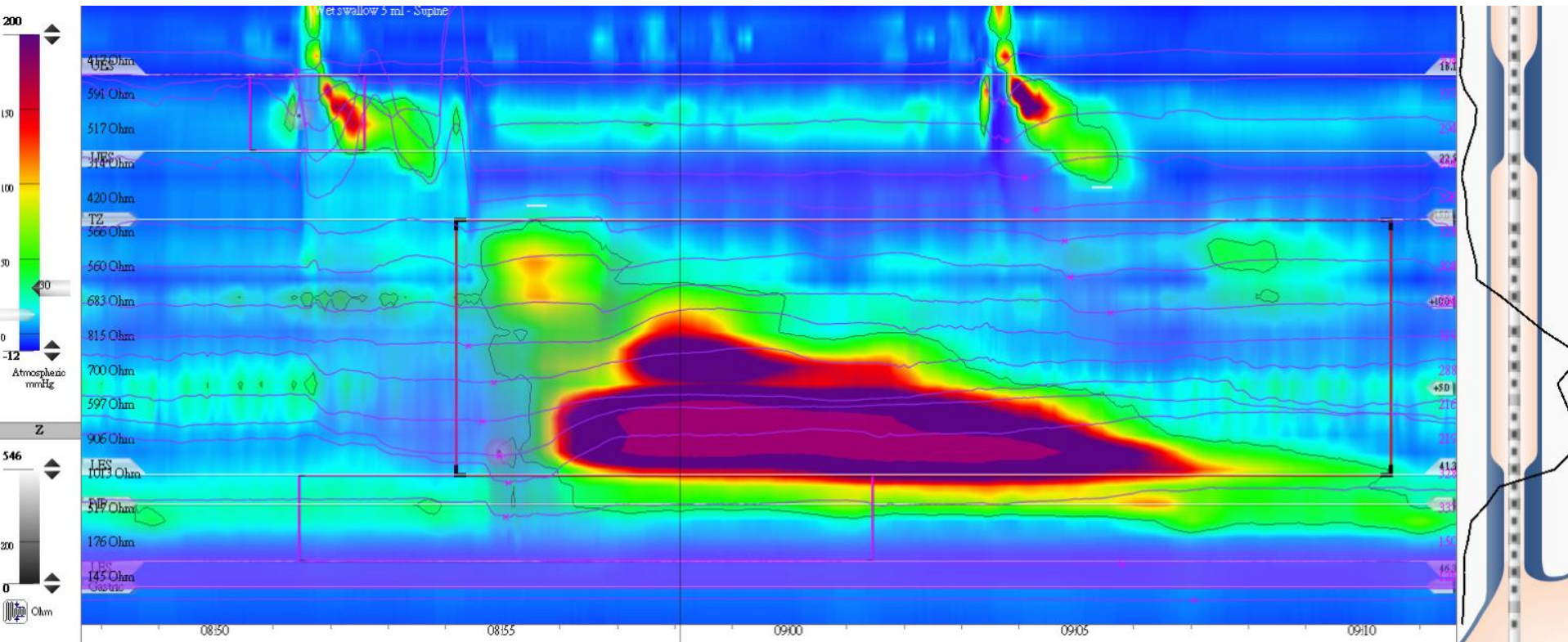
Premature 80%

Hyper 60%

PEP 20%

Distal latency 3.7s





Eckardt score

		2019/9/18	2021/3/10	2021/3/12	2021/9/10
1	體重減輕	1	3	POEM	0
2	吞嚥困難	2	3		1
3	胸口疼痛	1	1		0
4	逆流	2	3		0
	Total	6	10		1
	IRP(supine)	102	97		29mmHg
	IRP(upright)	X	99		27mmHg
	Premature	80%	40%		80%
	PEP	10%	10%		20%

Scores of 0-1: stage 0, 2-3 to stage I, 4-6 to stage II, score >6 to stage III

The Reflux Symptom Index (RSI)

在過去一個月內，以下問題是否影響你？(0-不會，5-重度)		2019/ 9/18	2021/ 3/10	2021/ 3/12	2021/ 9/10
1	沙啞或聲音的問題	0	2	POEM	2
2	清喉嚨	0	3		2
3	過多喉嚨黏液或鼻涕倒流	2	5		2
4	吞嚥食物，液體或藥丸困難	2	5		3
5	進食或躺下後咳嗽	0	4		2
6	呼吸困難或噎到事件	0	3		2
7	令人討厭或惱人的咳嗽	0	3		2
8	有東西黏在喉嚨或有塊狀物在喉嚨的感覺	2	5		0
9	心灼熱，胸痛，消化不良或胃酸跑上來	2	5		2
Total		6	35		17

Score range: 0-45 (normal ≤ 13)

The higher the score, the more severe the symptom.

Belafsky PC, 2002 J Voice.
Lien HC, 2015 Value Health

Reflux Disease Questionnaire (RDQ)

回想過去一個月， 您認為以下症狀出現時的如何？		2019/ 9/18		2021/ 3/10		2021/ 3/12	2021/ 9/10	
程度：0-不會，5-重度 頻率：0-不會，5-每天		程度	頻率	程度	頻率	POEM	程度	頻率
1	胸骨後方感到灼熱-----	3	3	3	3		1	1
2	胸骨後方感到疼痛-----	3	3	3	2		1	1
3	上腹中間感到灼熱-----	2	2	3	3		1	1
4	上腹中間感到疼痛-----	2	3	4	3		1	1
5	口腔內有酸味-----	0	0	4	3		2	1
6	有東西從胃部向上移動而感到不適	4	3	5	5		1	1
Total		19		28			9	

Score range: 0-40 (normal <12)

Shaw MJ, 2001 Am J Gastroenterol CHINESE GERD
STUDY GROUP, 2004 Chin J Dig Dis

Discussion:

Type III Achalasia

POEM versus Heller myotomy

Achalasia

- Type I (classic):
 - minimal contractility in the esophageal body
- Type II:
 - intermittent periods of panesophageal pressurization
- Type III (spastic):
 - premature or spastic distal esophageal contractions
- Treatment:
 - Pneumatic balloon dilation
 - POEM
 - Surgical myotomy

Type III achalasia, Higher surgical failure

	Positive outcome n = 219	Failure n = 27	p value
Age	41 (31–55)	44 (31–55)	n.s.
Sex (m/f)	120/99	14/13	n.s.
Symptom score	18 (12–20)	20 (17–21)	n.s.
Chest pain score	5 (0–8)	8 (3–10)	0.01
LES resting pressure (mmHg) ^a	29 (19–41)	21 (17–25)	0.0006
LES residual pressure (mmHg) ^a	9 (4.3–15)	8 (3–14)	n.s.
Total LES length (mm) ^a	39 (31–48)	45 (35–50)	n.s.
Abdominal LES length (mm) ^a	25 (19–33)	31 (22–35)	n.s.
Esophageal diameter (mm)	40 (30–45)	40 (30–50)	n.s.
Intraoperative mucosal lesions	8	1	n.s.
Pattern			0.0007
I	82 (85.4%)	14 (14.6%)	
II	121 (95.3%)	6 (4.7%)	
III	16 (69.6%)	7 (30.4%)	

Salvador R, Costantini M, Zaninotto G, et al. The preoperative manometric pattern predicts the outcome of surgical treatment for esophageal achalasia. J Gastrointest Surg 2010;14:1635-45

Type III achalasia, Limited success with pneumatic dilation

Variables	OR (95% CI)	P-value
Age (\leq 40 vs $>$ 40 yr)	0.94 (0.86-1.02)	0.366
Male vs Female	4.17 (0.66-26.29)	0.344
Duration of symptoms (\leq 60 vs $>$ 60 mo)	1.01 (0.97-1.05)	0.467
Type of achalasia	5.14 (0.94-28.14)	0.042

Successful rate:

- Type I 14/22 63.3%
- Type II 18/20 90%
- **Type III 1/3 33%**

A successful treatment response was defined as symptomatic relief requiring no further intervention up to 6 months after a single intervention

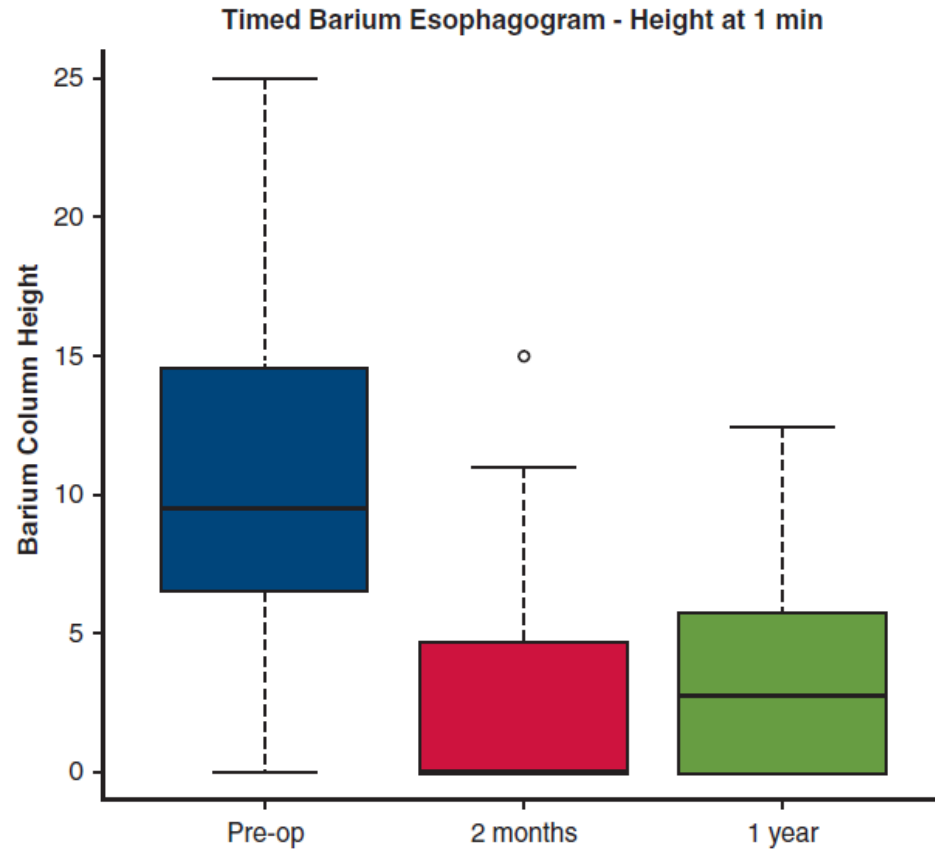
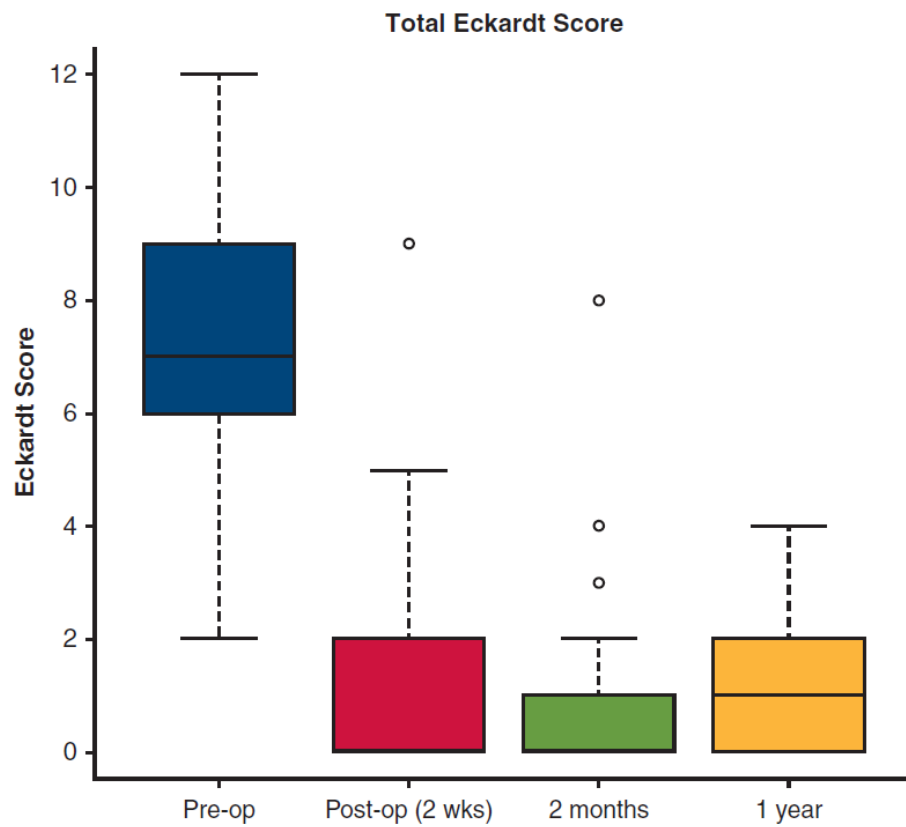
Peroral endoscopic myotomy provides effective palliation in type III achalasia



- Retrospective analysis
- Primary outcome: postoperative Eckardt score
- 518 patients
 - 308 Heller
 - 210 POEM
 - **36 type III achalasia**

Outcome variable	Success rate, %
Patient-reported outcomes	
Eckardt score (n = 34)	94
≤3 (n = 32)	
>3 (n = 2)	
Objective measures	
Manometry (n = 23)	83
IRP <15 mmHg (n = 19)	
TBE (n = 27)	52
No column at 1 min (n = 14)	
pH study (n = 23)	39
DeMeester score <14.72 (n = 9)	
Reinterventions (n = 36)	
None (n = 35)	97
Pneumatic dilations (n = 1)	

Sustained Palliation



Comparison of POEM and LHM

No significant differences in Eckardt score

Parameter	POEM (n=36)		LHM (n=35)		P value
	n (%)	Median (IQR)	n (%)	Median (IQR)	
Eckardt score	36 (100)		13 (37)		
Preop	36 (100)	7 (6-9)	7 (54)	6 (6-9.5)	.8
2wk	34 (94)	0 (0-1.75)	8 (62)	1.5 (0-2)	.3
2mo	26 (72)	0 (0-1)	5 (38)	1 (1-2)	.15
1y	18 (50)	1 (0.25-2)	9 (69)	2 (1-3)	.25

**Reflux increase
64%!**

Postoperative pH study	23 (64)	29 (83)	
Abnormal	14 (61)	7 (24)	<.01 (.007) (OR, 4.73) (95% CI, 1.28-19.21)

Treatment

Goals of therapy:

- Relief of obstructive symptoms (eg, dysphagia) by decreasing LES resting pressure
- Prevent progressive esophageal dilation
- Relief of other symptoms (eg, atypical chest pain)

Is the patient a candidate for surgery?

Achalasia subtypes	
100% failed peristalsis without PEP	Type I achalasia
100% failed peristalsis with PEP in >20% swallows	Type II achalasia
No normal peristalsis with >20% swallows with premature contractions	Type III achalasia



- **POEM** has been proposed as the procedure of choice for type III achalasia
- POEM can deliver a **longer myotomy** that is generally not possible with pneumatic dilation or the Heller procedure
- POEM can result in **severe GERD**(surgical myotomy often combined with fundoplication)

ASGE guideline:

Suggest POEM as the preferred treatment for management of patients with type III achalasia

Recommendations

1. Laparoscopic Heller myotomy, pneumatic dilation, and POEM are effective therapeutic modalities for patients with achalasia. Decision between these treatment options should depend on achalasia type, local expertise, and patient preference. ⊕ ⊕ ⊕ ⊕
2. We recommend against the use of botulinum toxin injection as definitive therapy for achalasia patients. Botulinum toxin injection may be reserved for patients who are not candidates for other definitive therapies. ⊕ ⊕ ⊕ ○
3. We suggest POEM as the preferred treatment for management of patients with type III achalasia. ⊕ ○ ○ ○
4. In patients with failed initial myotomy (POEM or laparoscopic Heller myotomy), we suggest pneumatic dilation or redo myotomy using either the same or an alternative myotomy technique (POEM or laparoscopic Heller myotomy). ⊕ ○ ○ ○
5. We suggest that patients undergoing POEM are counseled regarding the increased risk of postprocedure reflux compared with pneumatic dilation and laparoscopic Heller myotomy. Based on patient preferences and physician expertise, postprocedure management options include objective testing for esophageal acid exposure, long-term acid suppressive therapy, and surveillance upper endoscopy. ⊕ ⊕ ○ ○
6. We recommend pneumatic dilation compared with botulinum toxin injection for patients with achalasia. ⊕ ⊕ ⊕ ⊕
7. We recommend that laparoscopic Heller myotomy and pneumatic dilation are comparable treatment options for management of patients with achalasia types I and II, and the treatment option should be based on shared decision-making between the patient and provider. ⊕ ⊕ ⊕ ○
8. We suggest that POEM and laparoscopic Heller myotomy are comparable treatment options for management of patients with achalasia types I and II, and the treatment option should be based on shared decision-making between the patient and provider. ⊕ ⊕ ○ ○

Summary

- For type III achalasia
 - Pneumatic balloon dilation was not recommended
 - POEM provides effective and durable palliation for type III achalasia
 - The disadvantage of POEM: higher risk of GERD
 - Compared with Heller procedure, there is no high level evidence currently

Thanks for Your Attention