Case Discussion

Fellow 1 翁偉銘
Supervisor 連漢仲 醫師

Patient Profile

- ID: 2247709E
- Gender: female
- Age: 55 year-old
- Smoking: nil
- Family history: nil

Chief Complaint

- Persistent acid regurgitation, heartburn with belching and postprandial satiation for 9 months

Past Medical History

- Chronic hepatitis B infection
- Solitary pulmonary nodule, LLL, s/p VATS wedge resection of LLL on 2020/2/21, pathology resulted chronic inflammation

Course

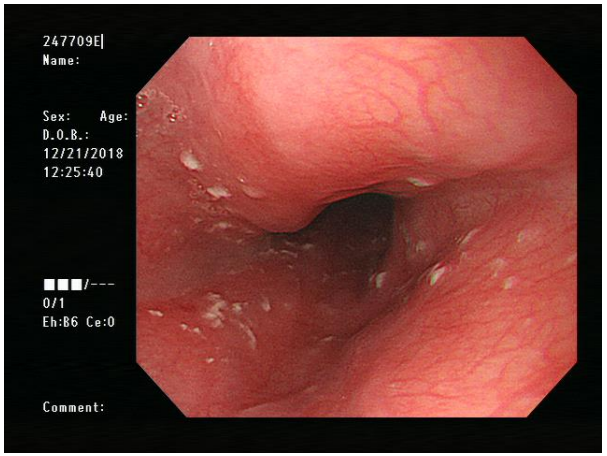
2018

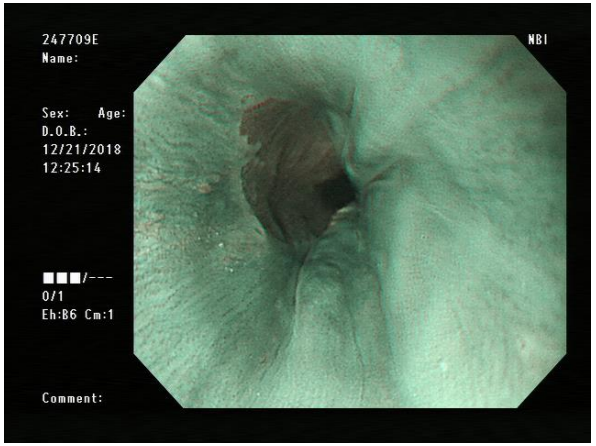
acid regurgitation and heartburn with belching and postprandial satiation refractory to PPI

2018.12.21

EGD:

1. Esophageal Candidiasis
2. Reflux esophagitis, LA grade B





Course

2018

acid regurgitation and heartburn with belching and postprandial satiation

2018.12.21

EGD:
1. Esophageal Candidiasis
2. Reflux esophagitis, LA grade B

refractory to PPI

2020.12.01

Hospital A, EGD:
1. Barrett's esophagus, C2M2
2. Hiatal hernia. Hill's grade II

Course

2021.01.13

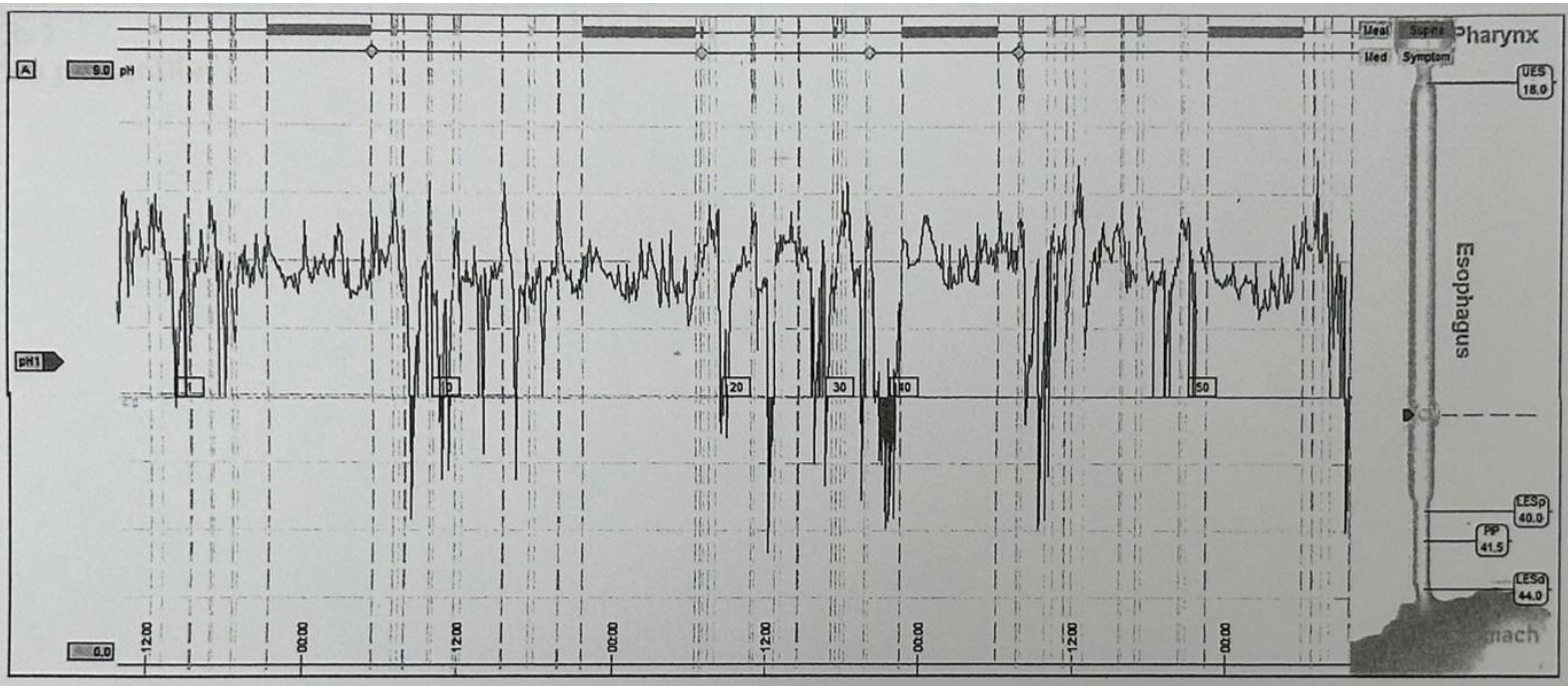
s/p ARMA and esophageal RFA at Hospital A,

2022.02.17

reflux symptom relapsed, visited Hospital B.
s/p Bravo at Hospital B.

- DeMeester score 17.5, day3 :33.9(normal <14.7)
- acid exposure time 5.7%, day3 :12.9%(normal <4%)
- SI/SAP:0/0

Bravo test



REFLUX MONITORING SUMMARY

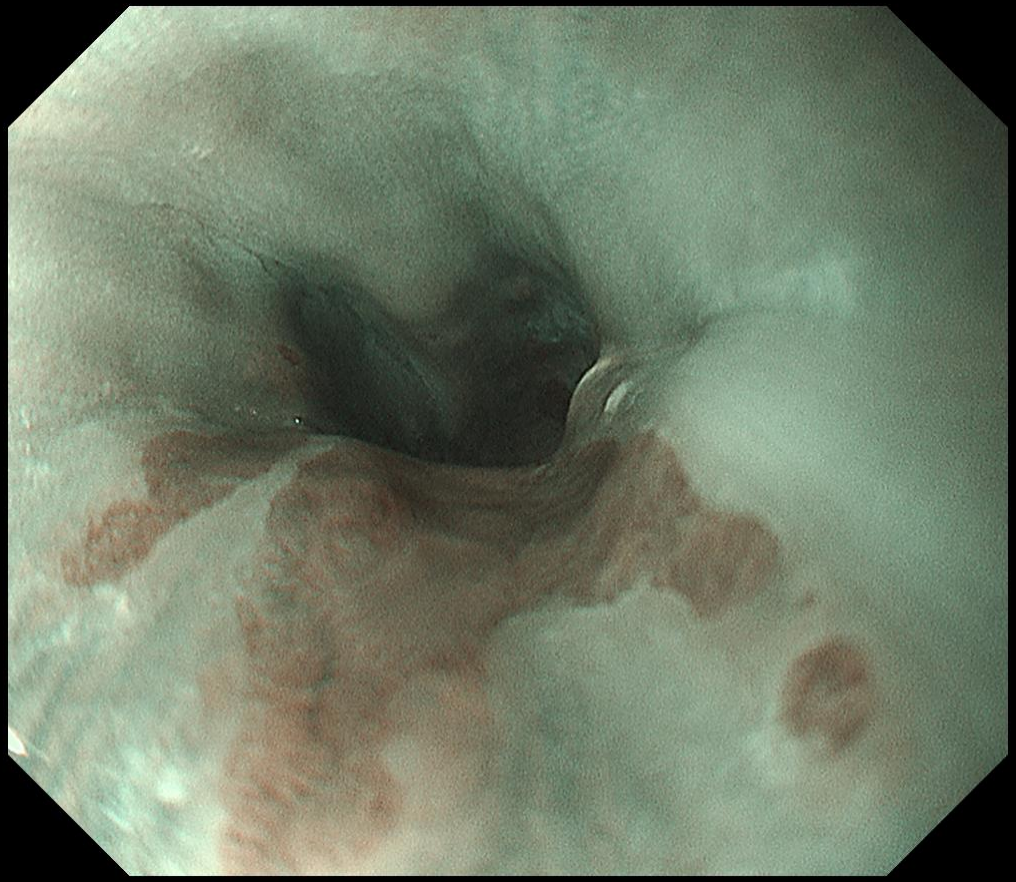
Acid Exposure Summary	Total	Normal	Upright	Normal	Supine	Normal
Acid exposure time (%)	5.7		9.2		0.0	
Longest reflux (min)	26.8		26.8		N/A	
DeMeester Score	17.5					

Symptom Association Summary	Heartburn	Cough
Number of occurrences	1	2
Symptom index for reflux (SI)	0.0	0.0
Symptom association prob. (SAP)*	0.0	0.0

Course

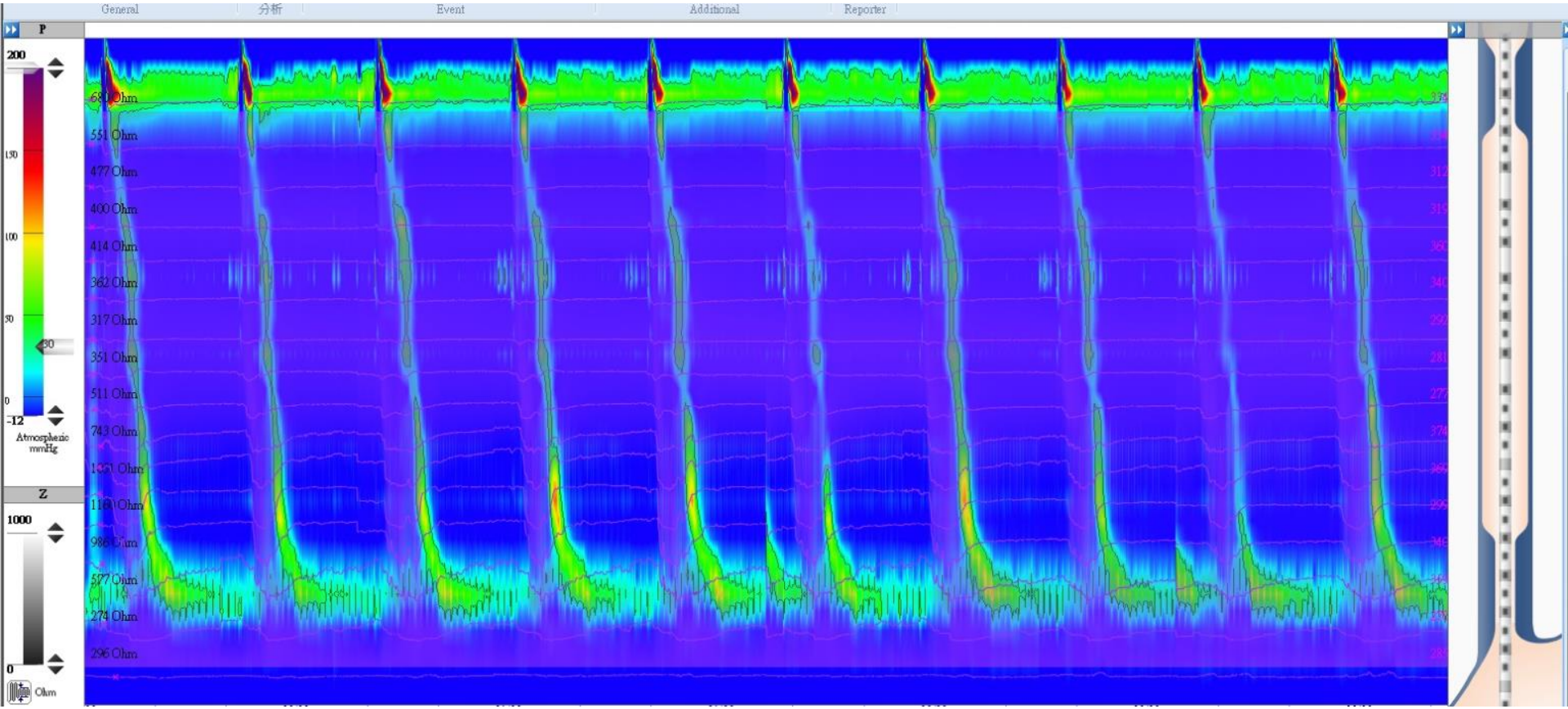
2021.01.13	s/p ARMA and esophageal RFA at Hospital A
2022.02.17	reflux symptom relapsed, visited Hospital B. s/p Bravo at Hospital B.
2022.03.23	s/p Stretta at Hospital B.
2024	Still acid reflux, non cardiac chest pain Visited VGHTC

EGD(2024/03/22)



Suspect Barrett’s esophagus

HRM upright

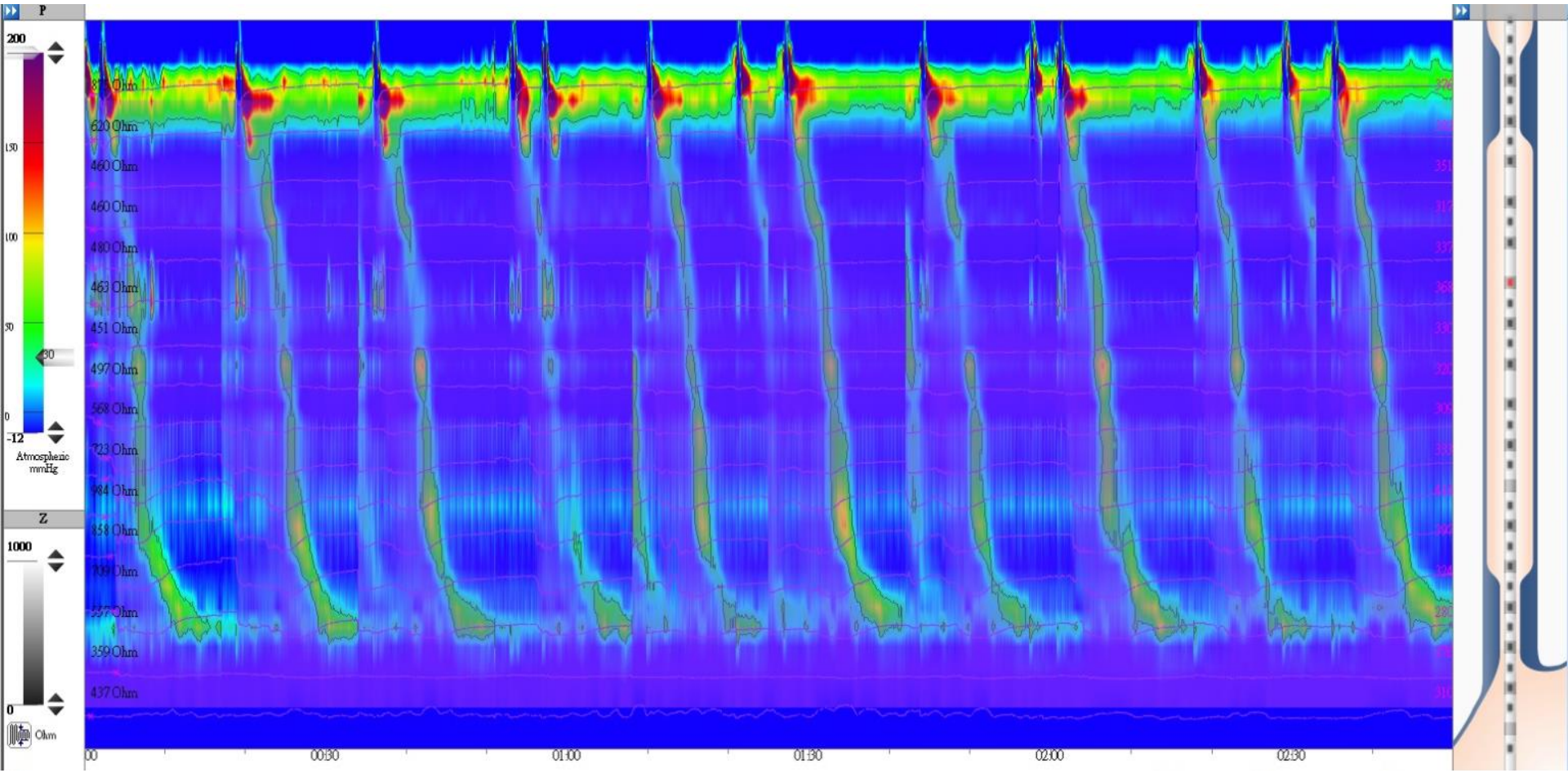


IRP4s:36.1mmHg(<15)

DL:5.6s(>4.5)

DCI:509mmHg.s.cm(450-8000)

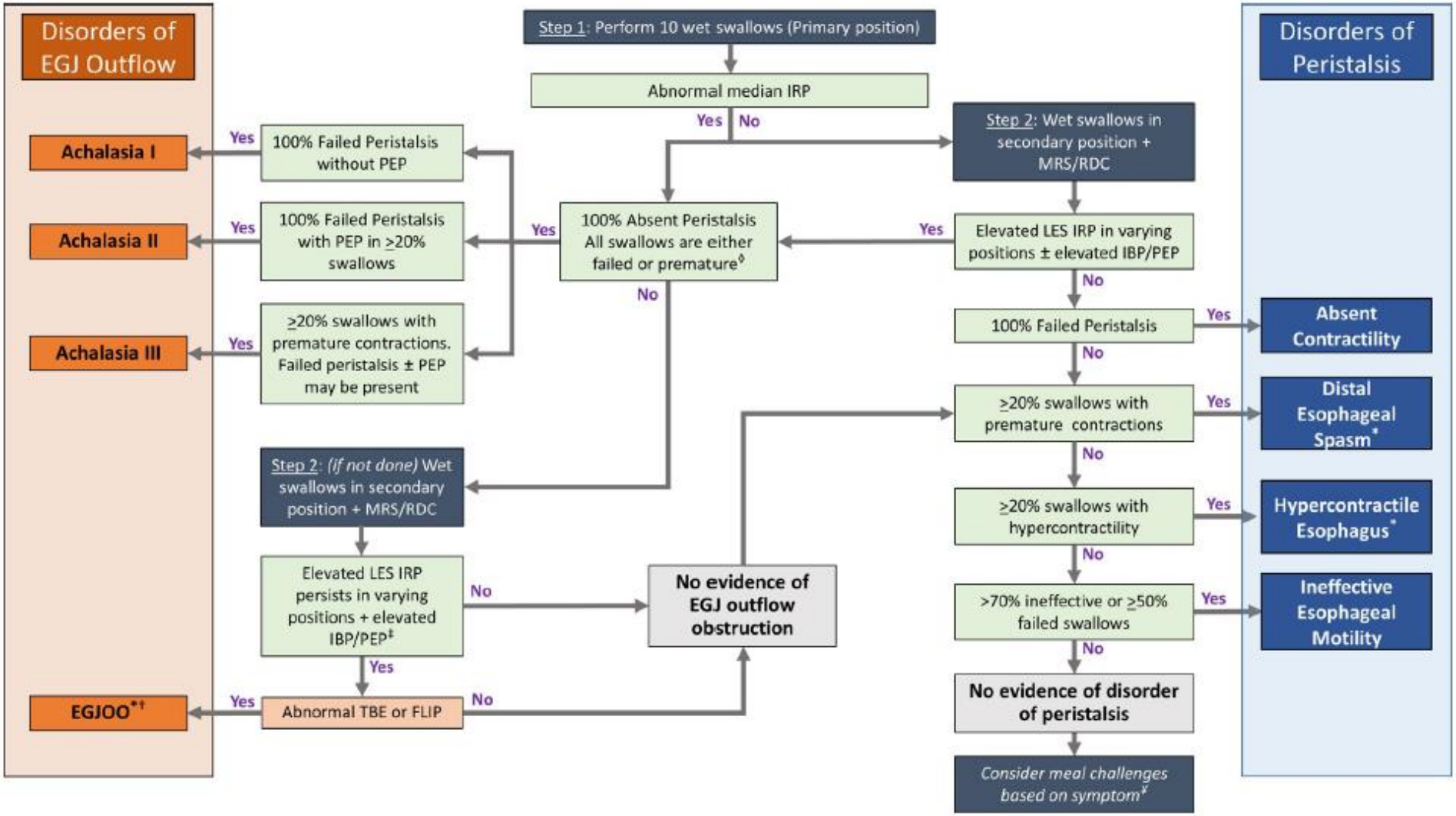
HRM supine



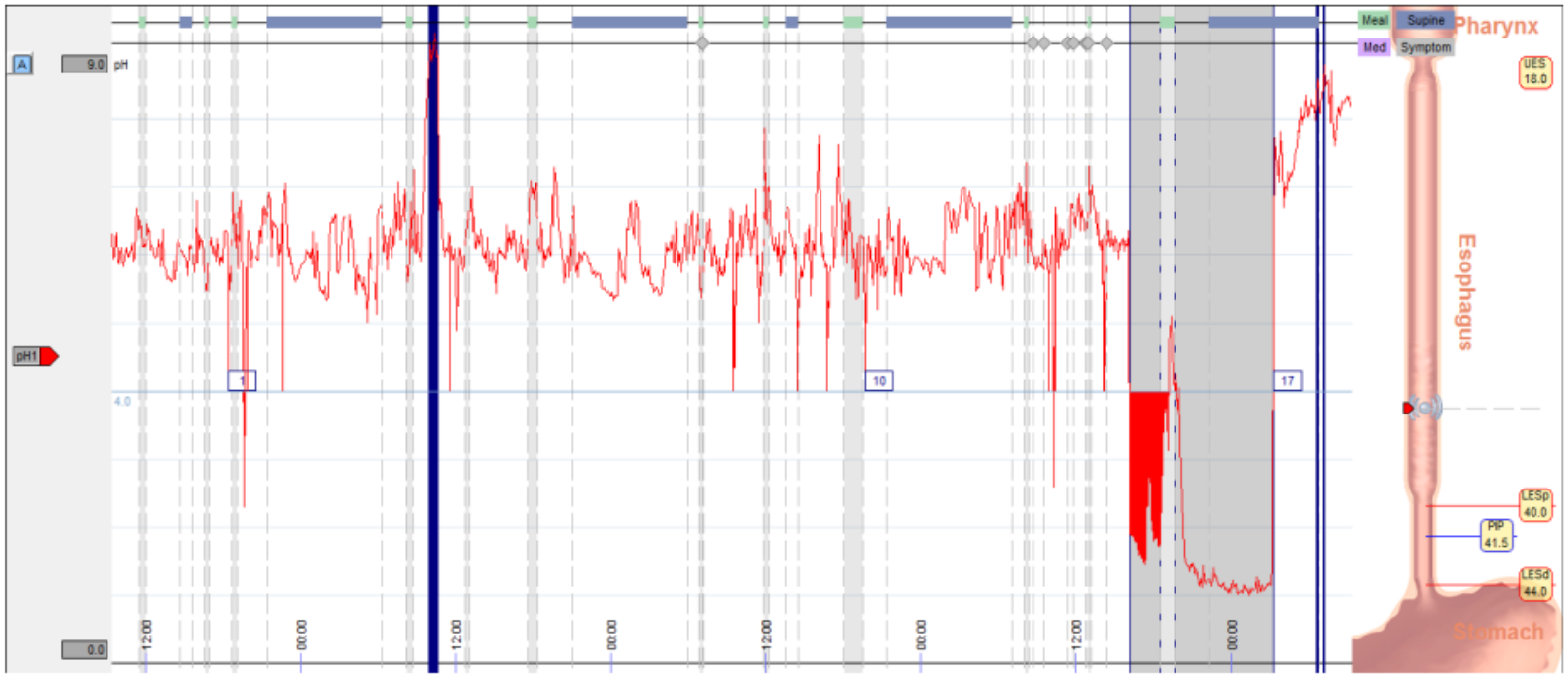
IRP4s:30mmHg(<21)

DL:6.3s(>4.5)

DCI:593mmHg.s.cm(450-8000)


Disorders of EGJ Outflow
Step 1: Perform 10 wet swallows (Primary position)
Abnormal median IRP
Yes
No
Step 2: Wet swallows in secondary position + MRS/RDC
Disorders of Peristalsis
Achalasia I
Yes
100% Failed Peristalsis without PEP
Achalasia II
Yes
100% Failed Peristalsis with PEP in ≥20% swallows
Yes
100% Absent Peristalsis All swallows are either failed or premature◊
Yes
Elevated LES IRP in varying positions ± elevated IBP/PEP
No
Achalasia III
Yes
≥20% swallows with premature contractions. Failed peristalsis ± PEP may be present
100% Failed Peristalsis
Yes
Absent Contractility
No
≥20% swallows with premature contractions
Yes
Distal Esophageal Spasm*
No
Step 2: (if not done) Wet swallows in secondary position + MRS/RDC
≥20% swallows with hypercontractility
Yes
Hypercontractile Esophagus*
No
Elevated LES IRP persists in varying positions + elevated IBP/PEP‡
No
No evidence of EGJ outflow obstruction
>70% ineffective or ≥50% failed swallows
Yes
Ineffective Esophageal Motility
No
Yes
EGJOO*†
Yes
Abnormal TBE or FLIP
No
No evidence of disorder of peristalsis
Consider meal challenges based on symptom¥

Bravo test



D1 D2 D3 D4

REFLUX MONITORING SUMMARY

Acid Exposure Summary	Total	Normal	Upright	Normal	Supine	Normal
Acid exposure time (%)	0.4		0.5		0.1	
Longest reflux (min)	5.7		5.7		1.2	
DeMeester Score	2.2					

Symptom Association Summary	Symptom
Number of occurrences	7
Symptom index for reflux (SI)	0.0
Symptom association prob. (SAP)*	0.0

Bravo test

	96Hr	Day1	Day2	Day3	Day4
No. of reflux(<80)	16	5	1	4	6
Total % time(<4.2%)	0.4	0.4	0	0.3	1.1
Upright % time(<6.3%)	0.5	0.6	0	0.3	1.5
Supine % time(<1.2%)	0.1	0.1	0	0.2	0.1
Demeester score(<14.7)	2.2	1.7	0.4	1.4	5
Symptom index (SI)(<50%)	0	N/A	N/A	0	0
SAP(<95%)	0	N/A	N/A	0	0

MII-pH monitor

- Acid-distal esophagus
  - Acid %time distal

  [Total] 0.7 (<4.2%) [Upright] 1.3 (<6.3%) [Supine] 0.0 (<1.2%)
  - No. of reflux distal

  [Total] 33 (<80) [Upright] 30 [Supine] 3
  - Reflux clearance time (sec)
  - Symptom index

  [Total] 0.0% (<50%)
  - Symptom association probability

  [Total] 0.0% (<95%)
  - DeMeester score

  [Total] 2.4 (<14.7)

MII-pH monitor

■Acid-pharynx

■Acid %time pharynx

[Total] 0.0 (<1.3%) [Upright] 0.0 (<1.3%) [Supine] 0.0 (<0.0%)

■No. of pharyngeal acid reflux (PAR)

[Total] 0 (<1) [Upright] 0 (<1) [Supine] 0 (<1)

[SYMPTOM-REFLUX ASSOCIATION]

■Chest pain

No. of symptoms related to acid reflux 0

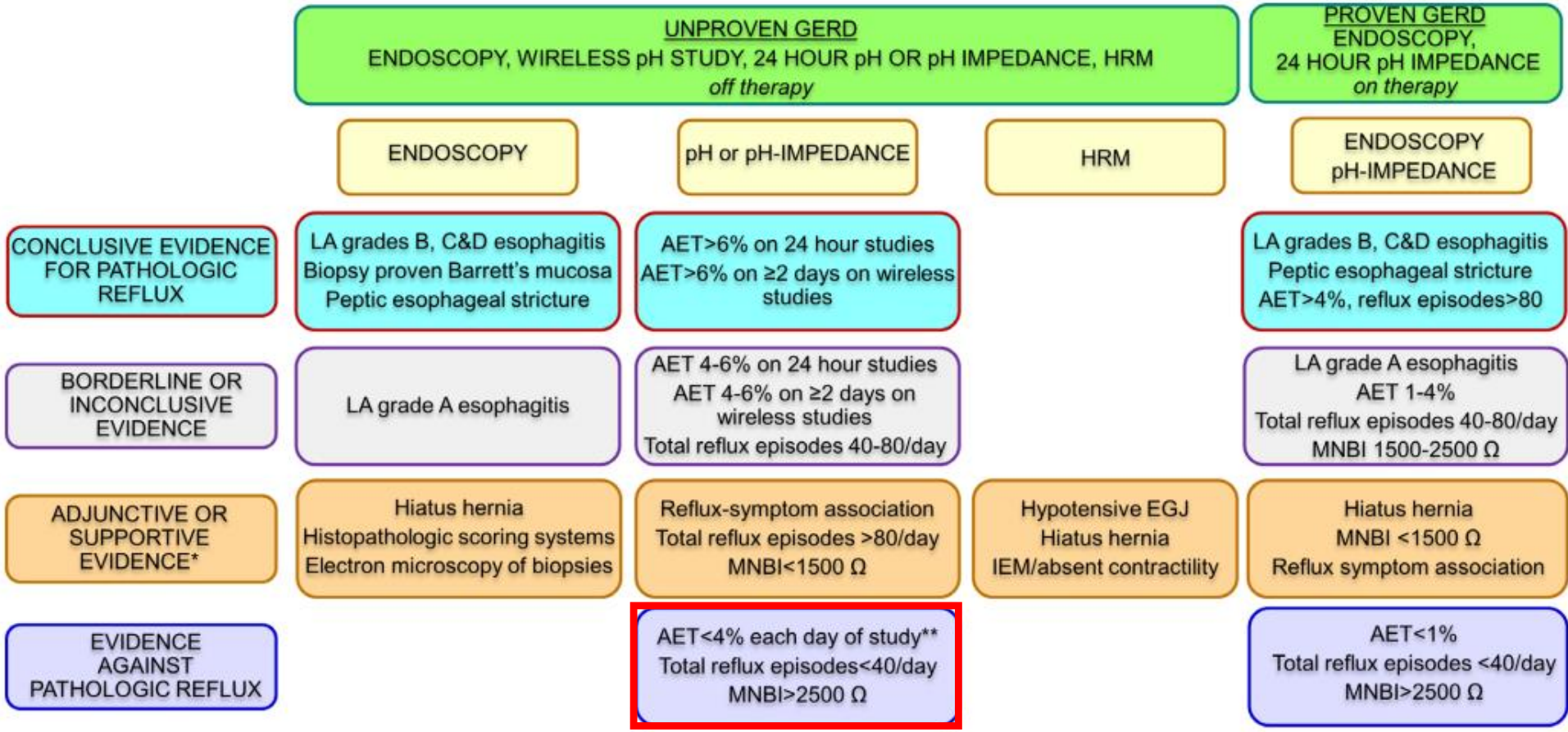
No. of symptoms not related to reflux 2

Symptom index (<50%) 0.0%

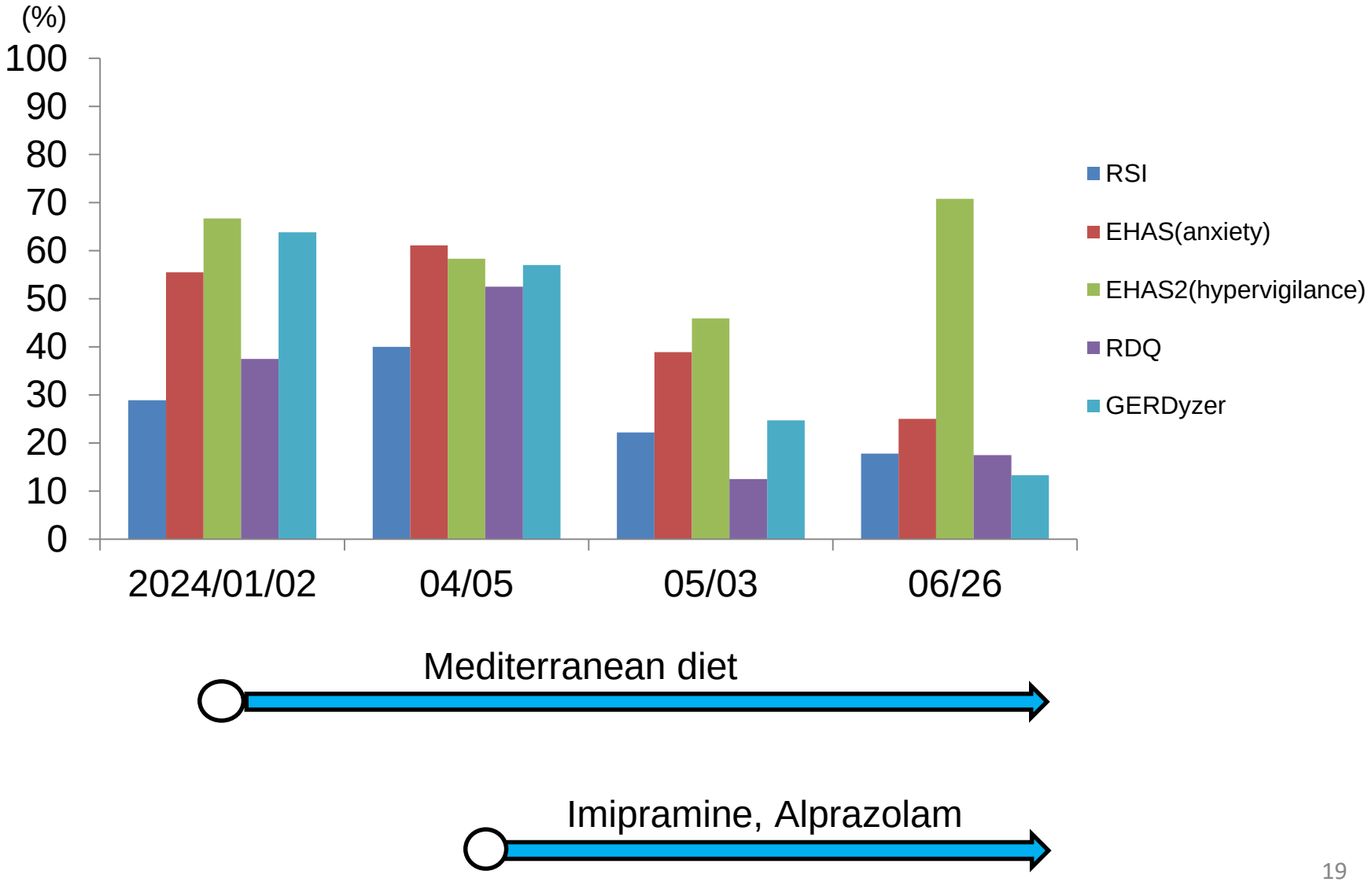
[Note]

MNBI:4.83 kOhm

Lyon consensus 2.0



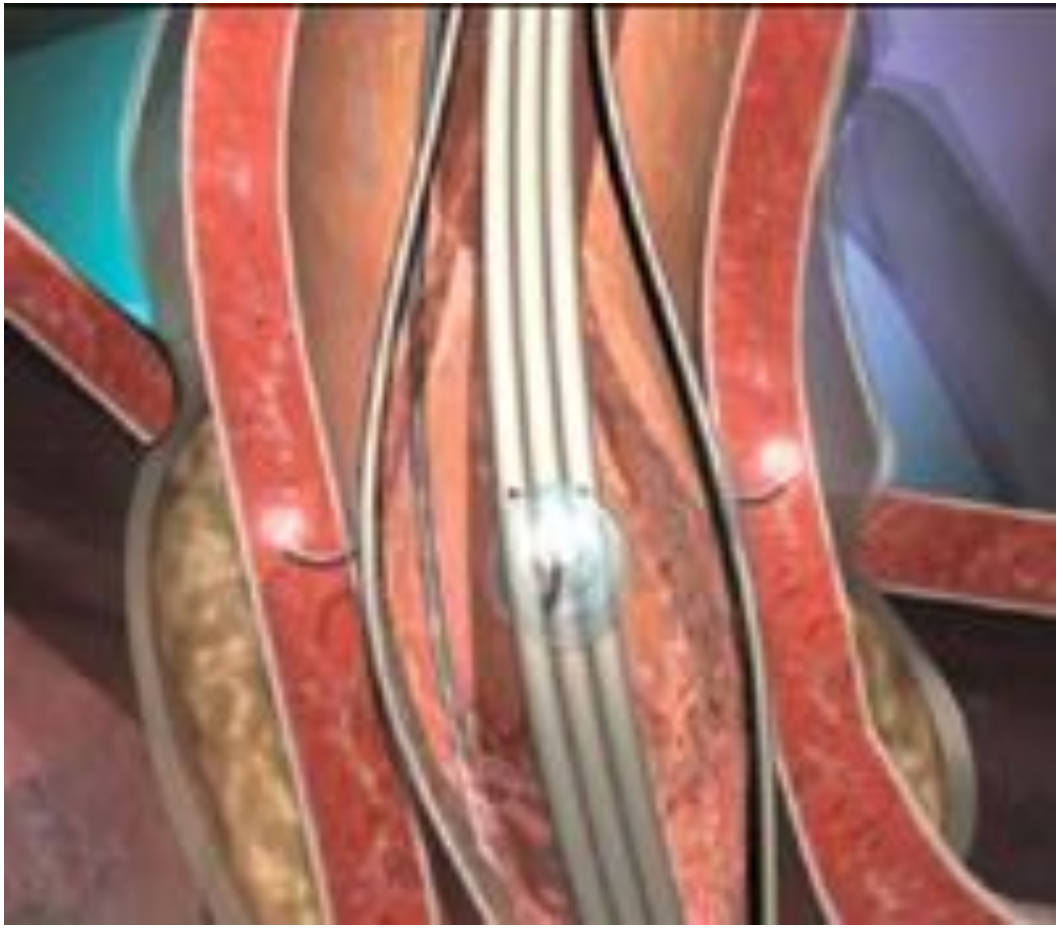
Patient reported outcome

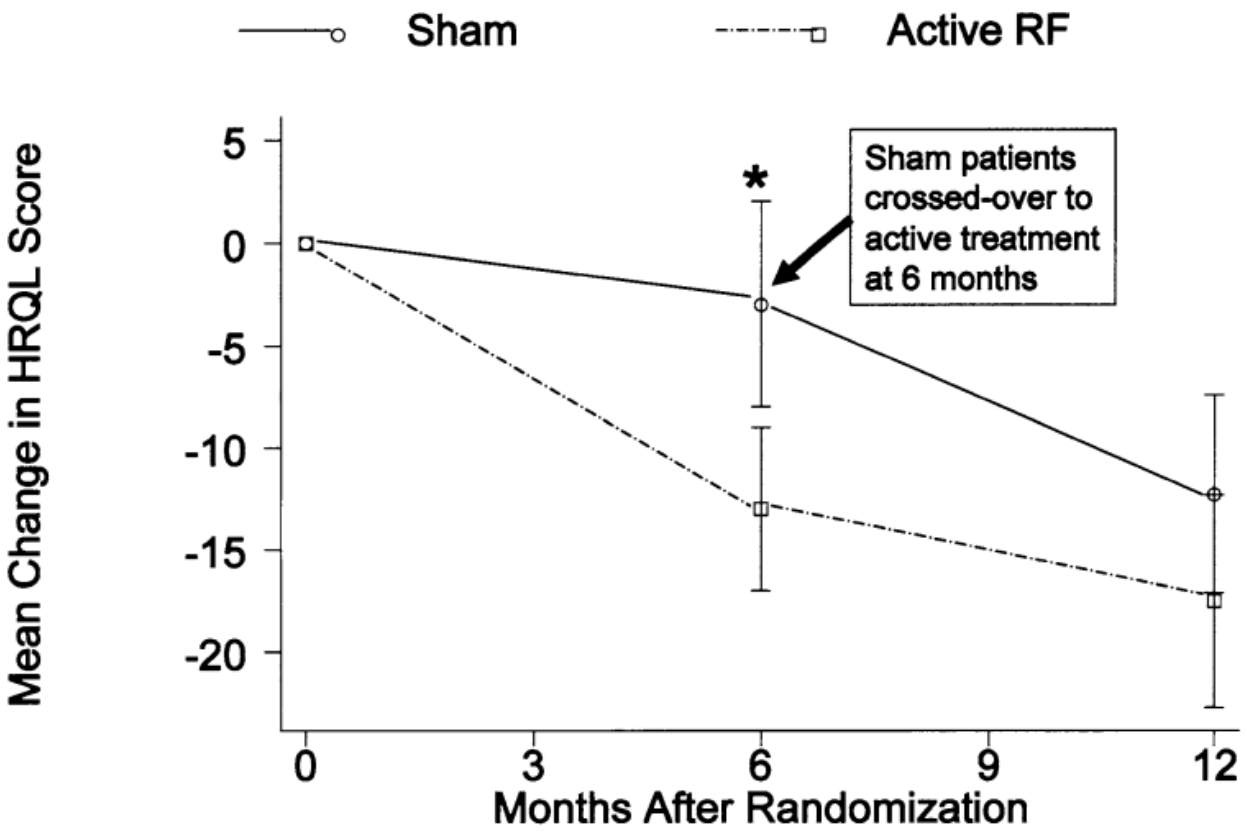


Diagnosis

- Functional heartburn
- Suspect refractory GERD, s/p ARMA and esophageal RFA in Hospital A on 2020.12.01, s/p Stretta in Hospital B on 2022.03.23

Stretta procedure for refractory GERD





- Significantly improved GERD symptoms and quality of life compared with a sham procedure
- Did not decrease esophageal acid exposure or medication use at 6 months.

Corley DA, et al. , Improvement of gastroesophageal reflux symptoms after radiofrequency energy: a randomized, sham-controlled trial. Gastroenterology, 2003. 125(3): p. 668–76.

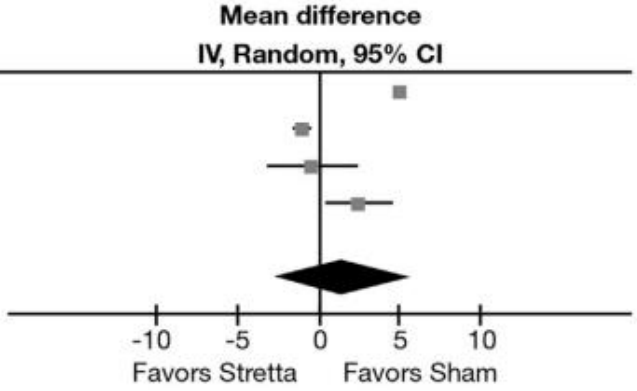
Fasiha Kanwal, Section Editor

No Evidence for Efficacy of Radiofrequency Ablation for Treatment of Gastroesophageal Reflux Disease: A Systematic Review and Meta-Analysis

A

Study or subgroup	Stretta Mean	Stretta SD	Stretta Total	Sham Mean	Sham SD	Sham Total	Weight	Mean difference IV, Random, 95% CI
Arts, 2012	3.75	0.21	11	-1.25	0.3	11	26.1%	5.00 [4.78, 5.22]
Aziz, 2010	-2.7	0.6	12	-1.7	0.5	12	26.0%	-1.00 [-1.44, -0.56]
Corley, 2003	0.4	7.7	35	0.8	2.7	29	23.4%	-0.40 [-3.13, 2.33]
Coron, 2008	-0.8	0.8	23	-3.3	4.6	20	24.5%	2.50 [0.46, 4.54]
Total (95% CI)			**81**			**72**	**100.0%**	**1.56 [-2.56, 5.69]**

Heterogeneity: Tau² = 16.96; Chi² = 581.99, df = 3 (*P* < .00001); I² = 99%
Test for overall effect: Z = 0.74 (*P* = .46)



B

Study or subgroup	Stretta Mean	Stretta SD	Stretta Total	Sham Mean	Sham SD	Sham Total	Weight	Mean difference IV, Random, 95% CI
Arts, 2012	-1.4	0.7	11	-0.7	0.1	11	34.5%	-0.70 [-1.12, -0.28]
Aziz, 2010	-4.6	1.3	12	-1.8	0.6	12	33.5%	-2.80 [-3.61, -1.99]
Corley, 2003	-3.2	3.6	35	-5.9	0.3	29	32.0%	2.70 [1.50, 3.90]
Total (95% CI)			**58**			**52**	**100.0%**	**-0.32 [-2.66, 2.02]**

Heterogeneity: Tau² = 4.09; Chi² = 56.44, df = 2 (*P* < .00001); I² = 96%
Test for overall effect: Z = 0.26 (*P* = .79)

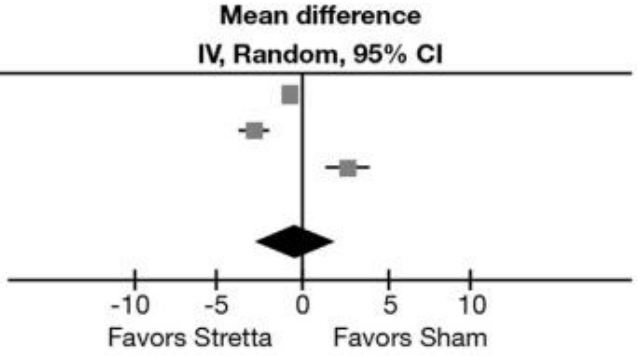
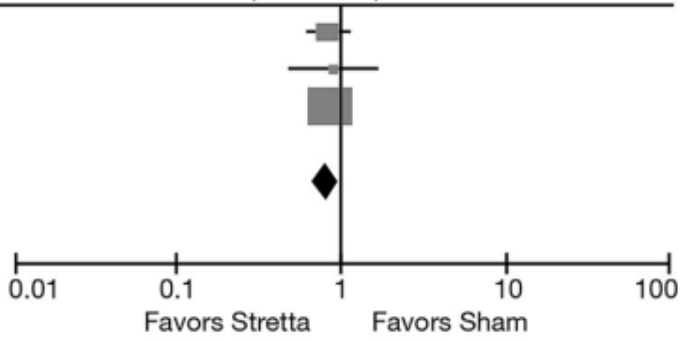


Figure 2. Forest plots of comparison: Stretta vs sham for GERD. (*A*) Outcome: mean (%) time pH less than 4 over 24 hours. (*B*) Outcome: mean LES pressure. df, degrees of freedom; IV, inverse variance.

A

Study or subgroup	Stretta Events	Stretta Total	Sham Events	Sham Total	Weight	Risk ratio M-H, Random, 95% CI
Aziz, 2010	10	12	12	12	26.3%	0.84 [0.63, 1.12]
Corley, 2003	13	30	10	21	5.9%	0.91 [0.50, 1.67]
Coron, 2008	20	23	20	20	67.9%	0.88 [0.73, 1.05]
Total (95% CI)		**65**		**53**	**100.0%**	**0.87 [0.75, 1.00]**
Total events	43		42			

Heterogeneity: Tau² = 0.00; Chi² = 0.09, df = 2 (*P* = .95); I² = 0%
Test for overall effect: Z = 1.89 (*P* = .06)



B

Study or subgroup	Stretta Mean	Stretta SD	Stretta Total	Sham Mean	Sham SD	Sham Total	Weight	Mean difference IV, Random, 95% CI
Aziz, 2010	-15.2	0.9	12	-5.5	1.1	12	48.2%	-9.32 [-12.31, -6.33]
Corley, 2003	-12	4.1	35	-4	6.7	29	51.8%	-1.46 [-2.01, -0.90]
Total (95% CI)			**47**			**41**	**100.0%**	**-5.24 [-12.95, 2.46]**

Heterogeneity: Tau² = 29.71; Chi² = 25.64, df = 1 (*P* < .00001); I² = 96%
Test for overall effect: Z = 1.33 (*P* = .18)

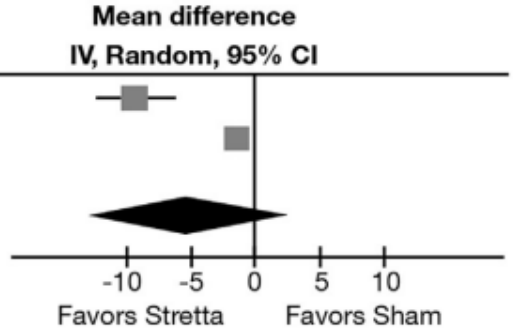


Figure 3. (*A*) Forest plot of comparison: Stretta vs sham for GERD; outcome: ability to stop PPI. (*B*) Outcome: HRQOL after being off medication. M-H, Mantel Haenszel; IV, inverse variance.

No difference between Stretta and sham or management with PPI in patients with GERD for the outcomes of mean (%) time the pH was less than 4 over a 24-hour time course, LESP, ability to stop PPIs, or HRQOL

Lipka S, Kumar A, and Richter JE, No evidence for efficacy of radiofrequency ablation for treatment of gastroesophageal reflux disease: a systematic review and meta-analysis. Clin Gastroenterol Hepatol, 2015. 13(6): p. 1058–67.e1

REVIEW

Systematic review and meta-analysis of controlled and prospective cohort efficacy studies of endoscopic radiofrequency for treatment of gastroesophageal reflux disease

Significantly improves subjective and objective clinical endpoints, except LES basal pressure

Fass R, et al. , Systematic review and meta-analysis of controlled and prospective cohort efficacy studies of endoscopic radiofrequency for treatment of gastroesophageal reflux disease. Surg Endosc, 2017. 31(12): p. 4865–4882

CME

ACG Clinical Guideline for the Diagnosis and Management of Gastroesophageal Reflux Disease

4. Because data on the efficacy of radiofrequency energy (Stretta) as an antireflux procedure is inconsistent and highly variable, we cannot recommend its use as an alternative to medical or surgical antireflux therapies (conditional recommendation, low level of evidence).

Katz PO, Dunbar KB, Schnoll-Sussman FH, Greer KB, Yadlapati R, Spechler SJ. ACG Clinical Guideline for the Diagnosis and Management of Gastroesophageal Reflux Disease. Am J Gastroenterol. 2022 Jan 1;117(1):27-56

Thanks for Your Attention

討論

莊政諺主任:

1. 請翁醫師再次說明Stretta術式
2. 任何疾病在進行治療前最好要有明確的診斷，尤其是治療方式為侵入性、會造成永久影響的時候