2024 /08/23 Case report

Case report:

A 47-year-old female post Sleeve gastrectomy with hoarseness for 2 years.

Chief complaint:

Hoarseness for 2 years.

Date: 2024/08/23

Presenter: 陳寬智 醫師

Supervisor: 連漢仲 醫師

Patient data

- Chart No: 2393867C
- Name: 鄭ＯO
- Age: 47 y/o
- Gender: Female
- Family history: Nil
- Height/ Weight: 170 cm / 59.8kg, BMI:20.6

Medical history

- 1. L-spine HIVD with spinal stenosis s/p operation on 2023/10/19 and 2024/03/21.
- 2. Sleeve gastrecotmy over 10 years ago in A Hospital

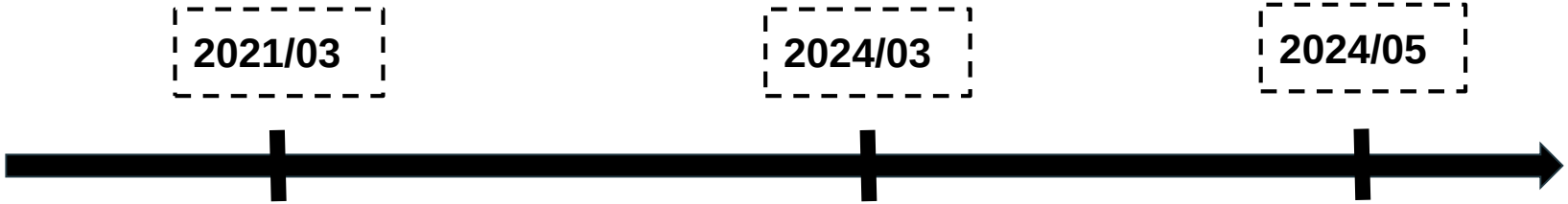
Drug history

- Esopmeprazole tab 40mg 1# BID
- Celebrex 200mg 1# QD
- Tramacet 1# BID
- Cobamamide 0.5mg 1# BID
- Stilnox 1# HSPRN

Personal history

- Smoke：no
- Alcohol：social drinks, 2-3 times/month
- Betel nuts：no
- Allergy history：no
- Family history ：not contributory
- Occupation: Housewife

Present illness



GI OPD:
- **Vomiting with bile content after intake.**
- **UGI scope**
  - Hiatal Hernia. Gr. IV.
  -GERD LA Gr. B.

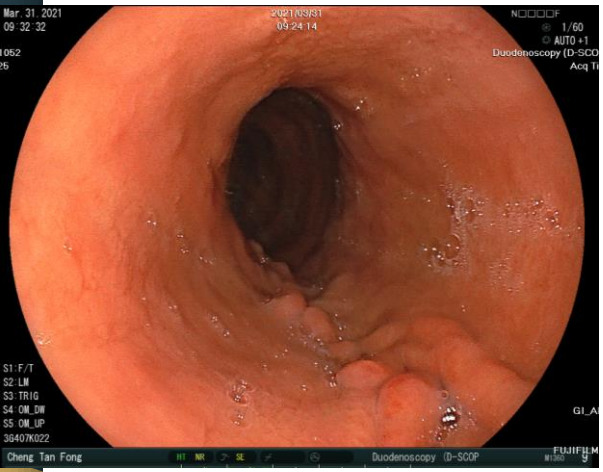
*** Under PPI since 2021/03**

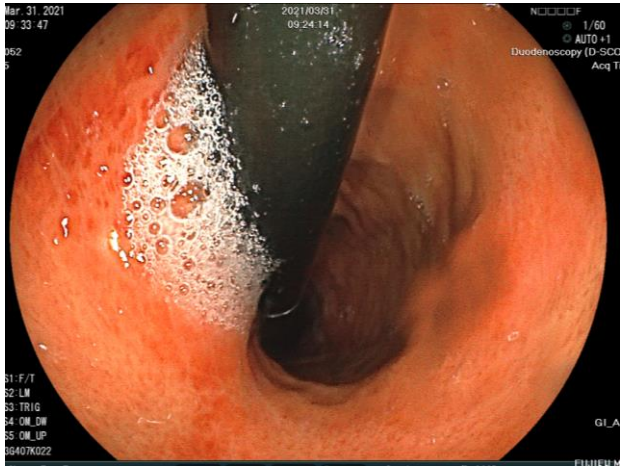
ENT OPD
- **Hoarseness after URI episode**
- **Fiberscope:**
- **Bil. vocal fold edema and pseudomembrane**

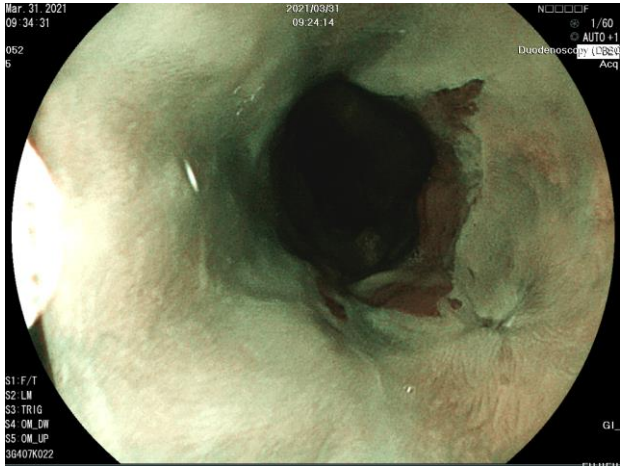
*** Tx with Boren-C, prednisolone**

GI OPD
- **Hoarseness, acid reflux persisted**
- **Suggest Off PPI 24 hrs MIIPH testing**

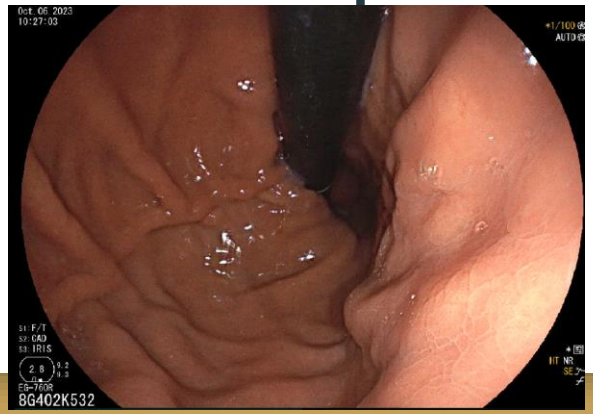
2021/03 UGI scope. Post sleeve gastrectomy, Hiatal hernia.

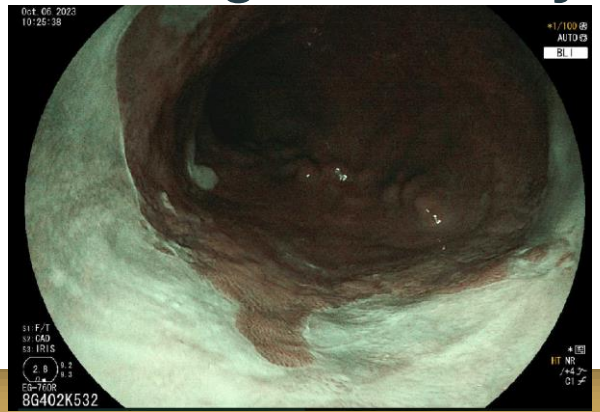






2023/10 UGI scope. Post sleeve gastrectomy, Hiatal hernia.





2023/10UGI scope.Biopsy result.

Pathologic diagnosis:
1. Stomach, antrum, "A", endoscopic biopsy --- Chronic follicular gastritis.
2. Esophagocardiac junction, "B", endoscopic biopsy --- Chronic inflammation of gastric mucosa. No intestinal metaplasia seen.

Ancillary study for diagnosis:
Giemsa stain for Helicobacter Pylori identification done for both specimens.

Prognostic and predictive factor:
No Helicobacter-like microorganism found in both specimens.

Gross description:
The specimen consists of 1) a piece of tan soft tissue, 0.2x0.2x0.2 cm, labeled as "stomach, antrum". 2) a piece of tan soft tissue, 0.2x0.2x0.2 cm, labeled as "esophagocardiac junction". All for section: A) specimen A B) specimen B.

Microscopic description:
Section of specimen A shows gastric mucosa with
1. Neutrophils activity- Absent.
2. Chronic inflammation/Mononuclear cells infiltration- Mild.
3. Atrophy of glands- Absent.
4. Intestinal metaplasia- Absent.
Section of specimen B shows gastric mucosa with chronic inflammatory cells infiltration. No intestinal metaplasia seen.
#T-56000_2 #M-43000_2 0 1340 000000

2024/06 High Resolution Manometry

Supine

LES

Upper border	41.2 cm
IRP 4 s	5.9 mmHg

患者號碼: 2393867C

Scoring parameter percentages4

Scoring 4	
Normal	30 %
Ineffective	70 %
Failed contraction	40 %
Premature	0 %
Hyper	0 %
Fragmented	0 %

Chicago classification 4 *

Normal

Upright

LES

Upper border	41.4 cm
IRP 4 s	3.4 mmHg
Intraabdominal length	1.6 cm

Scoring parameter percentages4

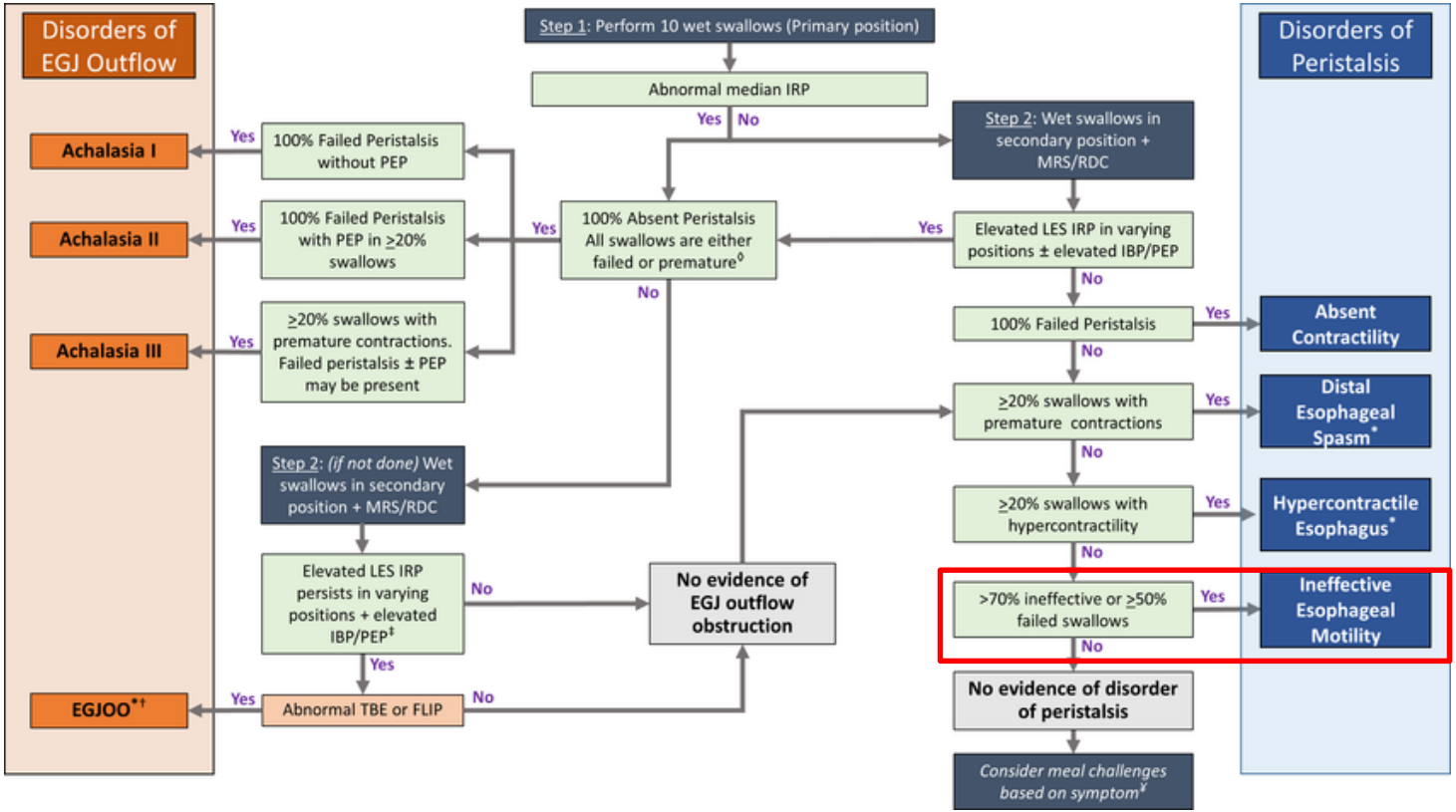
Scoring 4	
Normal	30 %
Ineffective	70 %
Failed contraction ≥ 50%	60 %
Premature	0 %
Hyper	0 %
Fragmented	0 %

Chicago classification 4 *

Ineffective esophageal motility

Conclusions: Ineffective esophageal motility (IEM)

2024/06 High Resolution Manometry



Neurogastroenterol Motil. 2021 January ; 33(1): e14058. doi:10.1111/nmo.14058.

2024/06/04 Bernstein test. Hypersensitivity.

Result:

First perfusion of 30 ml of normal saline for 5 min.
At (1) min (10) sec, (14) ml of normal saline produced
■Regurgitation

Second perfusion of 30 ml of 1N HCL for 5 min.
At (0) min (14) sec, (2) ml of 1N HCL produced
■Regurgitation
■Chest pain
■Other: hoarseness

Are the symptoms resemble to the patient's previous complaints?
■Yes

Conclusions:
■Hypersensitivity

Note: VAS:3/3(saline/HCl), PRO regurgitation discomfort:5.

2023/06 MIIPH

REFLUX MONITORING SUMMARY

[pH]Acid Exposure Summary	Total	Normal	Upright	Normal	Supine	Normal
Ch 1 Prox.						
Acid exposure time (%)	0.0		0.0		0.0	
Longest reflux (min)	N/A		N/A		N/A	
Ch 2 Dist.						
Acid exposure time (%)	17.7	<4.2	22.6	<6.3	12.6	<1.2
Longest reflux (min)	59.8	<9.2	27.8		59.8	
DeMeester Score	62.3	<14.7				

[pH]Symptom Analysis	Regurg.
Number of occurrences	7
Ch 1 Prox.	
Symptoms related to reflux	0
Symptoms not related to reflux	7
Reflux periods	0
Symptom Index (SI)	0.0
Symptom Association Prob. (SAP)*	66.8
Ch 2 Dist.	
Symptoms related to reflux	7
Symptoms not related to reflux	0
Reflux periods	156
Symptom Index (SI)	100.0
Symptom Association Prob. (SAP)*	99.9

* Probability that symptom and reflux are not associated solely by chance, (>95% is significant)

*AET: 17.7 (<4.2%) [Upright] 22.6 (<6.3%) [Supine] 12.6 (<1.2%)

*DeMeester score [Total] 62.3 (<14.7)

*TNR:156 (<80) [Upright] 143 [Supine] 13

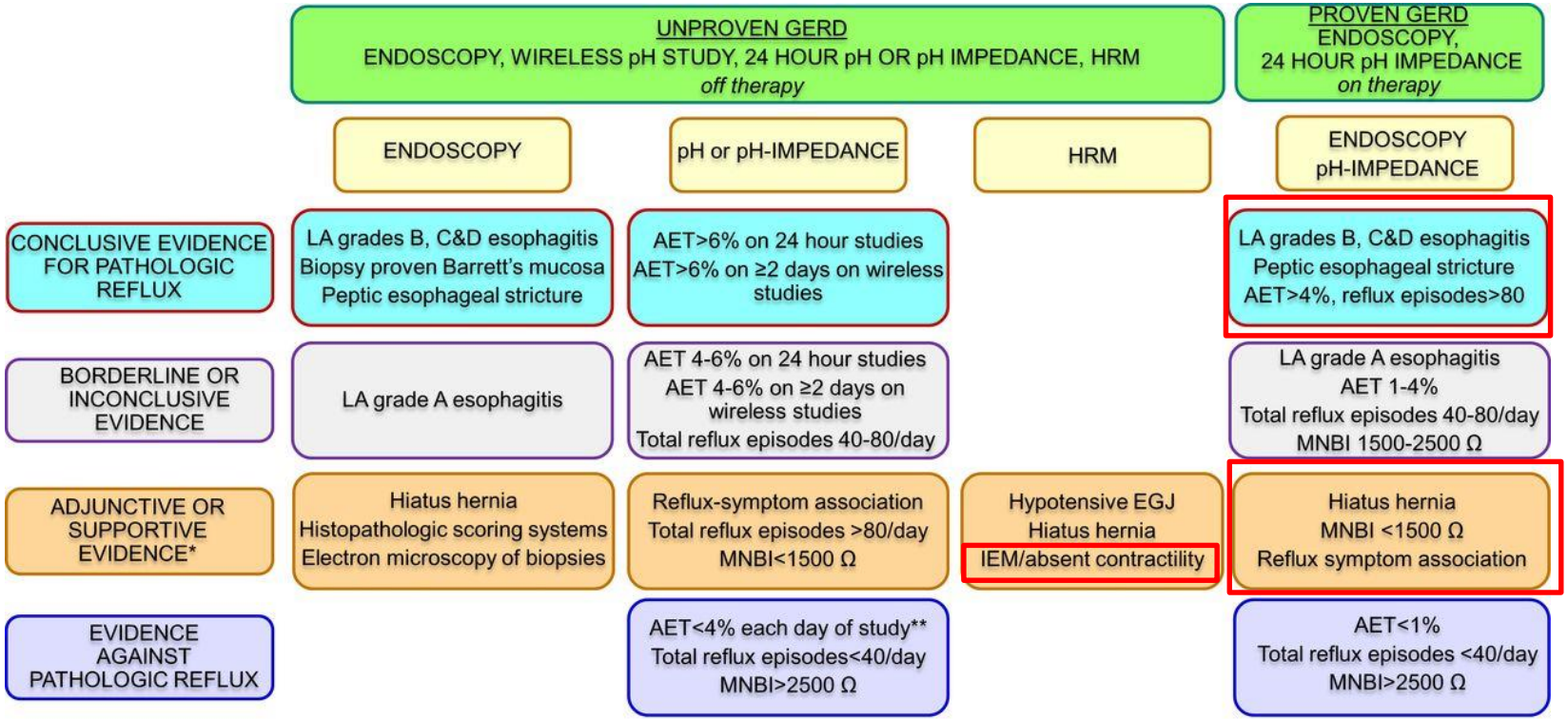
*MNBI: 590 ohm (<1500 ohm)

2024/06 MIIPH

[Z]Symptom Association Summary	Regurg.
Number of occurrences	7
Acid reflux	7
Weakly acidic reflux	0
Non-acid reflux	0
All reflux	7
Symptom Index (SI)	100.0
Symptom Association Probability (SAP)	100.0

*Symptom Index: 100%.
*Symptom Asscociation Probability: 100%

2024/06 MIIPH



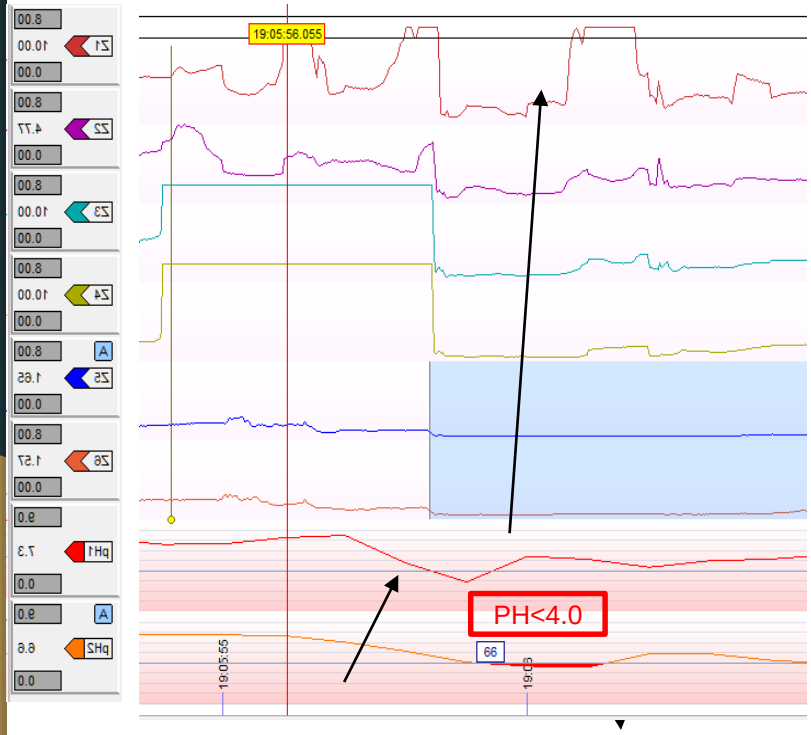
* factors that increase confidence for presence of pathologic reflux when evidence is otherwise borderline or inconclusive

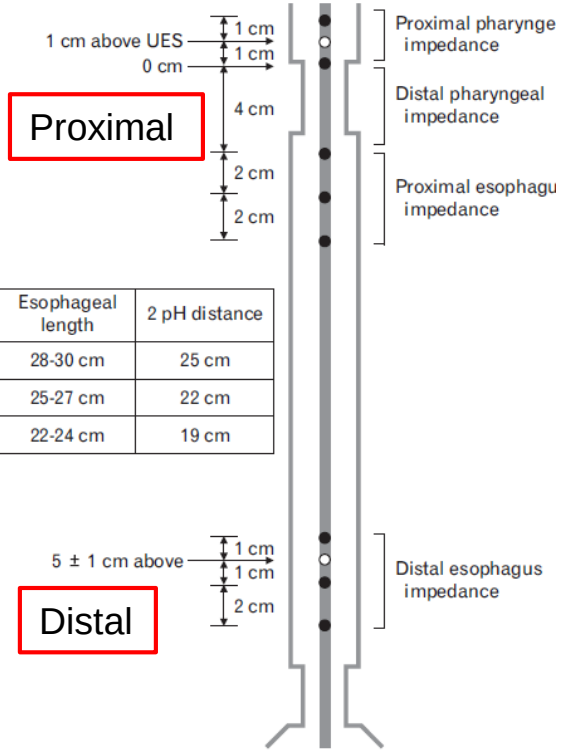
** wireless pH monitoring: <4% on all days; pH-impedance: all criteria should be met.

Updates to the modern diagnosis of GERD: Lyon consensus 2.0 Correspondence to Professor C Prakash Gyawali. 2023

2024/06 MIIPH LPR episode 1

Ref : J Neurogastroenterol Motil, Vol. 29 No. 1 January, 2023

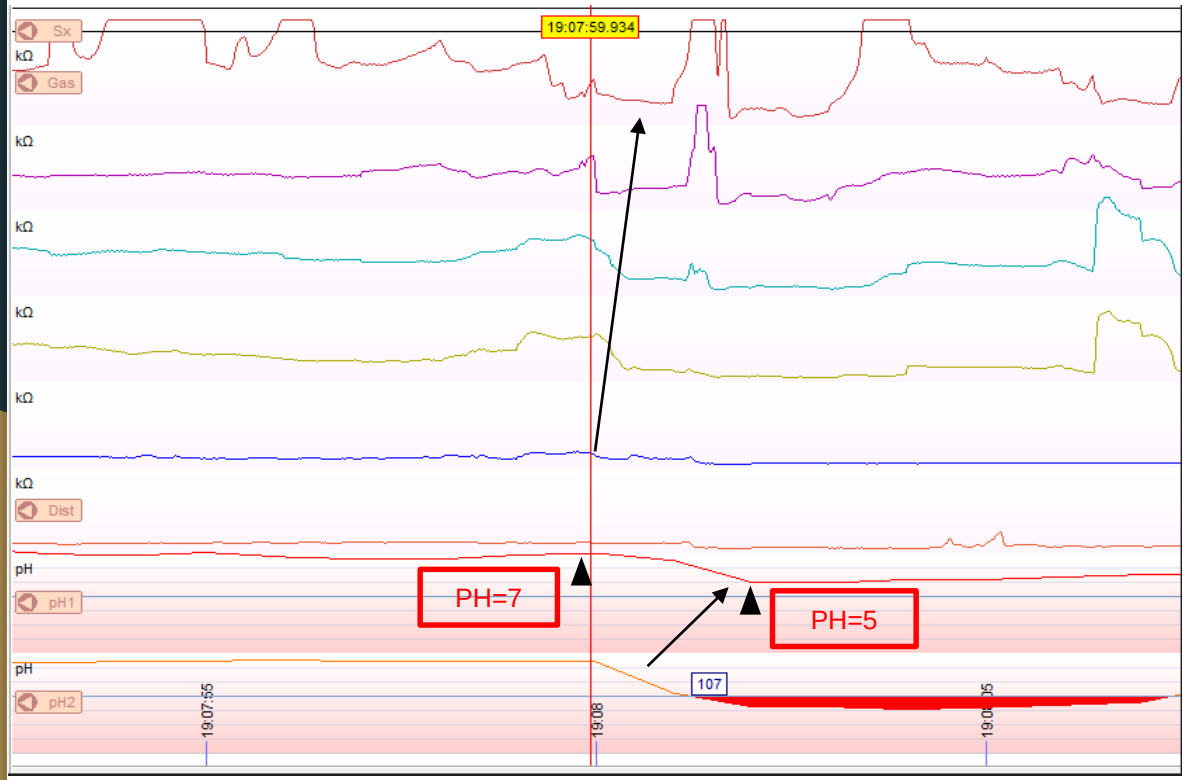




	Esophageal length	2 pH distance
ZAI-BL-54	28-30 cm	25 cm
ZAI-BL-55	25-27 cm	22 cm
ZAI-BL-56	22-24 cm	19 cm

*Retrograde pH drops : an esophageal pH drop is followed by a pharyngeal pH drop
*Retrograde 50% drop in baseline impedance starting from the more distal esophageal channel
*EAR, PAR pH nadir episode occur less than 30 seconds.

2023/06 MIIPH LPR episode 2



Conclusions: conclusive GERD with LPR symptoms

2024/06 MIIPH

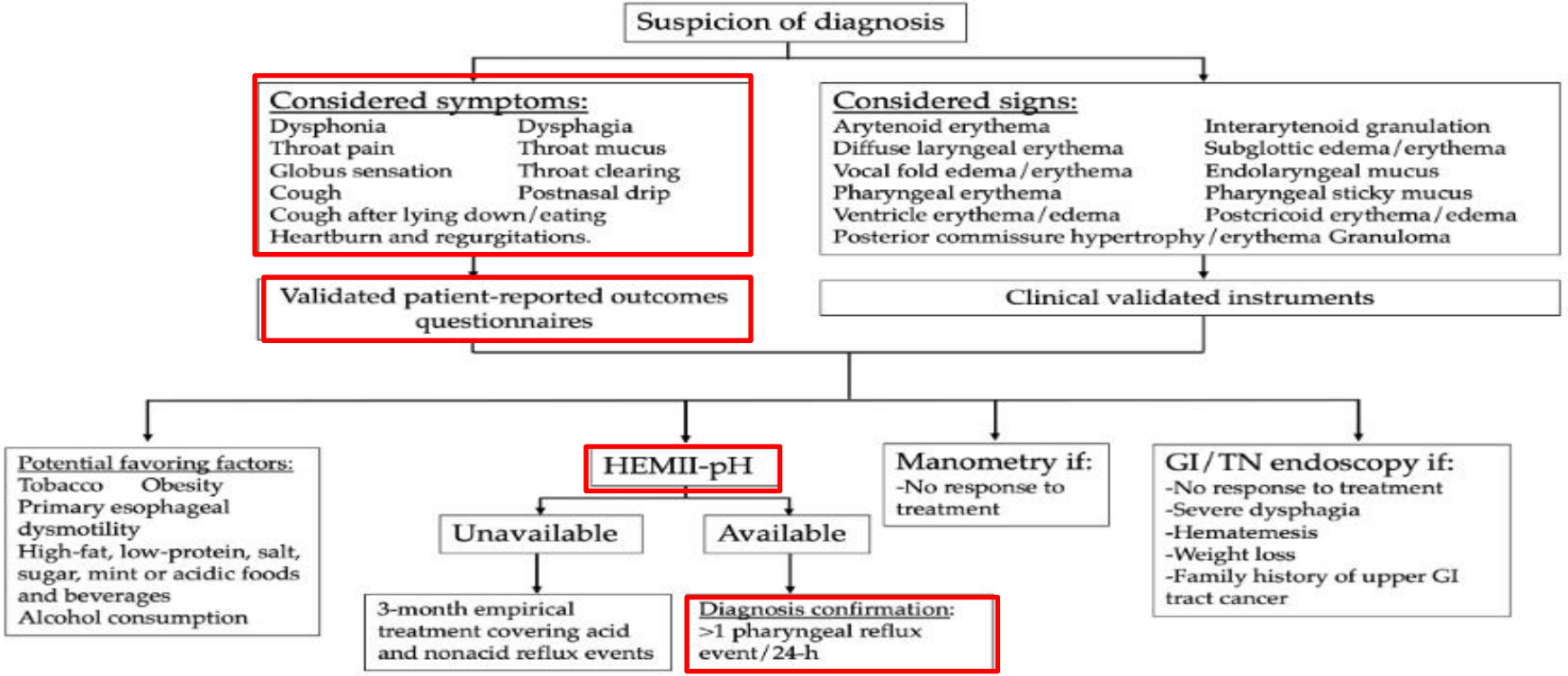


Fig. 2. Symptoms, signs and additional examinations of laryngopharyngeal reflux (LPR). GI/TN — gastrointestinal/transnasal; HEMII-pH — hypopharyngeal-esophageal multichannel intraluminal impedance-pH monitoring.

The Dubai Definition and Diagnostic Criteria of Laryngopharyngeal Reflux: The IFOS Consensus. Laryngoscope 2024 Apr;134(4):1614-1624. doi: 10.1002/lary.31134. Epub 2023 Nov 6

2024/06-07 Intervention

- Visited Dr. Lien's OPD
- Keep esomeprazole 40mg BIDAC
- Acid regurgitation improve 70%

- GI OPD f/u
- Acid regurgitation improve 90%
- Patient reported outcome:
  -RSI:13.
  -EHAS: Anxiety:34/36. Hypervigilance:24/24
- Still suffered from Hoarseness

Back to our patient.

- **Postoperative GERD after sleeve (POGAS)**

Discussion

TABLE 2. Summary of All Study Outcomes ($P < 0.0001$ for All Studies)

Outcome	All Studies	Long Term (≥24 mo)
Overall increase in reported reflux	19%	19%
De novo reflux	23%	20%
Esophagitis found	30%	28%
Barrett's esophagus	6%	8%
Postoperative hiatus hernia rate	41%	—
PPI use (postoperative)	38%	36%
Revision to RYGB for severe reflux	4%	4%
BMI change	−13.29 kg/m^2	−12.56 kg/m^2
EWL	62%	61%
Diabetic resolution	66%	66%
GERD 2018 Lyon Consensus criteria (borderline)	37%	—
GERD 2018 Lyon Consensus criteria (conclusive)	8%	—

- Our results demonstrate a **20% rate of long-term de novo reflux**, and **an overall 19% increase in all reflux symptoms**.
- Pool random effect analysis demonstrated an increase of **8.4%** following SG (95% CI, 5% to 21%, P < 0.0001).

Ann Surg. 2020 Feb;271(2):257-265. doi: 10.1097/SLA.0000000000003275.

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- **36% long-term PPI use** suggests that either
  - (1) **Preexisting PPIs** were continued (**19-28%**)
  - (2) **Symptomatic POGAS**.
  - →Data not able to differentiate these results
  - →subgroups of **asymptomatic GERD or "silent" GERD**,
  - →Consider **routine endoscopic** or **physiologic postoperative testing**

- Sixteen studies , pooled random effects analysis of the reported rate of patients **converted to RYGB** for severe reflux was **4%** (95% CI, 2%–5%, P < 0.0001).

Ann Surg. 2020 Feb;271(2):257-265. doi: 10.1097/SLA.0000000000003275.

Discussion

Sleeve Gastrectomy & Anterior Fundoplication (D-SLEEVE) Prevents Gastroesophageal Reflux in Symptomatic GERD

- **32 pts**, all receive HRiM, MIIPH before & after D-SLEEVE. Median follow up **14 months**.

Fig. 2 The preoperative and postoperative BMI decrease was statistically different ($p < 0.05$) both in D-SLEEVE and in sleeve gastrectomy

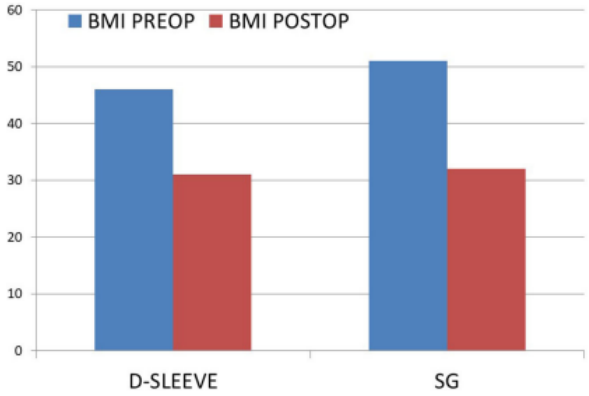
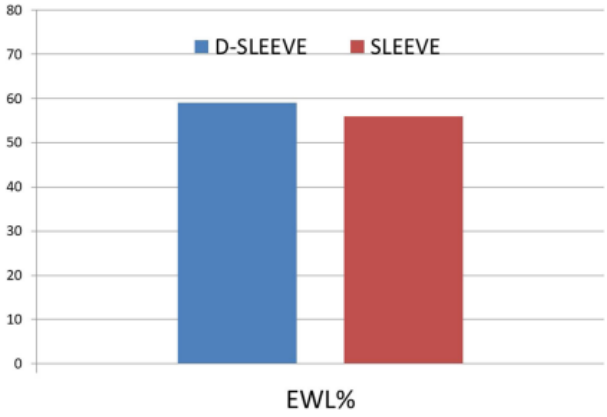


Fig. 3 Excess weight loss of D-SLEEVE compared to sleeve gastrectomy without fundoplication was not statistically different at 1-year follow up (EWL% 59 vs. 56, p = NS)



•Both SG & D-SLEEVE decreased BMI, *p<0.05* •EWL no statistically different at 1-yr f/u. (SG v.s D-SLEEVE)

Obes Surg. 2020 May;30(5):1642-1652. doi: 10.1007/s11695-020-04427-1.

Discussion

Sleeve Gastrectomy & Anterior Fundoplication (D-SLEEVE) Prevents Gastroesophageal Reflux in Symptomatic GERD

- **32 pts**, all receive HRiM, MIIPH before & after D-SLEEVE. Median follow up **14 months**.

Table 2 Standard pH values detected at multichannel intraluminal impedance and pH-metry (MII-pH) before and after D-SLEEVE

	Pre-D-SLEEVE ($n = 32$)	Post-D-SLEEVE ($n = 32$)	p[d]
Total[‡]	5 (4–6)[a]	1.2 (0.5–2)[a]	< 0.05
Upright[c]	5.4 (4.1–6.2)[b]	1.6 (1.2–1.8)[b]	< 0.05
Recumbent[c]	4.3 (3.8–5.2)[b]	0.7 (0.5–1.0)[b]	< 0.05
DeMeester' score	20.2 (16.2–24.5)[b]	7 (4.4–10.5)[b]	< 0.05
GerdQ score	10.4 (9.2–12.5)[b]	1.6 (0.5–1.9)[b]	< 0.05

[a] Values are median (IQR 25th–75th)

[b] Values are mean (IQR 25th–75th)

[c] Percentage of time with esophageal pH < 4

[d] Wilcoxon rank sum test for paired data

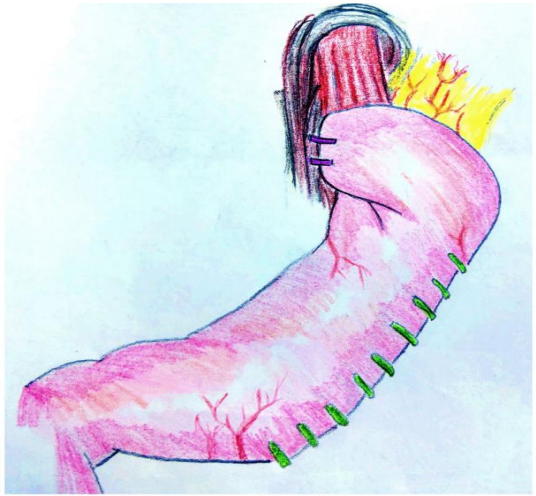


Fig. 1 Sleeve gastrectomy with anterior fundoplication (D-SLEEVE).

- **D-SLEEVE** is an effective restrictive procedure, which recreates a functional LES pressure able to **control and/or prevent mild GERD at 1-year follow-up**.

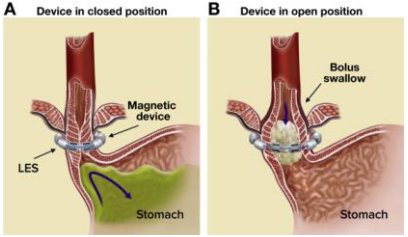
Obes Surg. 2020 May;30(5):1642-1652. doi: 10.1007/s11695-020-04427-1.

Back to our patient.

Postoperative GERD after sleeve (POGAS) and LPR.

Treatment option.

- **Long term PPI use & receive regular endoscope with MIIPH test**
- **Magnetic sphincter augmentation (MSA)**
- **Fundoplication ?**
- **Revision to Roux-en-Y gastric bypass (RYGB)**



CGH 2016 May;14(5):671-7.

Conversion of Sleeve Gastrectomy to Roux-en-Y Gastric Bypass: Indications, Prevalence and Safety

METHODS

13,432 patients undergoing sleeve to bypass compared with 84,543 primary bypass

Data from 2020 and 2021 MBSAQIP

RESULTS

Key finding 1: Main indications for revision were reflux (55.3%), weight recurrence (24.4%), and inadequate weight loss (12.7%)

Key finding 2: Sleeve to bypass had a higher rate of serious complications than primary bypass (7.2 vs 5.0%, p<0.001)

Key finding 3: Mortality was rare and not different between SG-RYGB and P-RYGB (0.1 vs 0.1%, p=0.385)

CONCLUSIONS

Sleeve to bypass conversions are safe with a low rate of complications and mortality

However, it has a higher rate of serious complications compared to primary bypass

Take home message

IFSO

Jerry T. Dang, Tiffany Vaughan, Valentin Mocanu, Hadika Mubashir, Juan S. Barajas-Gamboa, Ricard Corcelles Codina, John Rodriguez, Shahzeer Karmali, Matthew Kroh

OBESITY SURGERY

SG-RNY v.s P-RYN serior complications rate

- **anastomotic leak** (0.5 vs. 0.4%, ***p = 0.002***)
- **bleeding** (2.0 vs. 1.6%, ***p < 0.001***)
- **reoperation** (3.0 vs. 1.9%, ***p < 0.001***)

(***OR 1.21***, 95%CI 1.12 to 1.32, ***p < 0.001***)

-**Not death** (0.1 vs. 0.1%, ***p* = 0.385**).

Obes Surg. 2023; 33(5): 1486–1493.

Thanks for your listening.

討論：

莊政諺主任：

1.這個個案應該到GS報告

2.CS無法再做胃摺疊術，因為沾黏問題及對周邊器官有傷害，術後效果可能也不明顯，沒有把握

連漢仲主任：這類病人以後會越來越多，我們對他的自然病史要密切觀察，因為以後產生巴瑞氏食道及食道癌的機會會增加。