

RÉUNION ANNUELLE
DU GROUPE FRANÇAIS
DE NEURO-GASTROENTÉROLOGIE



2&3 MAI
2024
ANNECY
LES PENSIÈRES
VEYRIER-DU-LAC

« *Inability to belch syndrome* »

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Groupe Français de
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Cas clinique

- Homme 19 ans sans antécédent
- Symptômes depuis l'enfance
 - « j'ai envie de roter mais je n'y arrive pas »
 - « ça fait des bruits gênants de gargouillis dans la poitrine , et j'ai des douleurs dans le thorax»
 - « je suis ballonné et j'ai des flatulences »
 - « mon médecin traitant m'a donné de l'oméprazole mais ça ne marche pas »
- Pas de dysphagie, pas de pyrosis, pas de régurgitations
- Examen clinique normal

Eructations: mécanisme physiologique

- Accumulation de gaz dans la partie proximale de l'estomac
- Activation d'un réflexe vago vagal complexe entraînant la relaxation du SIO
- Relaxation du sphincter supérieur de l'oesophage

Impossibilité d'éructer

- Absence de relaxation du SIO (après fundoplicature)
- Dysfonctionnement du SSO

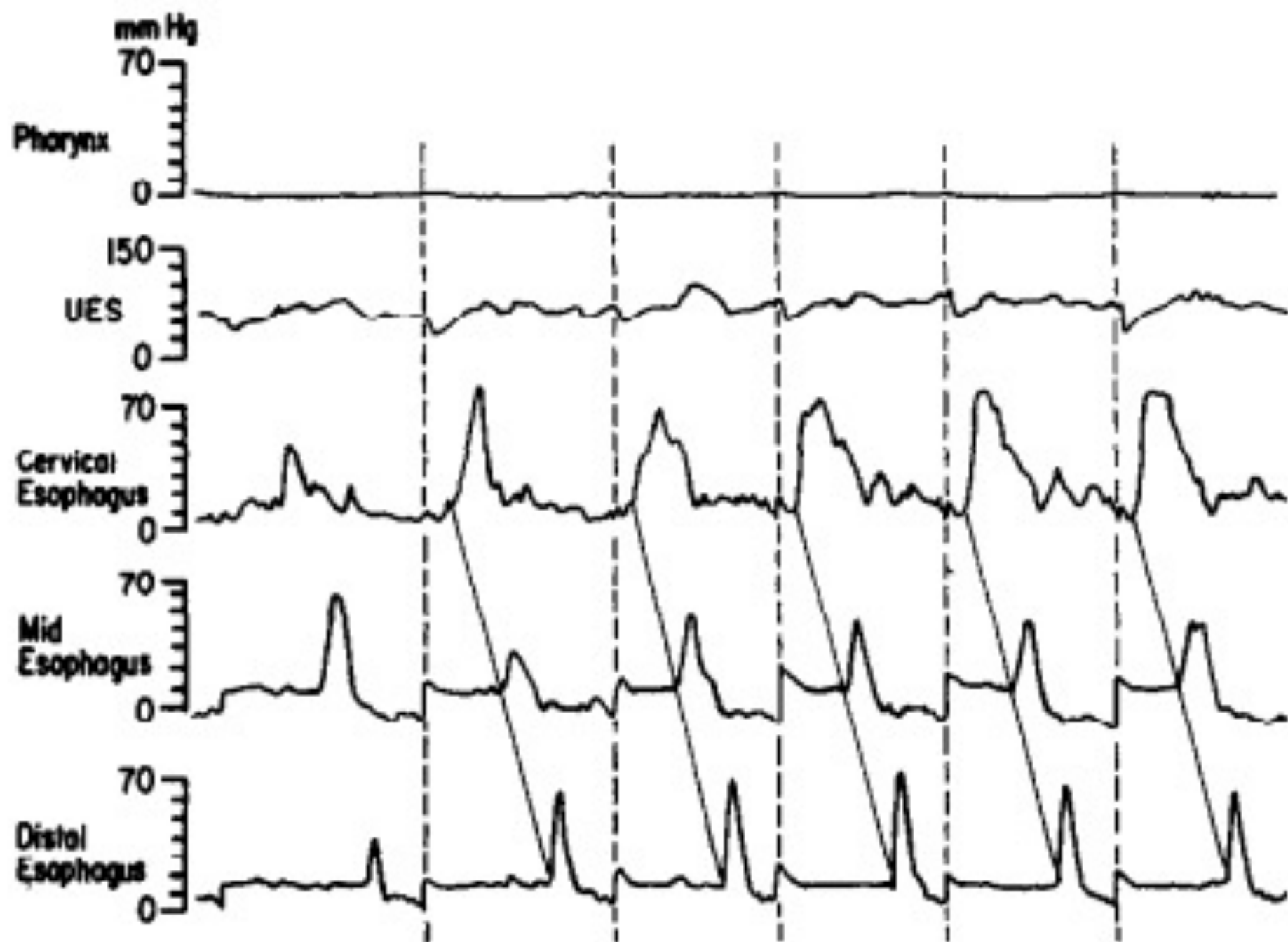
1987: première observation

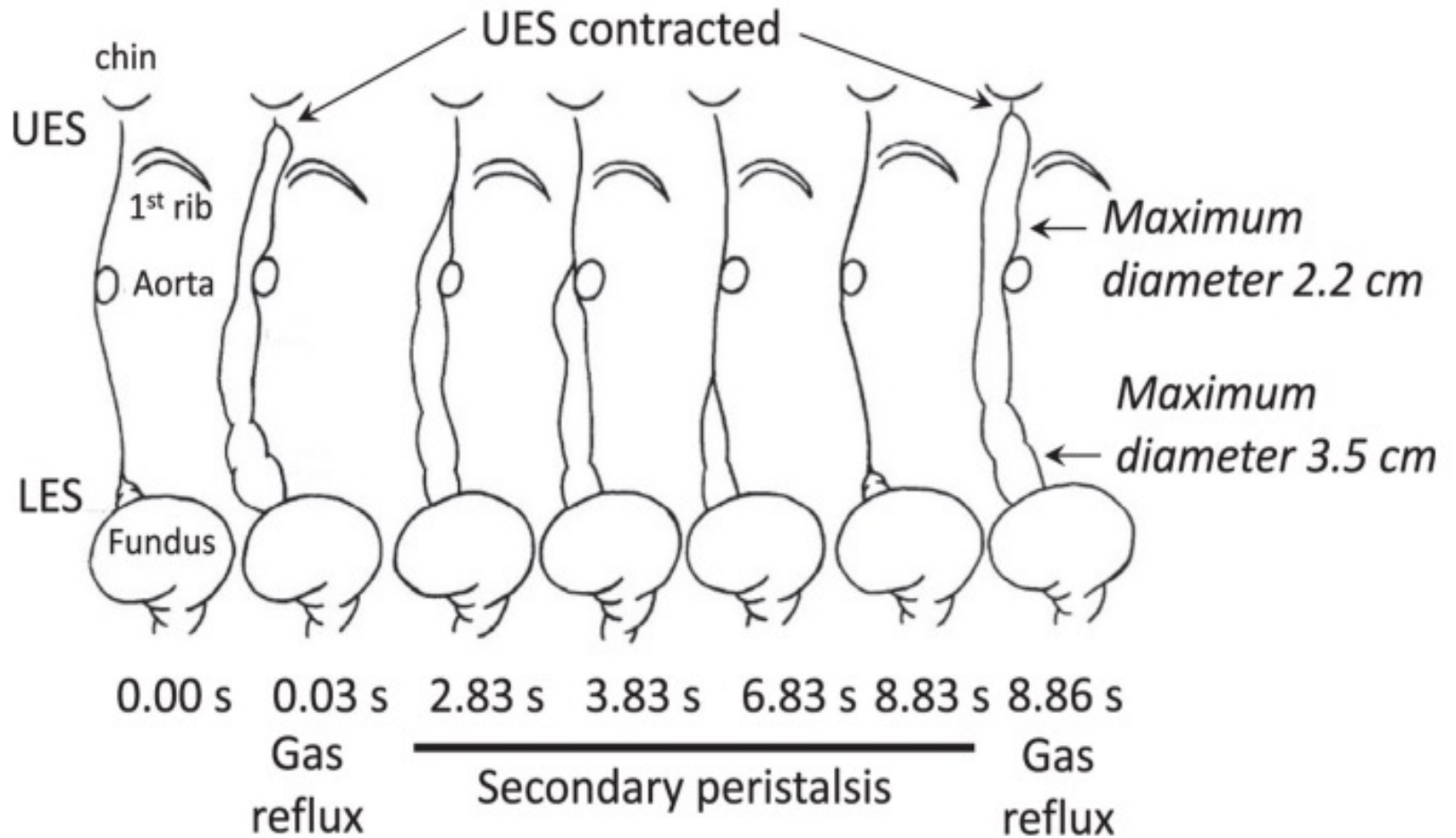
GASTROENTEROLOGY 1987;93:818-22

Dysfunction of the Belch Reflex A Cause of Incapacitating Chest Pain

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Premières observations

Chest Pain and Inability to Belch

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A case of inability to belch

[M Tomizawa¹](#), [M Kusano](#), [T Aoki](#), [S Ohashi](#), [O Kawamura](#), [T Sekiguchi](#), [M Mori](#)

Waterman Gastroenterology 1989
Tomizawa J Gastroenetrrol Hepatol 2001

2019: première série rétrospective

Table 2. Patient Profile for Cohort of 51 Patients with Retrograde Cricopharyngeus Dysfunction.

Patient Profile	Value
Total patient population, No. (%)	51 (100)
Male, No. (%)	30 (58.80)
Female, No. (%)	21 (41.20)
Mean age, y	30
Age range, y	16-63

Table 1. Syndromic Features of Retrograde Cricopharyngeus Dysfunction.

1. The inability to belch
2. Abdominal bloating and discomfort/nausea, or chest pain, especially after eating
3. Socially awkward gurgling noises from the chest and lower neck as though the esophagus is churning and straining to eject the air
4. Excessive flatulence
5. Social inhibition (a result of 2, 3, and 4)
6. Difficulty vomiting (common but not universal)

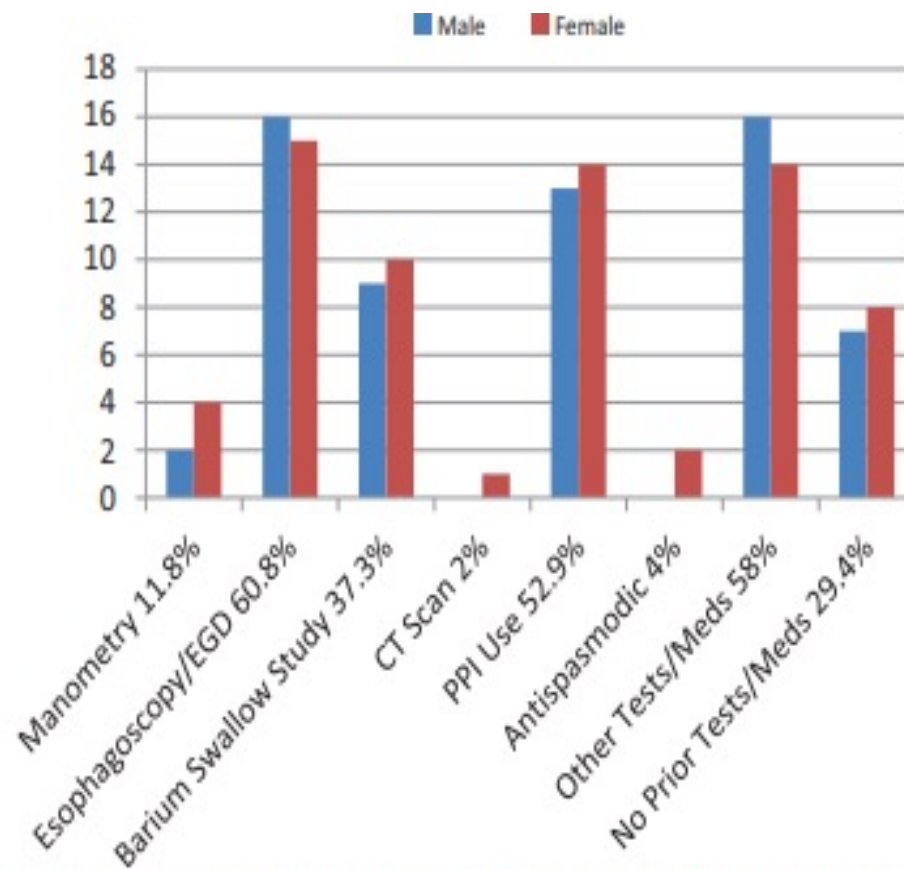


Figure 1. Prior tests and treatments that had not provided a diagnosis. CT, computed tomography; EGD, esophagogastroduodenoscopy; PPI, proton pump inhibitors.

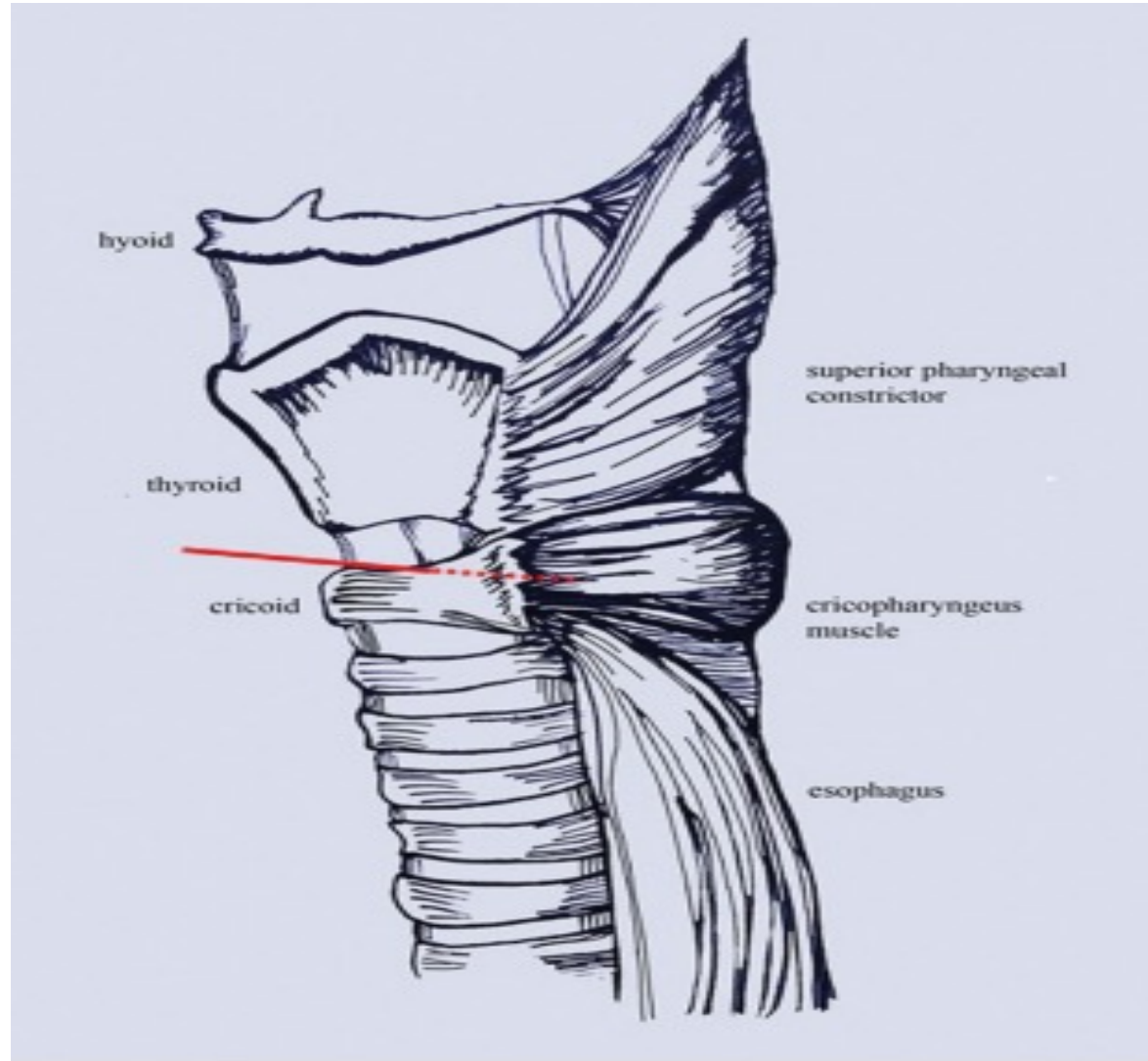


Figure 1. Approximate injection site.

Bastian et al, OTO Open 2019

Bastian et al, OTO Open 2021

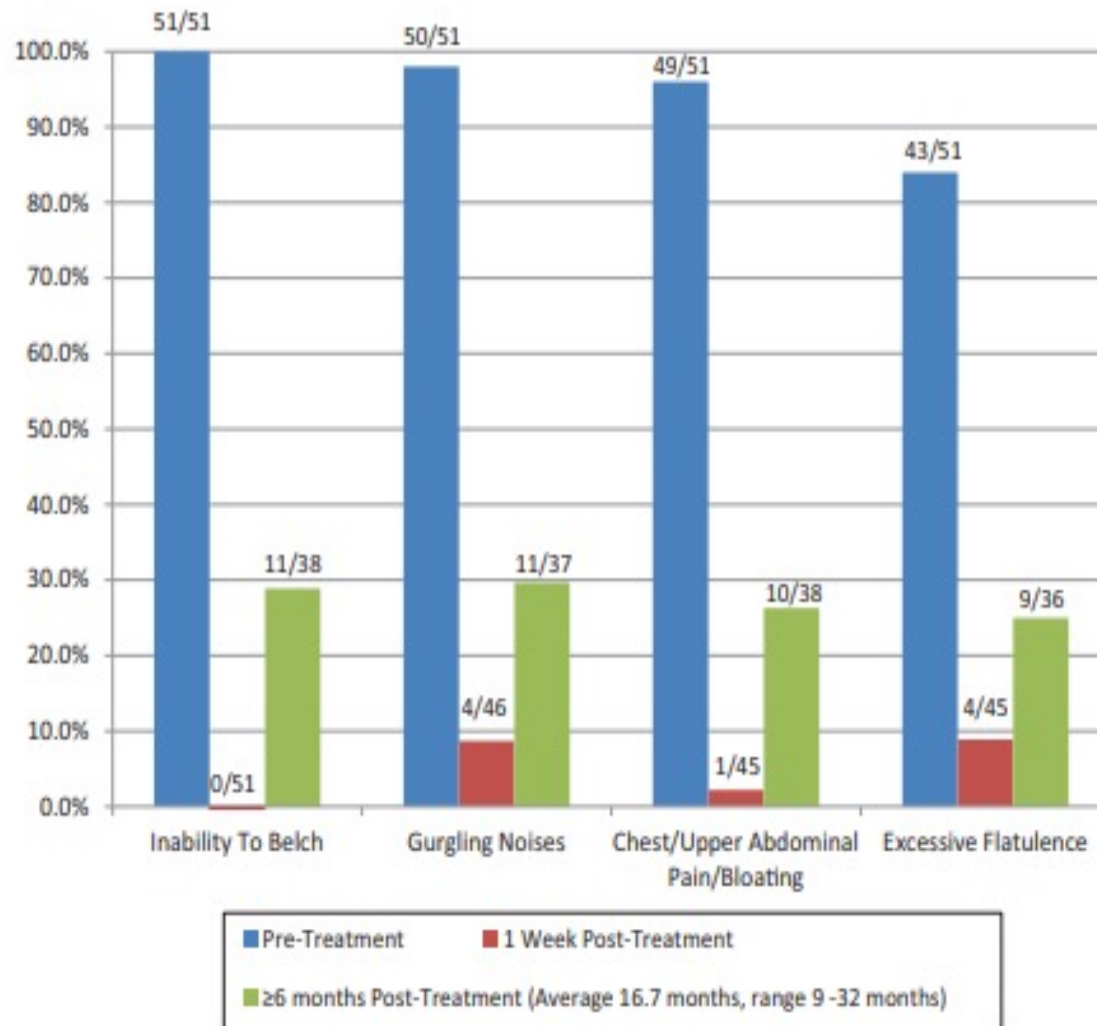


Figure 2. Prevalence of symptoms associated with retrograde cricopharyngeus dysfunction: at diagnosis, 1 week after botulinum toxin, and at 6 months posttreatment. Percent based on denominator (number evaluable at each time point).

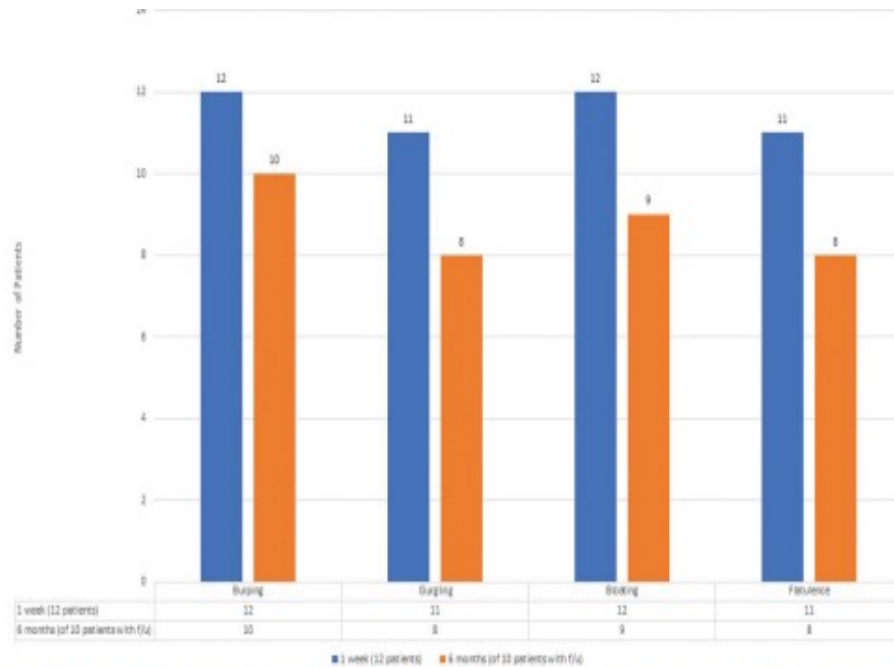


Figure 3. Resolution of symptoms for 1-week and 6-month follow-up periods for patients undergoing in-office injection for initial treatment of retrograde cricopharyngeus dysfunction.

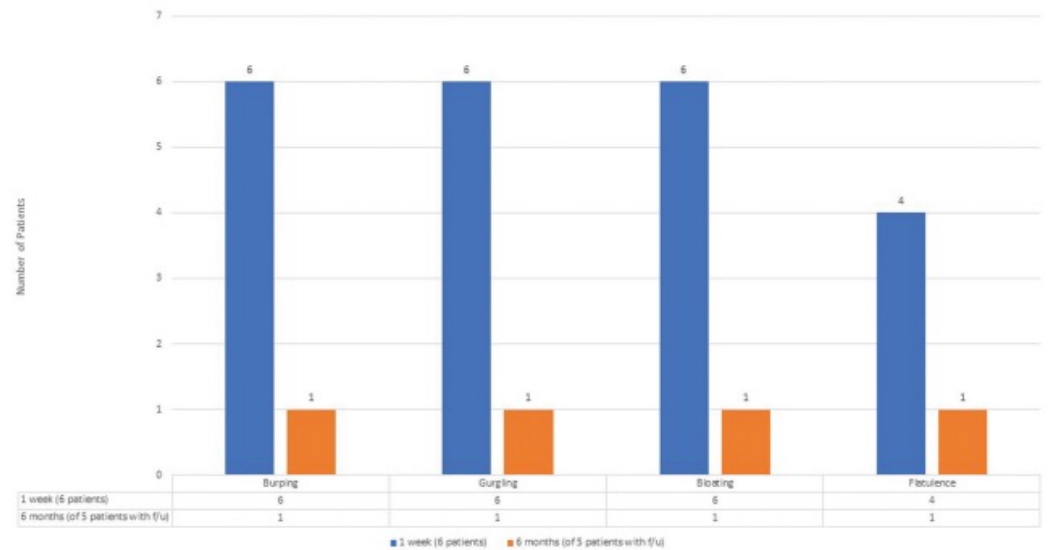
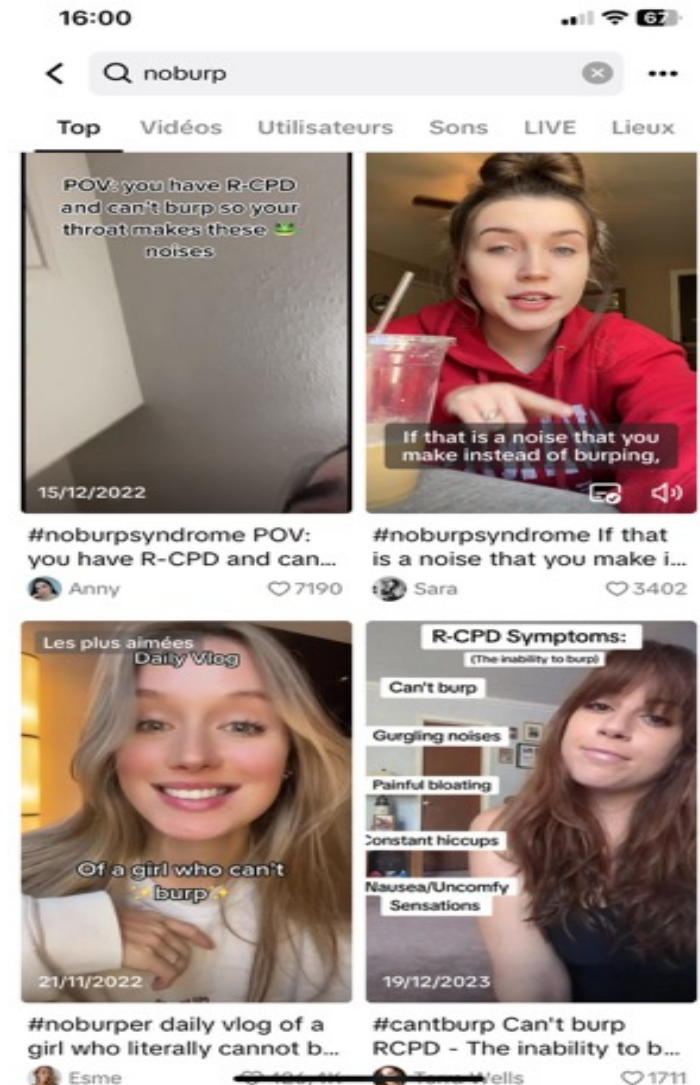


Figure 2. Resolution of symptoms for 1-week and 6-month follow-up periods for patients undergoing in-office injection for recurrence of symptoms after their initial injection in the operating room.

1987-2022...

- 450 case reports / series
- Patients pris en charge par les ORL, souvent via les forums de patients (28000 membres sur le forum Reddit « no burpers »)
- Diagnostic *d'inability to belch syndrome* sur interrogatoire et réponse au traitement par injection de toxine botulique



Quelles explorations pour confirmer le diagnostic?

ORIGINAL ARTICLE

Neurogastroenterology & Motility  WILEY

The inability to belch syndrome: A study using concurrent high-resolution manometry and impedance monitoring

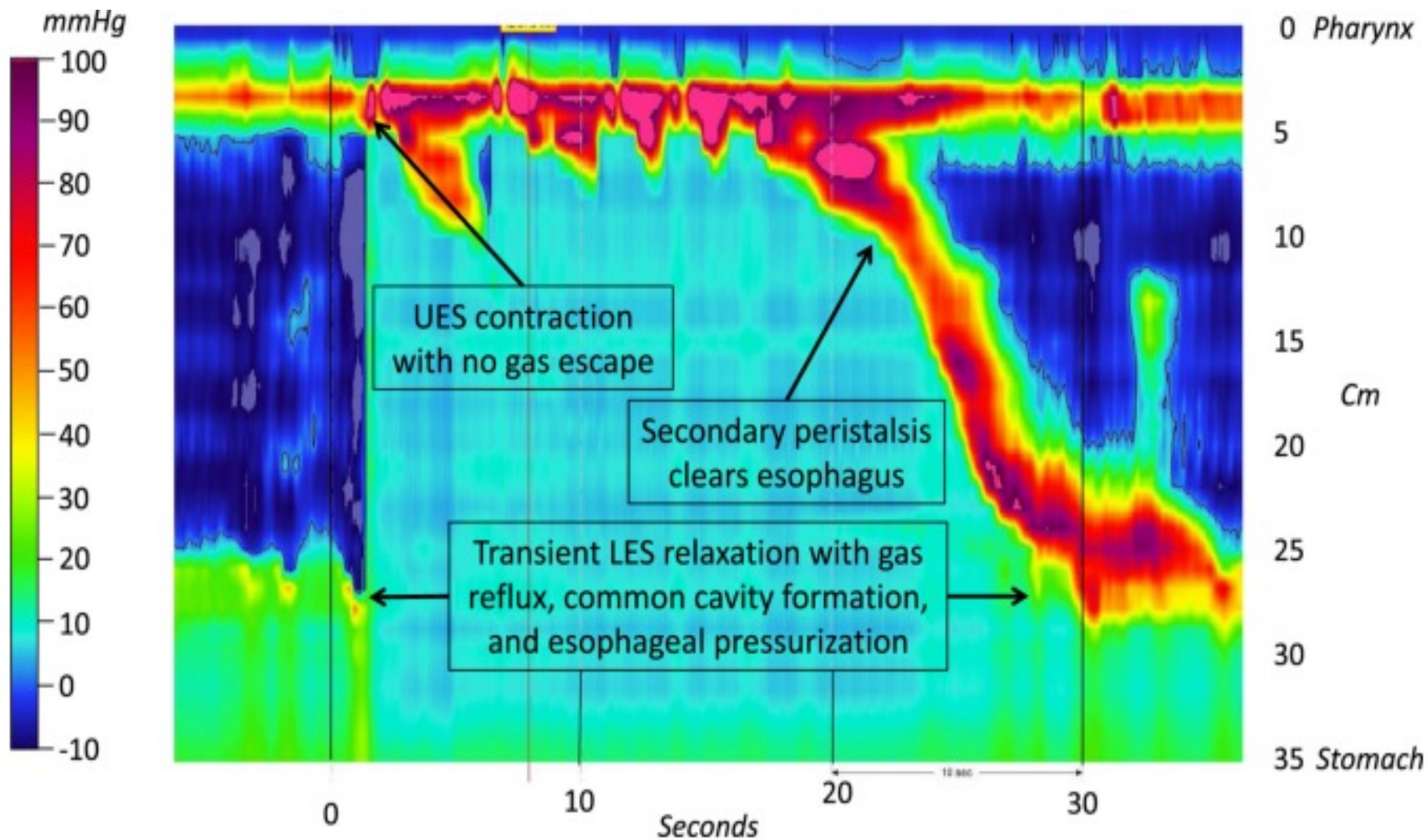
Renske A.B. Oude Nijhuis¹  | Jurjaan A. Snelleman² | Jac M. Oors¹ |
Boudewijn F. Kessing¹ | Derrek A. Heuveling² | Jeroen M. Schuitenmaker¹  |
Liesbeth ten Cate³ | Andreas J.P.M. Smout¹  | Albert J. Bredenoord¹

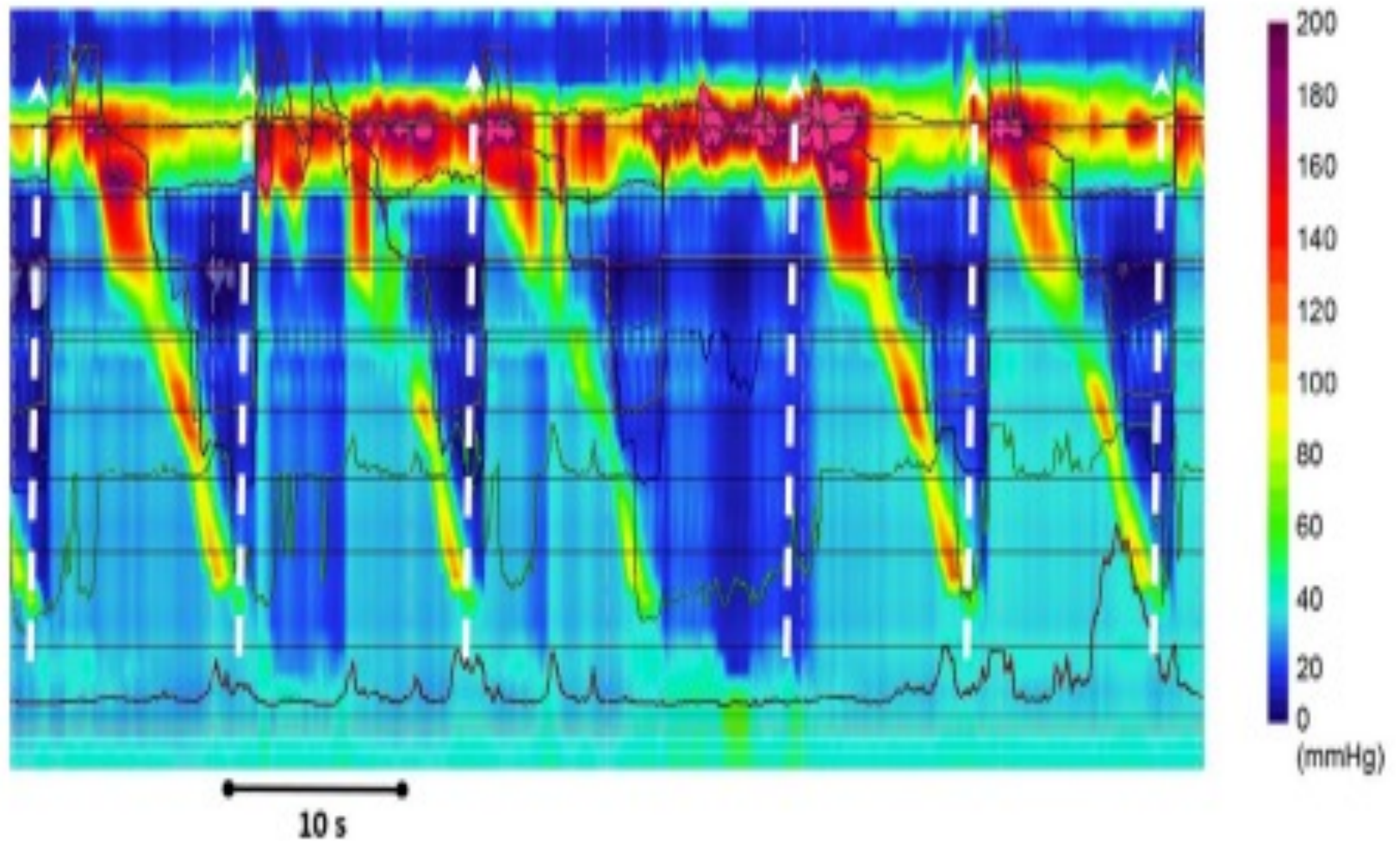
N = 8 patients se présentant pour incapacité à roter

	n	%	Median (range)
Demographics			
Male sex	4	50.0	
Age at inclusion (years)			27 (18-37)
BMI			26.0 (18.3-24.9)
Symptoms at presentation			
Gurgling noises from the chest	8	100.0	
Bloating	8	100.0	
Chest pain	6	75.0	
Epigastric pain	5	52.5	
Hiccups	3	37.5	
Flatulence	3	37.5	
Nausea	3	37.5	
Laryngoscopic findings			
Vocal cord polyp	1	12.5	
Incomplete glottal closure	1	12.5	
Endoscopic findings			
Sliding hiatal hernia	3	37.5	

	Baseline		After treatment		p-value
	Median	range	Median	range	
10 wet swallows (5 ml)					
Upper esophageal sphincter (UES) pressures					
Basal pressure (mmHg)	95.7	41.2–154.0	29.2	16.7–45.6	0.017
IRP (mmHg)	−0.8	−6.2–2.7	−5.9	−7.8–2.0	0.263
Lower esophageal sphincter (LES) pressures					
Basal pressure (mmHg)	20.0	10.9–33.7	20.5	11.2–41.9	0.866
IRP (mmHg)	7.6	3.8–16.2	9.5	3.2–12.3	0.575
Esophageal motility parameters					
DCI (mmHg·s·cm)	237	17–754	390.5	22.0–948	0.050
DL (s)	7.1	5.0–10.0	6.7	5.0–9.0	0.027
Diagnosis according to Chicago classification					
Normal motility	1		1		
Ineffective esophageal motility	5		6		
Absent contractility	2		1		
15-min recording after provocation test					
Liquid reflux episodes	4	0–11	4	0–11	0.916
Gastroesophageal gas reflux episodes	33	15–64	12	3–36	0.017
% followed by secondary peristalsis	85.3	0–100	42.5	0–100.0	0.249
% followed by UES opening	0	0–0	30.0	5.0–100.0	0.012
Duration UES opening	NA	–	400	100–700	–

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Oude Nijhuis, Neurogastroenterology & Motility. 2022

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Duration UES opening	NA	–	400	100–700	–

	Baseline		After treatment		
	Median	range	Median	range	p-value
Averaged intraluminal pressures					
UES basal pressure preceding gas reflux event	67.3	53.5-101.5	35.6	12.3-45.1	0.012
UES pressure upon arrival of gas reflux event	115.2	80.8-161.3	38.3	18.3-108.5	0.012
UES nadir pressure during gas reflux event	63.4	51.0-89.2	13.5	9.2-38.2	0.012
Intra-esophageal pressure preceding gas reflux event	-4.0	-7.7 - 4.2	-3.8	-8.8 - -0.9	0.310
Intra-esophageal pressure during gas reflux event	8.0	3.3-16.1	10.9	3.0-20.8	0.310

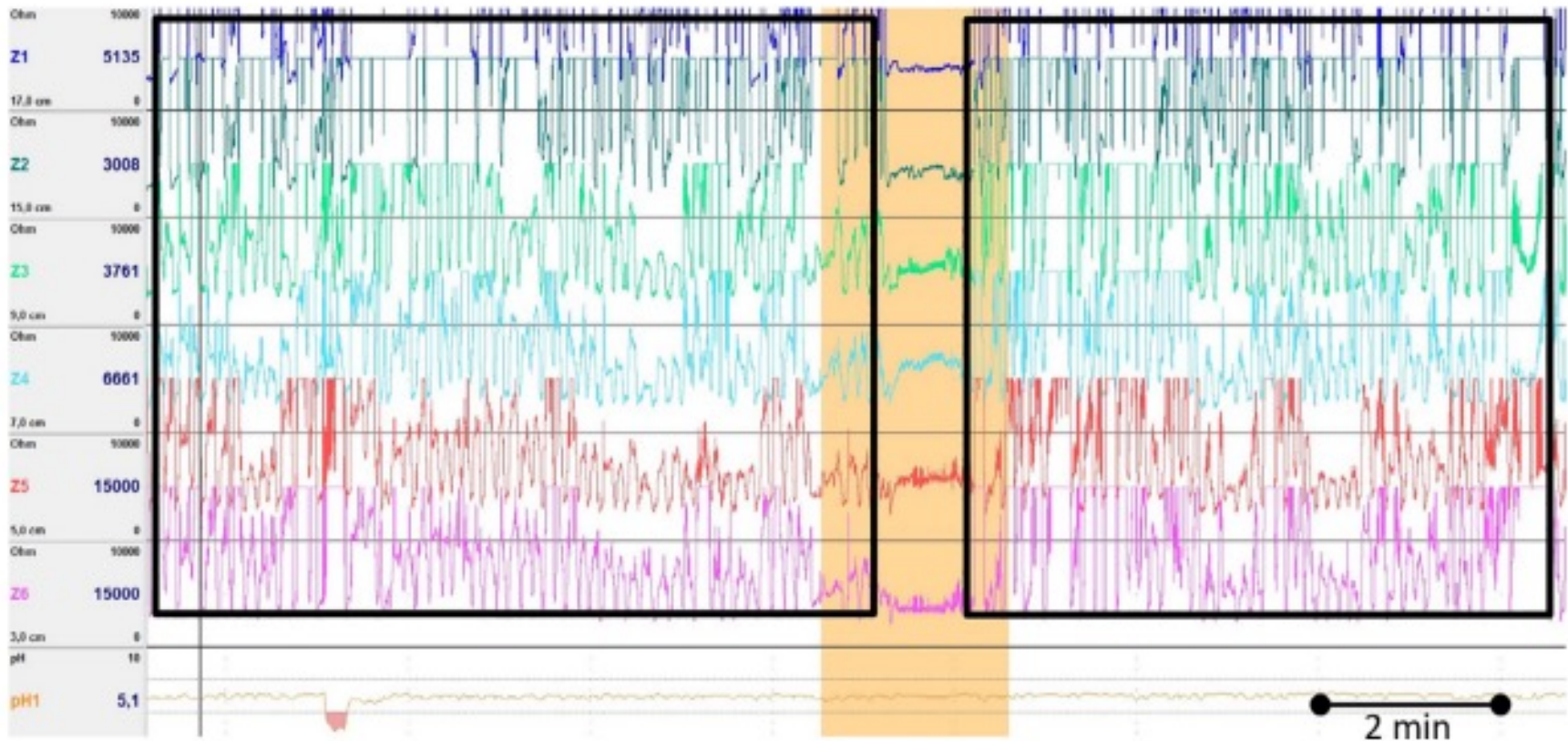
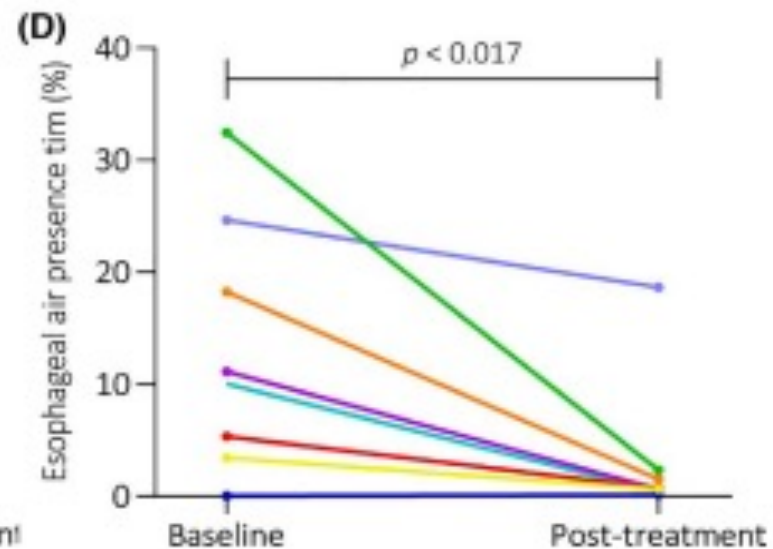
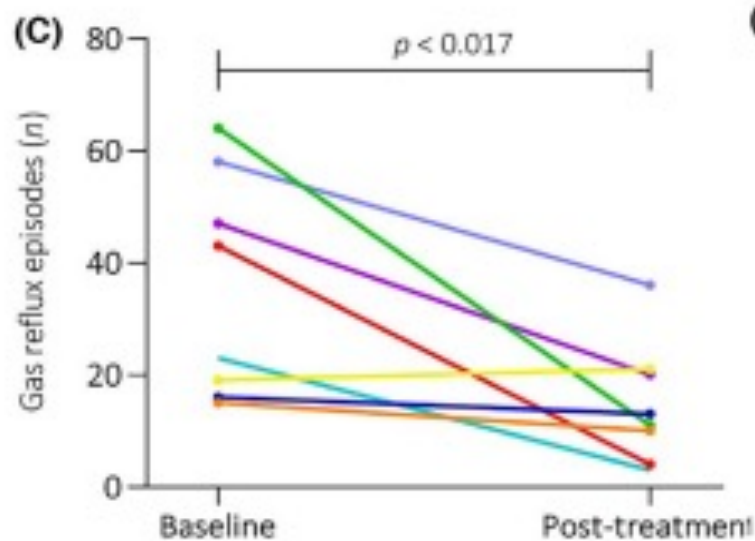
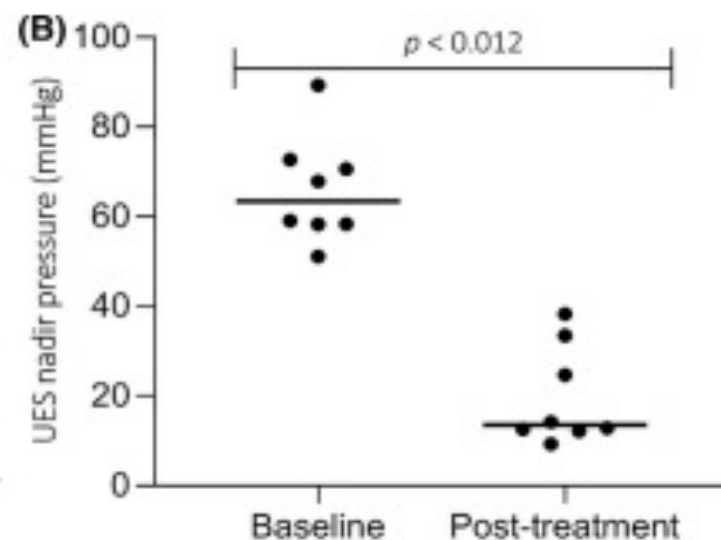
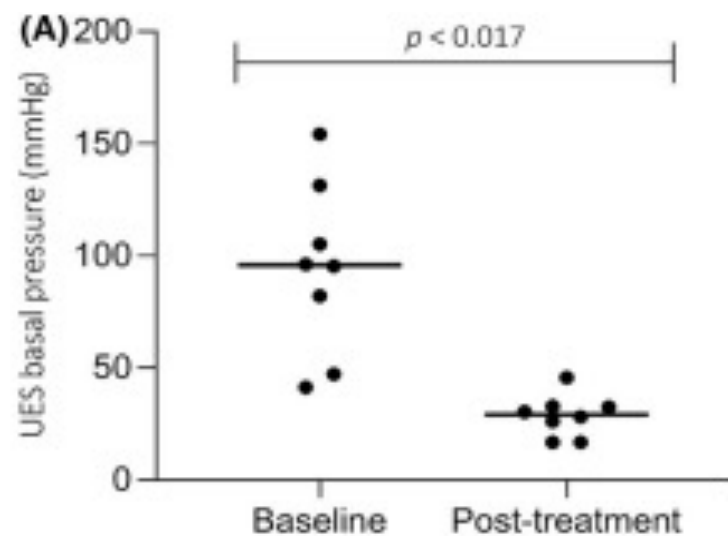


FIGURE 3 Esophageal air entrapment observed as periods (black rectangles) of continuous high impedance levels recorded with ambulatory pH-impedance monitoring in a patient with symptoms of inability to belch. The orange rectangular area represents the 2 min window the subject experienced a symptom



Key Points

- An increasing number of patients have been seeking medical attention because of a self-reported inability to belch associated with esophageal symptoms such as chest pain.
- Ineffective UES relaxation in response to gastroesophageal gas reflux was found to be the underlying cause of esophageal air entrapment, leading to esophageal symptoms in patients with inability to belch. Therapy with UES botox injections restored belching capacity in all patients.
- This study confirms the existence of a syndrome characterized by an inability to belch. Therapy with UES botox injections is a potential treatment for these patients.

Inability to belch syndrome: problème du diagnostic

- Symptômes non spécifiques (gargouillis, flatulences, ballonnements) : faux positifs
- MHR avec ingestion de boissons gazeuses: tester la réponse du SSO à la distension œsophagienne

Traitement: injection de toxine botulique dans le cricopharyngien

- Aucune étude contrôlée contre placebo
- Durée bénéfice clinique supérieure à l'effet pharmacologique
- Symptômes de nature fonctionnelle?
Comportementale?

Conclusion

- *L'inability to belch syndrome* est très probablement dû à un dysfonctionnement du réflexe d'éructation par absence de relaxation du SSO lors de la distension œsophagienne par l'air
- La physiopathologie est encore mal connue

Conclusion

- Les symptômes fréquents sont les bruits dans le thorax et les ballonnements
- Le diagnostic toxine otulique doit être confirmé par une manométrie oesophagienne HR/impédancemétrie, avec ingestion d'eau gazeuse

Conclusion

- Le traitement par injection de toxine botulique dans le muscle cricopharyngien semble efficace mais doit être évalué