





Recurrent symptoms after achalasia treatment: The value of impedance analysis

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KEYWORDS

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CASE SUMMARY

We present the case of a 51-year-old female patient with a history of type 3 achalasia, who underwent Heller's myotomy and laparoscopic Nissen fundoplication (LNF) in 2018. Postoperatively, she experienced recurrent episodes of thoracic and epigastric pain after meals. Her symptoms were unresponsive to pharmacological treatment, prompting a referral to our center in 2024 for evaluation of Per-oral endoscopic myotomy (POEM). A barium esophagogram showed a non-dilated esophagus with normal barium clearance, and episodes of abrupt esophageal dilation after swallowing, with gas entrapment in the gastric fundus (Figure 1). Subsequent High-resolution manometry (HRM) with impedance showed a normal esophagogastric junction response to swallowing, absent peristalsis (supplementary material), and confirmed the presence of supragastric belches seen on the barium esophagogram, followed by episodes of gastric (abdominal) and esophageal pressurization associated with repetitive supragastric belches (Figure 2). She was diagnosed with gas-bloat syndrome with secondary supragastric belches. POEM was not performed, and a flap re-do surgery was recommended.

DISCUSSION

The differential diagnosis of recurrent symptoms in patients treated for achalasia is broad, including incomplete disruption of the lower esophageal sphincter (LES), residual spastic contractions, anatomical abnormalities or LNF-associated complications.^{1,2} Gas-bloat syndrome is a recognized complication of LNF, characterized by epigastric pain, bloating, and abnormal belching patterns, likely as an ineffective attempt to vent trapped air.³ In HRM studies, esophageal pressurizations and spastic contractions from bolus compartmentalization (suggestive of LES obstruction) may be indistinguishable from other causes of esophageal pressurizations such as abdomino-thoracic straining to clear trapped air. The presence of esophageal dilation episodes (Figure 1) and the concomitant supragastric belches and gastroesophageal pressurization observed on HRM with impedance (Figure 2) demonstrate the benefit of impedance in evaluating patients with treated achalasia, as it allows for the assessment of both bolus clearance and gas movement, leading to a more precise diagnosis.

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AUTHOR CONTRIBUTIONS

Luis G Alcala-Gonzalez, Ariadna Aguilar-Cayuelas and Jordi Serra participated equally in conceptualization, data curation, supervision, writing, editing and reviewing. Sergi Quiroga provided the radiological images and revised the final manuscript.

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None.

CONFLICT OF INTEREST STATEMENT

All authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

INFORMED CONSENT STATEMENT

Informed consent was obtained from the patient for the publication of this case.

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REFERENCES

1. Oude Nijhuis RAB, Zaninotto G, Roman S, Boeckstaens GE, Fockens P, Langendam MW, et al. European guidelines on achalasia: united European gastroenterology and European society of neurogastroenterology and motility recommendations. *United Eur Gastroenterol J*. 2020;8(1):13–33. <https://doi.org/10.1177/2050640620903213>
2. Milito P, Siboni S, Lovece A, Andreatta E, Asti E, Bonavina L. Revisional therapy for recurrent symptoms after Heller myotomy for achalasia. *J Gastrointest Surg*. 2022;26(1):64–9. <https://doi.org/10.1007/s11605-021-05098-8>
3. Broeders JA, Bredenoord AJ, Hazebroek EJ, Broeders IA, Gooszen HG, Smout AJ. Effects of anti-reflux surgery on weakly acidic reflux

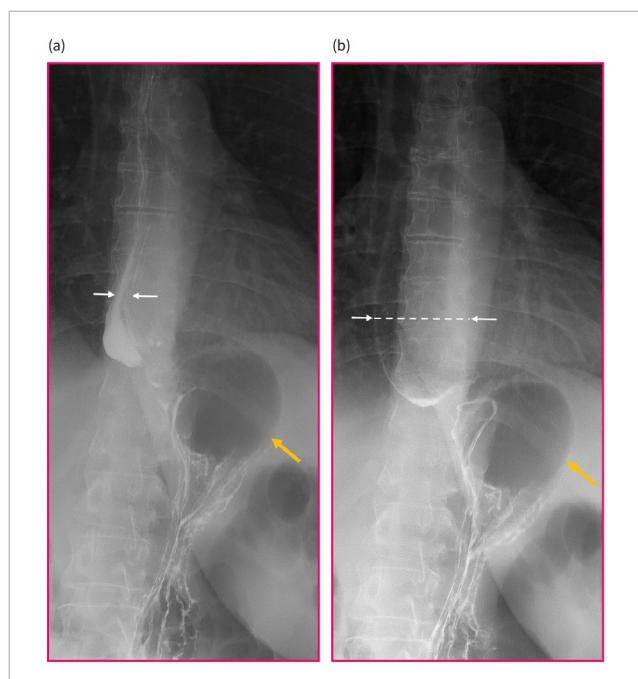


FIGURE 1 Barium esophagogram demonstrating a normal esophagus with proper clearance of barium contrast (left white arrows). Following the swallowing, abrupt esophageal dilation is observed (right white arrows). In both images, a gastric bubble of trapped air is clearly visible in the fundus (yellow arrow).

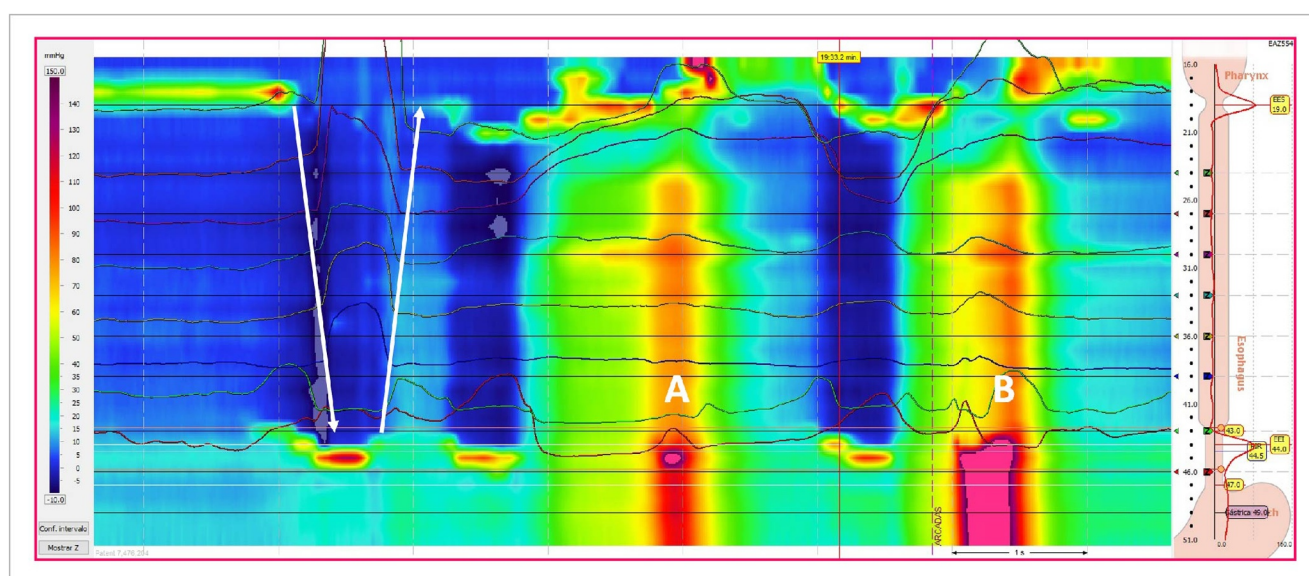


FIGURE 2 High-resolution manometry with impedance tracing illustrating a supragastric belch (white arrows) followed by two episodes of abdominal and esophageal pressurization (a and b), likely representing straining efforts to release trapped air from the stomach, as observed on a barium esophagogram.

and belching. *Gut*. 2011;60(4):435–41. <https://doi.org/10.1136/gut.2010.224824>

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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