

## Anti-reflux mucosectomy with band ligation in the treatment of refractory gastroesophageal reflux disease

For patients with refractory gastroesophageal reflux disease (rGERD), the American Society for Gastrointestinal Endoscopy recommends surgical treatment such as fundoplication to reduce the diameter of the cardia [1]. Several endoscopic treatments are described using new devices, but they suffer from a lack of feasibility and high costs [2]. Anti-reflux mucosectomy (ARMS) could also narrow the esophagogastric junction (EGJ) as a result of tissue shrinkage induced during cicatrization [3,4]. We applied this technique using band ligation (ARMS-b) in the management of rGERD.

We report the case of a 63-year-old man with a long history of GERD uncontrolled by proton pump inhibitor (PPI) therapy. His main symptom was daily pyrosis, which had a significant impact on his quality of life. The diagnosis was confirmed by pH-impedancemetry and

manometry, which eliminated an esophageal motility disorder. ARMS-b was performed in this patient in an ambulatory setting.

For the ARMS-b procedure, a Duette Band Ligation device (Cook Medical, Bloomington, Indiana, USA) was mounted onto an endoscope with large operating channel (3.8 mm). Adrenaline serum (1/1000) was injected into the submucosa at the EGJ oriented toward the lesser curvature of the stomach. The mucosa was captured with the band ligation device, and piecemeal mucosectomy of three-quarters of the circumference of the EGJ was performed using a hexagonal snare (ERBE VIO2 settings: Endocut Q, effect 2) (► Fig. 1, ► Video 1). The patient was discharged on a mixed diet for 5 days and maximum dose PPI therapy twice daily for 2 months

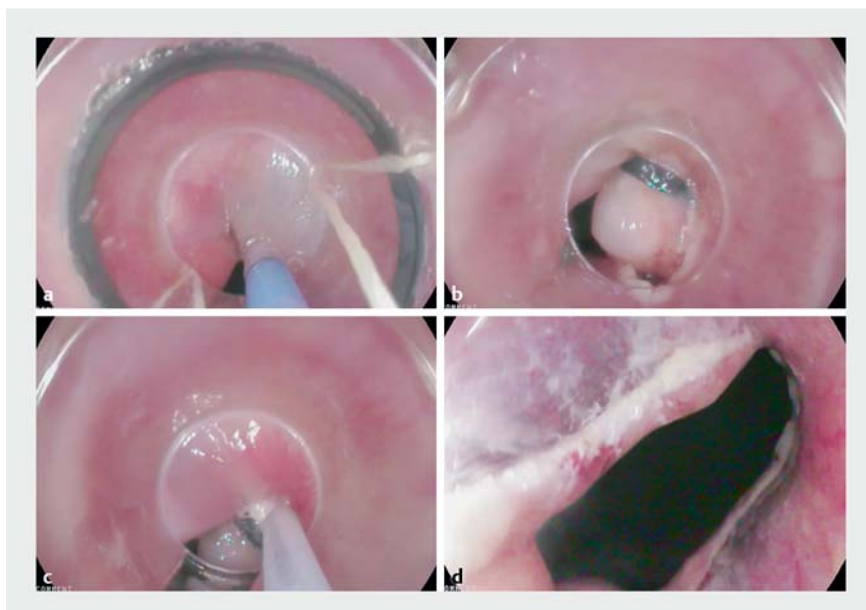
There was no perioperative complication. The endoscopic follow-up at 3 months showed cicatrization of the EGJ and a narrowing of the cardia with an “anti-reflux valve” effect seen in retroflexion (► Fig. 2). Pyrosis had totally disappeared at 1 month. At 1-year follow-up, there was no recurrence of pyrosis and the pH-impedancemetry value had returned to normal.

This case suggests that ARMS-b can achieve good control of the main symptom of rGERD. The procedure seems reproducible, safe, and feasible in the ambulatory setting. Further studies are required to confirm this promising outcome.

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### Competing interests

None



► **Fig. 1** Procedure for anti-reflux mucosectomy with band ligation. **a** Injection of adrenaline serum into the submucosa of the esophagogastric junction (EGJ). **b** Capture of mucosa with the band ligation device. **c** Mucosectomy of the mucosa using a hexagonal snare. **d** Final result of piecemeal mucosectomy of three-quarters of the circumference of the EGJ, oriented toward the lesser curvature of the stomach.



► **Fig. 2** “Antireflux valve” effect of the esophagogastric junction in retroflexion.



**▶ Video 1** Anti-reflux mucosectomy with band ligation. The steps – submucosal injection, mucosal capture with band ligation, and mucosectomy – were performed three times until resection of three-quarters of the circumference of the esophagogastric junction (EGJ). After cicatrization of the EGJ, an “antireflux valve” effect was seen in retroflexion.

### Bibliography

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### References

- [1] Katz PO, Gerson LB, Vela MF. Guidelines for the diagnosis and management of gastroesophageal reflux disease. *Am J Gastroenterol* 2013; 108: 308–328
- [2] Pearl J, Pauli E, Dunkin B et al. SAGES endoluminal treatments for GERD. *Surg Endosc* 2017; 31: 3783–3790
- [3] Inoue H, Ito H, Ikeda H et al. Anti-reflux mucosectomy for gastroesophageal reflux disease in the absence of hiatus hernia: a pilot study. *Ann Gastroenterol* 2014; 27: 346–351
- [4] Eleftheriadis N. Endoscopic treatment of GERD and case report: successful anti-reflux mucosectomy (ARMS) for endoscopic treatment of PPI-resistant GERD in a 24-years-old Greek. *Adv Res Gastroenterol Hepatol* 2017; 3: 555602