

Opening New Ways through the Esophagus with Combined Anterograde-Retrograde Recanalization

Margarida Flor de Lima^a Nuno Nunes^a Luís Sousa^b Maria Antónia Duarte^a

^aGastroenterology Department, Hospital do Divino Espírito Santo de Ponta Delgada, Ponta Delgada, Portugal;

^bGastroenterology Department, Hospital da Horta, Horta, Portugal

Keywords

Head and neck cancer · Pharyngo-esophageal stricture · Endoscopic dilation · Retrograde assistance

Repermeabilização esofágica anterógrada por assistência retrógrada: Abrindo novos caminhos

Palavras Chave

Neoplasias da cabeça e pescoço · Estenose faringo-esofágica · Dilatação endoscópica · Assistência retrógrada

A 61-year-old female patient presented with aphagia 4 years after being submitted to neoadjuvant radiotherapy and laryngectomy for laryngeal squamous cell carcinoma. Upper digestive endoscopy and a barium esophagogram showed a completely obstructed stricture at the pharyngo-esophageal anastomosis, located at 12 cm from the incisors and causing total obliteration of the upper esophagus (Fig. 1). A surgical gastrostomy was performed to provide enteric caloric intake. Over the following 3 years, the patient maintained aphagia and inability to tolerate secretions, with compromised quality of life.

A combined anterograde-retrograde technique for esophageal recanalization was proposed, using two endo-

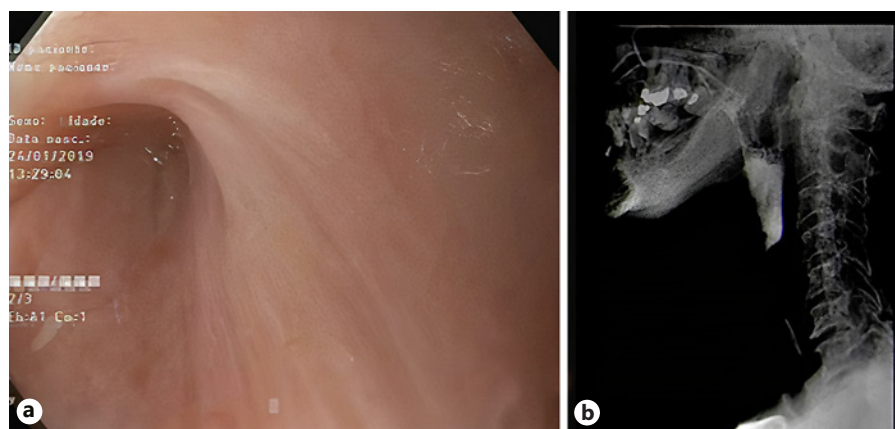


Fig. 1. Esophageal obliteration. **a** Endoscopic view. **b** Barium esophagogram.

scopes: an anterograde endoscope (9.2 mm) and an ultraslim endoscope (5.4 mm), introduced through the gastrotomy orifice. After the alignment and apposition of the endoscopes, confirmed by transillumination and radioscopy, a 19-gauge needle was anterogradely passed across the stricture, followed by a 0.035-inch hydrophilic guidewire. A proximal through-the-scope balloon dilata-

tion was performed in three stages (6, 7, and 8 mm). The retrograde endoscope provided simultaneous direct visualization and stabilization of the devices. An anterograde fully covered biliary metal stent (30 Fr/8 cm) was placed under direct and radioscopic view, allowing maintenance of lumen patency (Fig. 2). The procedure was performed under sedation, and there were no related adverse events.

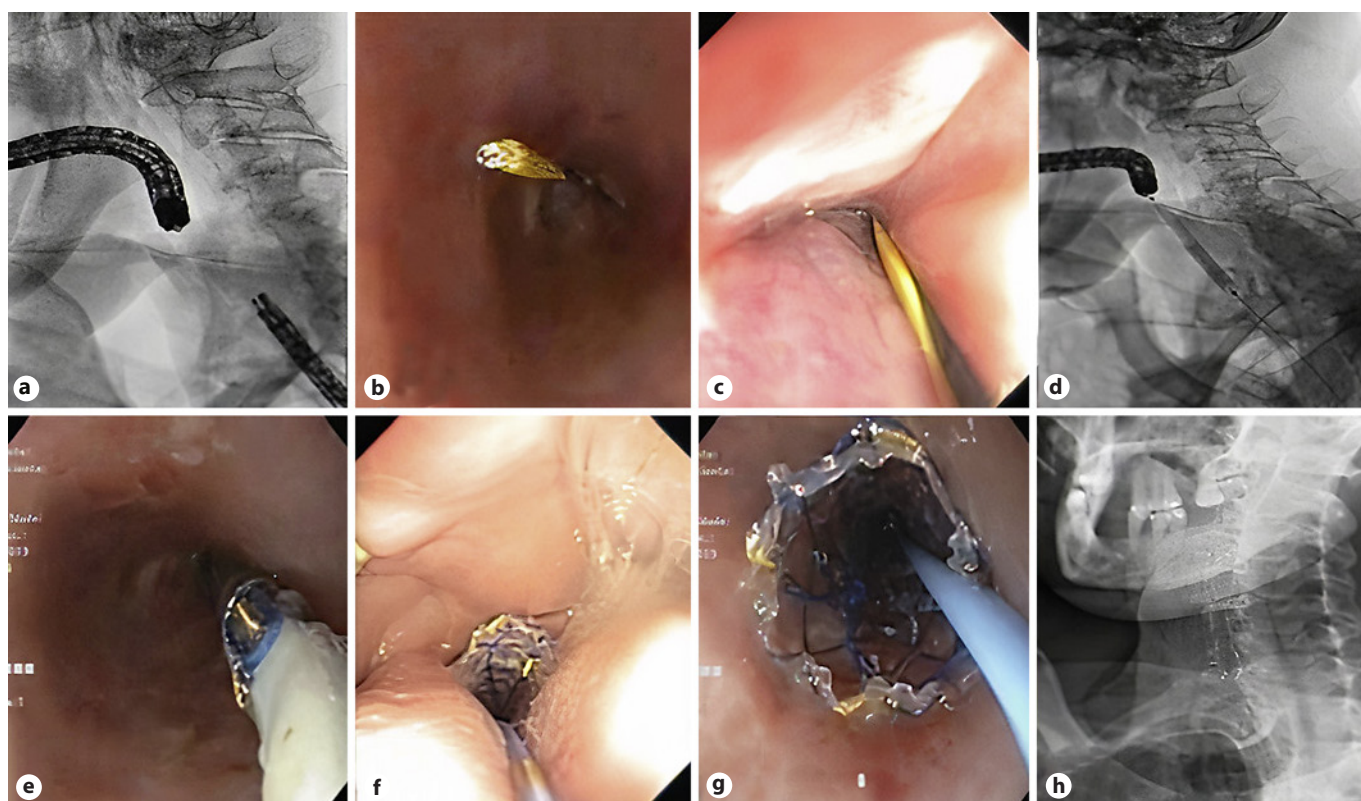


Fig. 2. **a** Apposition of the endoscopes: radioscopic view. **b** Retrograde endoscopic view of the inserted guidewire. **c** Anterograde endoscopic view of the inserted guidewire. **d** Anterograde through-the-scope balloon dilation: radioscopic view. **e** Stent placement. **f** Endoscopic anterograde view of the stent. **g** Endoscopic retrograde view of the stent. **h** Radioscopic final view of the stent.

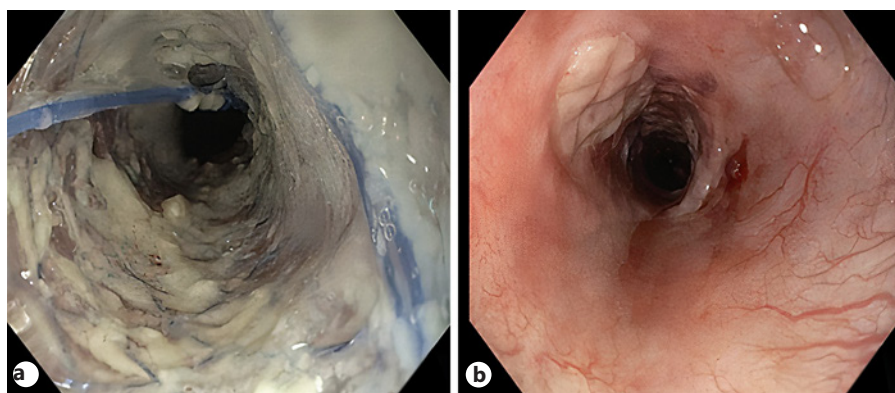


Fig. 3. Endoscopic evaluation after 1 month. **a** Stent correctly placed. **b** Esophageal lumen patency following stent removal.

The patient was able to swallow her saliva and partially tolerate liquid diet. Endoscopic evaluation 1 month after the procedure documented a patent esophageal lumen and a properly positioned stent. The stent was removed, illustrating a completely recanalized esophageal lumen (Fig. 3).

Esophageal strictures are common in patients with head and neck cancers treated with radiation therapy [1]. Although infrequent, a complete lumen obstruction constitutes a therapeutic challenge [1, 2]. Even though only small case series and retrospective studies are currently published, combined antegrade-retrograde recanalization seems to be feasible, with a high technical success rate (89%) and a variable clinical success rate, measured as improvement of dysphagia (58%) and being gastrostomy-tube free (44%), ultimately showing enhanced quality of life [2–5]. Several utensils may be used to gain access through the obstructed lumen, although clear assumptions towards the ideal endoscopic technique cannot be taken [2–4]. Nevertheless, the need for repeated dilations (79%) and related adverse events (perforation 8% and pneumomediastinum 10%) requires a judicious patient selection [5]. Furthermore, the complexity of the procedure limits this technique to experienced endoscopists [5].

References

- 1 Laurell G, Kraepelien T, Mavroidis P, Lind BK, Fernberg JO, Beckman M, et al. Stricture of the proximal esophagus in head and neck carcinoma patients after radiotherapy. *Cancer*. 2003 Apr;97(7):1693–700.
- 2 Bueno R, Swanson SJ, Jaklitsch MT, Lukanich JM, Mentzer SJ, Sugarbaker DJ. Combined antegrade and retrograde dilation: a new endoscopic technique in the management of complex esophageal obstruction. *Gastrointest Endosc*. 2001 Sep;54(3):368–72.
- 3 Schembre D, Dever JB, Glenn M, Bayles S, Brandabur J, Kozarek R. Esophageal reconstitution by simultaneous antegrade/retrograde endoscopy: re-establishing patency of the completely obstructed esophagus. *Endoscopy*. 2011 May;43(5):434–7.
- 4 Fusco S, Kratt T, Gani C, Stueker D, Zips D, Malek NP, et al. Rendezvous endoscopic recanalization for complete esophageal obstruction. *Surg Endosc*. 2018 Oct;32(10):4256–62.
- 5 Jayaraj M, Mohan BP, Mashiana H, Krishnamoorthi R, Adler DG. Safety and efficacy of combined antegrade and retrograde endoscopic dilation for complete esophageal obstruction: a systematic review and meta-analysis. *Ann Gastroenterol*. 2019 Jul-Aug;32(4):361–9.

Statement of Ethics

Written informed consent was obtained from the patient. This study did not require review/approval by the appropriate ethics committee.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

None to report.

Author Contributions

Margarida Flor de Lima: Article concept, literature review, and draft of the manuscript. *Nuno Nunes*: Main performer of the endoscopic procedure. Literature review and critical review of the manuscript. *Luís Sousa and Maria Antónia Duarte*: Critical review of the manuscript.