

# Endoscopic Treatment of Stent-Related Esophagobronchial Fistula

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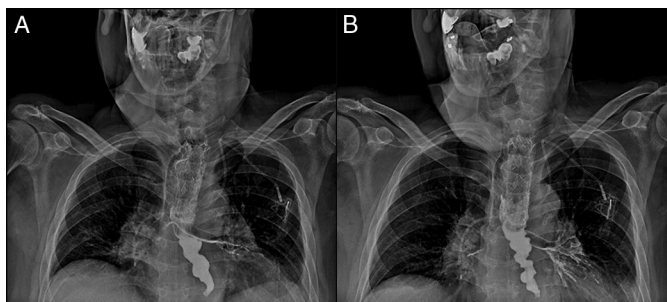
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## CASE REPORT

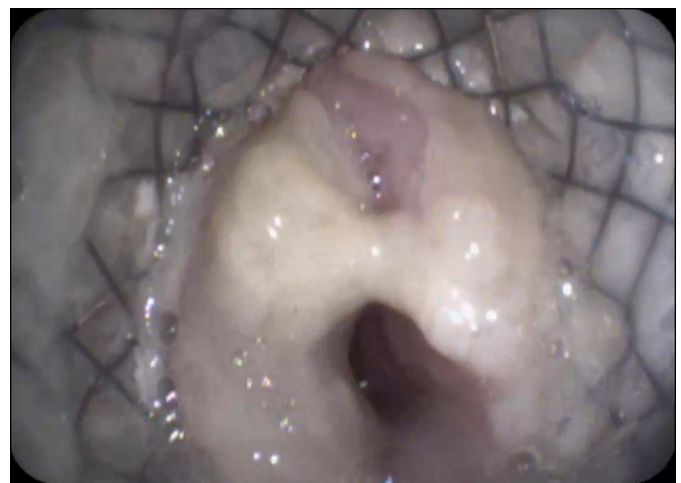
A 64-year-old man suffering from progressive dysphagia due to malignant esophageal stenosis was admitted for the onset of cough that worsened after meals and shortness of breath. The patient had been treated 2 weeks before with the placement of a partially covered self-expandable metal stent in the upper-mid esophagus (Niti-S Double-type, 22x80 mm, Taewoong Medical, Seoul, South Korea). A chest x-ray showed no abnormalities, but a subsequent upper gastrointestinal tract x-ray with contrast showed the passage of gastrografin (Bayer, Germany) within the mainstream left bronchus, starting from the lower end of the esophageal stent (Figure 1). An upper endoscopy confirmed the suspicion, showing a small orifice in the esophageal wall, closer to the lower end of metallic stent (Figure 2).

The esophagobronchial fistula was treated with the placement of a second self-expandable metal stent (Niti-S, 18x120 mm, Taewoong Medical). We used a through-the-scope, fully covered metal stent, under endoscopic and fluoroscopic guidance, to cover the esophageal orifice of the fistula. Because of the complete adhesion of the proximal end of the second stent to the first, no suturing technique was used to prevent stent migration. During upper endoscopy, contrast injection confirmed no more extravasation in respiratory tree. After 7 days of enteral feeding and antibiotic therapy, the patient was discharged. A chest x-ray showed both esophageal stents in place (Figure 3). Two months later, the patient died as a result of the progression of the neoplastic disease.

A self-expandable metal stent is the gold standard to relieve dysphagia, maintaining esophageal patency, in the presence of advanced neoplastic lesions involving the esophageal lumen.<sup>1,2</sup> Other proposed palliative treatments include rigid plastic intubation, brachytherapy, external beam radiotherapy, chemotherapy, esophageal bypass surgery, and chemical and thermal ablation therapy.<sup>3</sup> Esophagobronchial fistulas have a low incidence rate (4%), but this rate increases with longer stent dwell times and with stent length. Proximal and mid esophagus is more often involved, and, as in our patient, previous radiation



**Figure 1.** Upper gastrointestinal x-ray showing passage of contrast from the esophagus to the main left bronchus (A, B).



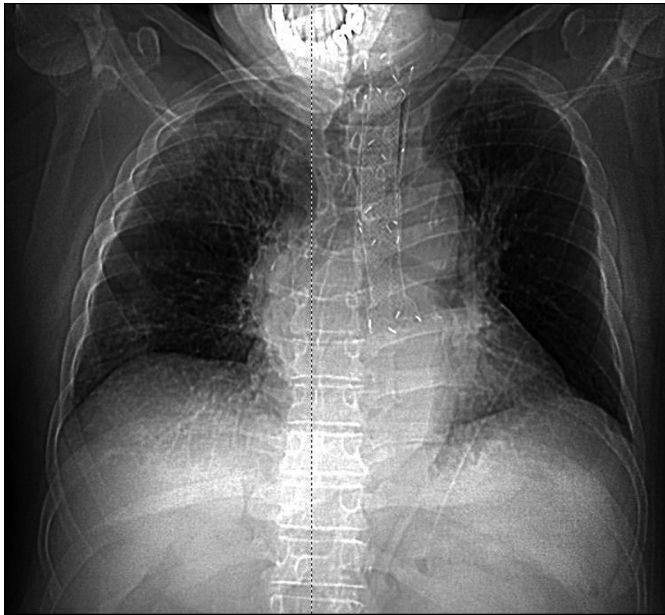
**Figure 2.** Endoscopy of the esophageal orifice of the esophagobronchial fistula caused by the distal end of a partially covered self-expandable esophageal stent.

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**Figure 3.** Chest x-ray at the discharge showed both stents in place.

therapy (for lung small-cell cancer) is a strong risk factor to develop stent-related esophageal fistula.<sup>4-5</sup> Furthermore, delayed identification can lead to a challenging treatment, often requiring surgery. Therefore, physicians should maintain a high suspicion rate with prompt diagnostic testing.

## DISCLOSURES

Author contributions: G. Grande, H. Bertani, VG Mirante, and C. Zulli collected data, and G. Grande and C. Zulli reviewed the literature. G. Grande, H. Bertani, and C. Zulli wrote the manuscript. RL Conigliaro, A. Caruso, and VG Mirante critically reviewed the article. RL Conigliaro is the article guarantor.

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Informed consent was obtained for this case report.

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## REFERENCES

1. Dai Y, Li C, Xie Y, et al. Interventions for dysphagia in oesophageal cancer. *Cochrane Database Syst Rev.* 2014;10:CD005048.
2. Kang HW, Kim SG. Upper gastrointestinal stent insertion in malignant and benign disorders. *Clin Endosc.* 2015;48:187-93.
3. Freeman RK, Ascioti AJ, Mahidhara RJ. Palliative therapy for patients with unresectable esophageal carcinoma. *Surg Clin North Am.* 2012;92(5):1337-51.
4. Bick BL, Song LM, Buttar NS, et al. Stent-associated esophagorespiratory fistulas: Incidence and risk factors. *Gastrointest Endosc.* 2013;77:181-9.
5. Fuccio L, Scagliarini M, Frazzoni L, Battaglia G. Development of a prediction model of adverse events after stent placement for esophageal cancer. *Gastrointest Endosc.* 2016;83:746-52.