Esophagobronchial fistula closed by a cardiac septal occluder device

Fig. 1 Esophageal view of the fistulous orifice.

Fig. 2 Computed tomography (CT) scan image showing the fistula between the left bronchus and esophagus.

Esophageal–respiratory tract fistulas are rare but life-threatening conditions [1]. They may be congenital or secondary to esophageal and bronchogenic neoplasms, radiotherapy, or surgery. Currently, there is a changing paradigm for their management with surgery being replaced by conservative approaches including endoscopic therapy [2]. In fact, fully covered self-expandable metal stents (SEMS) are currently the preferred therapeutic option; however, their clinical success rate is still poor and the rate of fistula reopening remains high [1,2]. This has led to the appearance of therapeutic alternatives, such as the use of cardiac septal closure devices and others [3–5].

We present the case of a 51-year-old man who had undergone prior chemoradiotherapy and esophagectomy for esophageal cancer. During follow-up, the patient developed mediastinal and brain metastases, as well as a severe cough and respiratory infections due to an esophagobron-

Fig. 3 Radiographic image showing a covered self-expandable metal stent (SEMS) in position, which proved to be an unsuccessful treatment.

Fig. 4 The Amplatzer septal occluder.

chial fistula (• **Fig. 1** and • **Fig. 2**). It was decided not to perform surgery but conventional endoscopic approaches were unsuccessful (• **Fig. 3**). We therefore decided to use the Amplatzer septal occluder (St. Jude Medical, Plymouth, Minnesota, USA), a nitinol device commonly used to close cardiac septal defects (• **Fig. 4**).

An upper gastrointestinal endoscopy was performed, which showed a 5-mm fistu-

Video 1
Closure of an esophagobronchial fistula using an Amplatzer septal occluder device.

lous orifice located at the esophagogastric anastomosis. From the esophageal side, a guidewire was inserted through the fistula into the airway and then captured with a forceps to take it back out of the patient, in order to facilitate device positioning (• **Video 1**). A 5-Fr catheter was then introduced and subsequently the occluder was released, firstly on the airway side and then on the esophageal side under

Fig. 5 Views of the occluder device following insertion into the fistula: **a** from the esophagus; **b** from the bronchus.

Fig. 6 Computed tomography (CT) scan image showing the correctly positioned occluder device.

endoscopic control (● Fig. 5 and ● Fig. 6). The procedure was safely completed. The patient experienced a significant improvement in his respiratory symptoms. A second occluder was inserted 4 weeks later because of the development of a new fistula and remained in place until his death 9 months later from progressive brain metastases.

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