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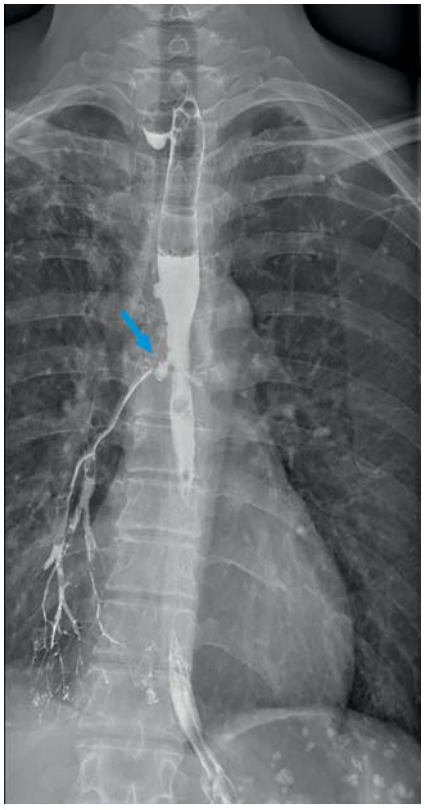
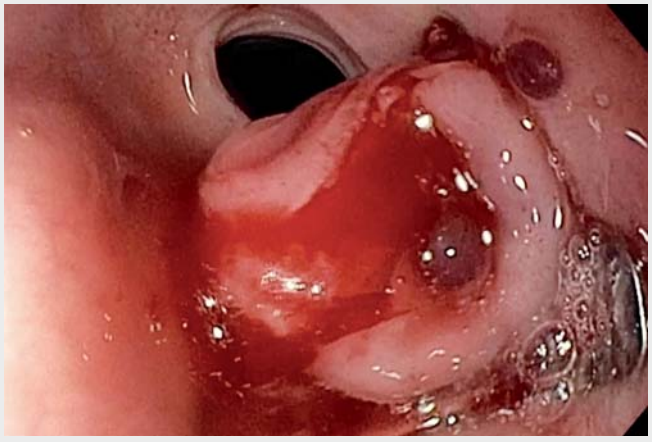
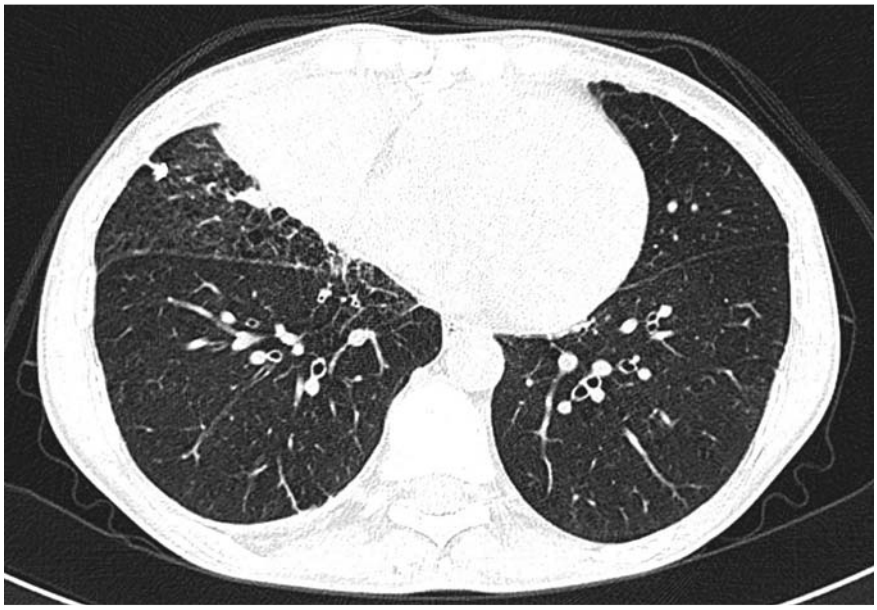
Dual aspect endoscopic evidence of tuberculous bronchoesophageal fistula: successful closure from the esophagus



▶ **Fig. 1** Barium swallow evidence of bronchoesophageal fistula (arrow).



Video 1 Dual aspect endoscopic evidence of bronchoesophageal fistula and subsequent treatment using over-the-scope clip.



▶ **Fig. 2** Computed tomography scan showing middle lobe pneumonia.

Esophageal involvement of tuberculosis is uncommon and two types have been described [1]. Primary esophageal tuberculosis is rare because of mucosal protection factors, squamous epithelium, peristalsis, saliva, and erect posture. Secondary esophageal tuberculosis is more common and is defined as secondary involvement of the esophagus owing to adjacent pulmonary parenchyma, mediastinal lymph nodes, or vertebral column involvement [2].

The development of brochoesophageal fistula (BEF) in tuberculosis is related to mediastinal lymph node involvement; inflammation leads to involvement of neighboring structures, particularly the esophagus and the trachea, resulting in periesophagitis and peritracheitis. If, however, caseonecrotic lymph nodes rupture, the local abscess formation results in fistula. The most common symptoms of BEF are cough, dysphagia, fever, and pneumonia [2–4].

Antitubercular therapy (ATT) remains a mainstay of treatment. In cases refractory to ATT, further management, including endoscopic interventions and surgery, are needed [5].

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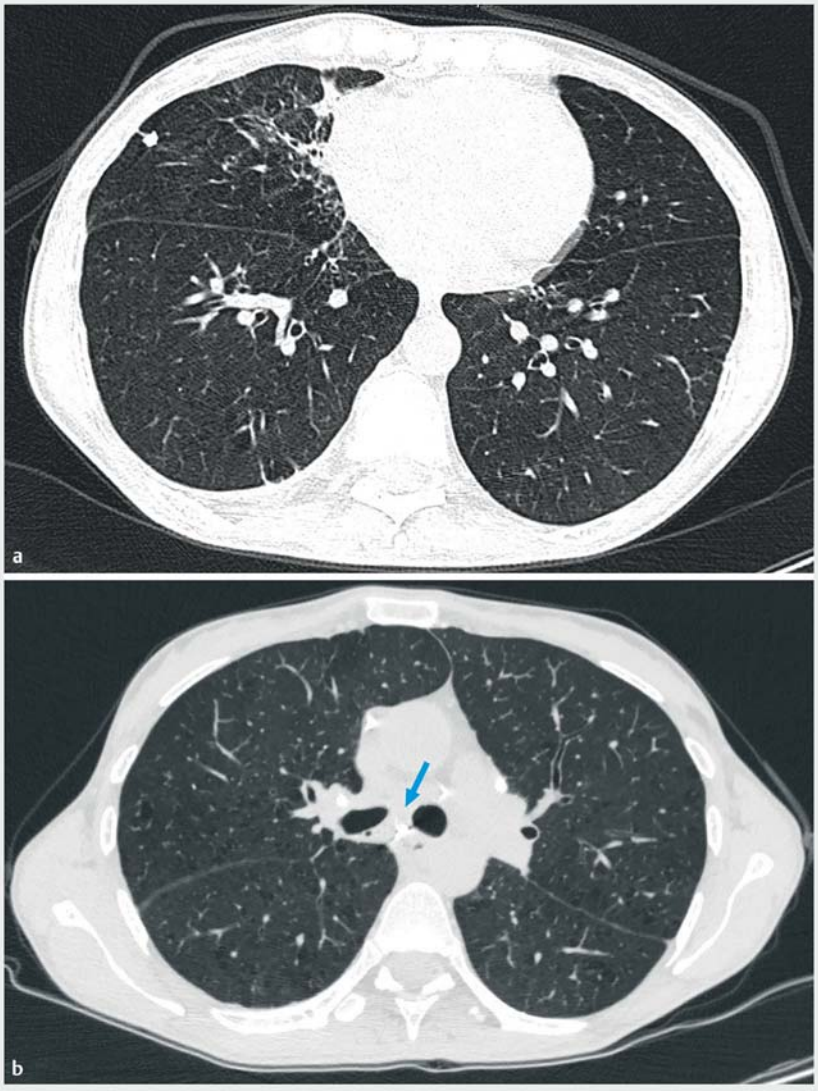

▶ **Fig. 3** Computed tomography at 1-month follow-up. **a** Significant improvement of middle lobe pneumonia. **b** Scan confirmed complete fistula closure (arrow).

We report the case of a 47-year-old Caucasian woman, admitted due to weight loss, cough, fever, and dysphagia. She previously underwent ileal resection for tuberculosis involvement and was subsequently treated with ATT, remaining symptom-free until the admission. Barium swallow and chest computed tomography revealed evidence of BEF and middle lobe pneumonia (▶ **Fig. 1**, ▶ **Fig. 2**). The tracheobronchoscopy showed a small anomalous orifice, with a clear passage of mucus, in the medial aspect of the right main stem bronchus. At esophagogastroduodenoscopy, a 1-cm fistula was noted in the middle esophagus. Contrast injection of the esophagus, which leaked into the right bronchus, confirmed the fistula. A 12-mm over-the-scope clip (OTSC; Ovesco, Tübingen, Germany) was placed, and complete fistula closure was confirmed by regular contrast passage through the esophagus without leak (▶ **Video 1**). The patient started oral intake on the following day with progressive improvement of symptoms. At 1-month follow-up, no clinical or radiological signs of recurrence were recognized (▶ **Fig. 3**).

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Competing interests

Dr. Bassi has received travel grants from Olympus Italia. Dr. Cennamo is a consultant for and has received speaker fees and travel grants from Olympus Italia, Olympus Europa, Euromedical, and Novità Medicali. All other authors declare that they have no conflict of interest.

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