**Case report**

**Combined endoscopic approach in the treatment of benign broncho-oesophageal fistula**

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**ABSTRACT**

The treatment of benign broncho-oesophageal fistula is usually surgical but sometimes other methods of treatment are preferred. The case history is described of an adult in poor general condition in which an endoscopic approach combined with the use of fibrin glue on the bronchial side and metallic clips on the oesophageal side was used to close the fistula.

Broncho-oesophageal fistulas (BEFs) are rare and their aetiology may be congenital or acquired. In adults BEFs are usually acquired as it is rare for a congenital BEF to go undetected until adulthood, and they can be the result of malignant or benign processes. The latter can be of traumatic, inflammatory, infective or iatrogenic origin. The non-specific nature of the presenting symptoms may delay a correct diagnosis, and patients are often first seen for pulmonary infections. Surgery is usually the preferred treatment but in some cases—for example, in patients in a poor clinical condition—other approaches have been described.

We present a case in which a double endoscopic approach with the combined use of glue and endoclips was used to close a BEF in an elderly woman in poor clinical condition.

**DISCUSSION**

Benign BEFs are rare and, owing to the combination of their rarity and the non-specific nature of the symptoms, they can remain undiagnosed for a long time. The diagnosis may be made by endoscopic examination of the bronchi and oesophagus which may show a papilla or a dimple, or by oesophagography with dilute barium showing the contrast entering the bronchi. Sometimes, despite extensive investigation, the correct diagnosis is made only at surgery.

Although spontaneous healing of acquired BEF has been reported, the treatment of BEF is usually surgical and must be immediate in order to avoid complications and even fatal haemoptysis. Thoracotomy is the preferred surgical approach, with direct suturing or excision of the BEF, interposition of a pedicled flap and removal of damaged lung segments. In addition to surgery, other important steps include control of sepsis, establishment of a good nutritional status, pulmonary support and rehabilitation.

In some patients and in particular circumstances, treatment other than by surgery has been described. The use of sodium hydroxide and acetic acid solution via the bronchoscope and the oesophagoscope has been reported. Application of fibrin glue, alone or with the combined use of a Vicryl mesh, has been shown to be very useful in closing BEF in particular patients. It has the advantage of solidifying slowly, thus allowing a more homogeneous spread over the lesion. The use of stents has been described in malignant lesions associated with stricture, and double stent insertion (i.e., in the airway and in the oesophagus) has been reported as a superior option in closing such fistulas. The use of endoclips has been found useful either to anchor a stent or to directly close a fistula.

Our fistula was quite large and we thought that the application of only fibrin glue could result in closure failure. We therefore adopted a double endoscopic approach with the application of fibrin glue on the airway side, which is our normal practice in closing respiratory fistulas, and endoclips on the digestive side. To our knowledge, there...
are no other reports describing the contemporaneous use of fibrin glue and metal clips in closing BEFs.

Competing interests: None.

REFERENCES
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Thorax 2008 63: 1024-1025
doi: 10.1136/thx.2007.091686

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