Introduction

Bronchopleural fistula (BPF) is a severe and often dramatic complication after lung resection. Although the incidence is dropped over the last years reaching near to 4%, it remains a challenging situation for thoracic surgeons (1). The treatment can include several strategies, ranging from “wait and see” policy, medical therapy, redo surgery and endobronchial devices deployment. Recently, devices designed for closure of cardiac defects have been successfully used to repair BPF (2). We report a case of a patient with a late bronchopleural fistula. After several unsuccessful attempts to solve it, we definitively closed it using an atrial septal occluder.

Case presentation

A 74-year-old woman with a history of breast and bowel cancer underwent right lower lobectomy for a lung cancer. She developed a late bronchopleural fistula. After several unsuccessful attempts to solve it, we definitively closed it using an atrial septal occluder after several failed attempts with conventional techniques.
Figure 1E,F, white arrows) performed the day after, BPF was completely closed and the patient was successfully discharged. She remained asymptomatic for two years when she died because of recurrence of breast cancer.

Discussion

BPF is a rare but often severe complication after major pulmonary resections. Several risk factors have been reported to increase the risk of BPF as administration of induction and adjuvant chemo-radiotherapy, diabetes, impaired BMI, infections, postoperative mechanical ventilation (3). Surgery remains the gold standard treatment in case of massive early BPF and to treat the infective complications in late presentation. Also several endoscopic techniques as administration of fibrin glues, sealants, silver nitrate and albumin, staminal cells and placement of covered stents and endobronchial valves have been proposed with different degree of success (4). Recently, it has been implemented the use of devices designed to treat atrial septal defects to occlude BPF (5) but, differently from our case, in particular after pneumonectomy and in early postoperative period.

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Footnote

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**Ethical Statement:** The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Written informed consent was obtained from the patient for publication of this manuscript and any accompanying images.

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