

Clinical Image

Use of Endobronchial Valves in the Treatment of Alveolar-Pleural Fistula With Persistent Air Leak



Empleo de válvulas endobronquiales como tratamiento de fistula alveolo-pleural con fuga aérea persistente

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A 75-year-old man, former smoker (80 pack-years), with a history of childhood pulmonary tuberculosis, right lobectomy for empyema, severe chronic obstructive pulmonary disease (COPD) (GOLD 3E, FEV₁ 31%), and obesity-hypoventilation syndrome, presented with sudden-onset dyspnea. Chest radiography showed a complete left pneumothorax with contralateral volume loss (Fig. 1A, B). A chest drain (CareFusion Safe-T-centesis 8Fr[®]) was inserted, and persistent air leak was confirmed using an electronic drainage system (Thopaz[®]).

Initial bronchoscopies failed to identify the source. Bronchography was performed using a 2.0 mm radiopaque protected specimen catheter, 90 cm in length and 1.9 mm in diameter (Combicath, Prodimed), and 40 mL contrast medium (Omnipaque[®]). Selective bronchography of the left upper lobe demonstrated leaks in apical and anterior segments (Fig. 1C), leading to implantation of 3 Zephyr[®] endobronchial valves. Despite partial improvement, the air leak persisted. Repeat bronchoscopy with selective occlusion, using a 4Fr Olympus[®] occlusion balloon, 1050 mm in length and with a 2.0 mm channel diameter, revealed an additional leak in the lingula. A fourth Zephyr[®] valve was implanted, resulting in complete cessation of the leak. The procedure was carried out in the endoscopy suite under deep sedation using propofol as a single agent. Follow-up chest radiography confirmed resolution of the pneumothorax and lingular atelectasis secondary to valve placement (Fig. 1D). The chest drain was subsequently removed without recurrence.

Alveolo-pleural fistulas frequently complicate thoracic surgery and advanced COPD, often resulting in persistent air leaks that increase morbidity, hospital stay, and infection risk. Surgical closure remains the standard approach; however, many patients are ineligible due to comorbidities. Endobronchial valve placement provides a safe, minimally invasive, and effective alternative, provided accurate localization of the fistula is achieved.^{1,2}

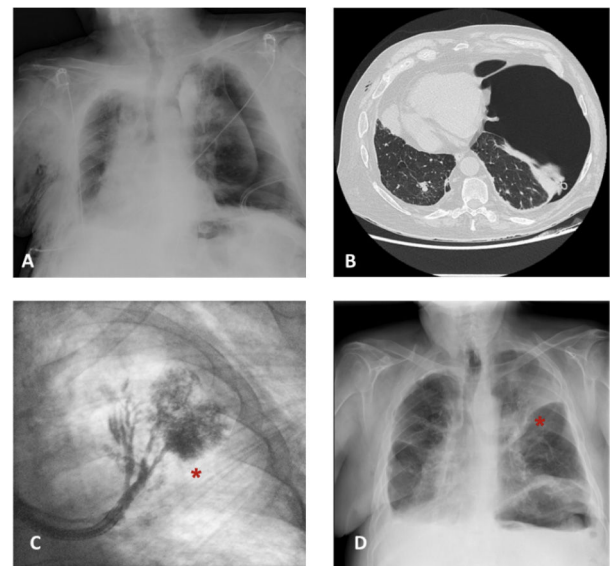


Fig. 1. (A) Portable chest radiograph showing left pneumothorax. (B) Chest computed tomography confirming persistent pneumothorax. (C) Fluoroscopic image demonstrating a bronchopleural fistula (*). (D) Posteroanterior chest radiograph showing resolution of persistent left pneumothorax.

Use of artificial intelligence

No artificial intelligence tools were used in the preparation, writing, or editing of this manuscript.

Informed consent

The patient gave verbal and written consent for the use of his medical record for educational purposes.

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Authors' contributions

Sergio García Morales and María Terán Sánchez: editing; Juan Francisco de Mesa Álvarez and Blanca de Vega Sánchez: correction; Carlos Disdier Vicente: revision.

Conflicts of interests

We declare that there are no conflicts of interest.

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