

Clinical Image

A Rare Cause of Massive Hemoptysis: Bronchial Dieulafoy's Disease Treated With Embolization

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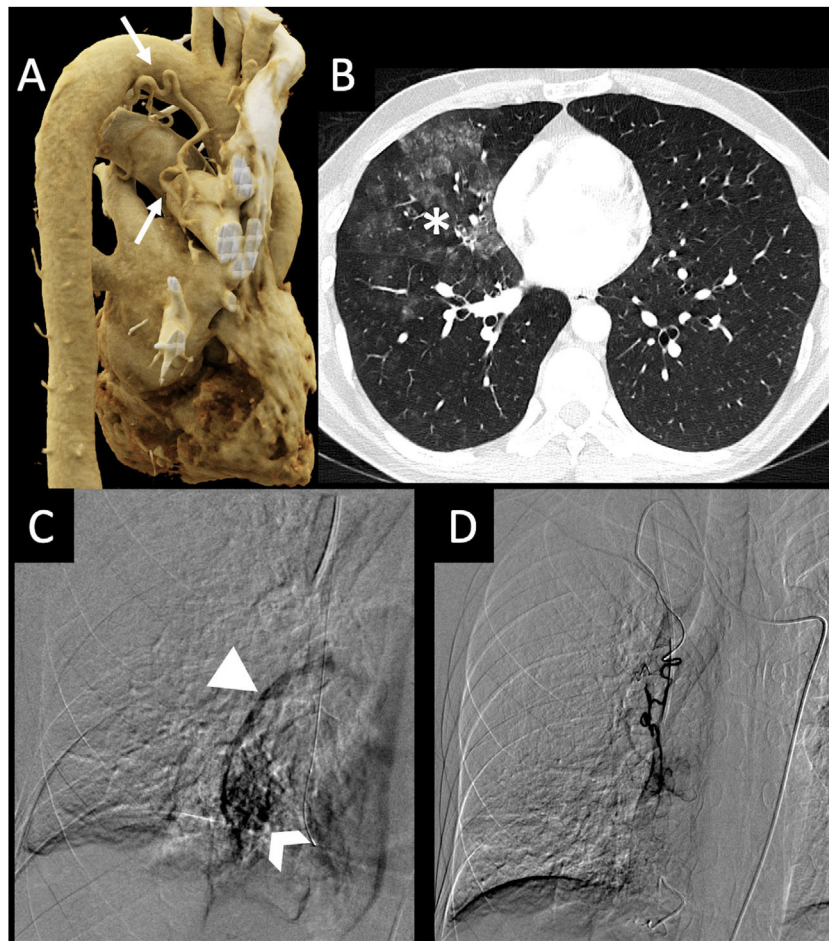


Fig. 1. Three-dimensional volumetric reconstruction image of chest CT (A) shows an enlarged ectopic right bronchial artery arising from the undersurface of the aortic arch (arrows). Axial plane pulmonary window CT (B) shows extensive patchy ground-glass opacities in the middle lobe and right lower lobe, consistent with alveolar hemorrhage. Digital subtraction angiography through the right internal mammary artery (C) shows a branch that serves a basal vascular nidus (chevron arrow), which has a direct connection with the respective segmental pulmonary vein (arrowhead). Successful embolization of the lesion was performed (D). These findings are compatible with angiographic findings of bronchial Dieulafoy's disease.

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A 48-year-old male smoker with bronchiectasis presented with acute hemoptysis. A CT scan revealed right-sided enlarged bronchial arteries and alveolar hemorrhage. Initial embolization of the right bronchial artery using 300–500 μm microspheres was successful, but the patient experienced recurrent hemoptysis. Despite two additional embolizations targeting partial repermeabilization of the right bronchial artery and a mildly hypertrophied left bronchial vessel using 400 μm microspheres, hemoptysis persisted. A fourth angiography identified the bleeding source: a branch of the right internal mammary artery leading to a basal vascular nidus that connected with the segmental pulmonary vein, consistent with bronchial Dieulafoy's disease (BDD). Targeted embolization with a non-adhesive liquid agent (ethylene-vinyl alcohol 18) was performed to achieve a more controlled and definite embolization. This led to successful obliteration of the lesion and hemorrhage (Fig. 1).

BDD is a rare but clinically significant condition characterized by dysplastic submucosal arteries prone to bleeding. BDD should be considered in cases of unexplained, massive, and recurrent hemoptysis, particularly when localized to the right bronchus. The cause of this condition remains unclear but may involve congenital vascular malformations or chronic airway inflammation, exacerbated by factors like smoking and bronchiectasis. Diagnosis often relies on bronchoscopy or bronchial angiography, with biopsy generally avoided due to hemorrhage risk. Treatment options include conservative drug therapy and bronchial arterial embolization, with surgical interventions reserved for refractory cases.^{1,2}

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Conflicts of Interest

The authors declare not to have any conflicts of interest that may be considered to influence directly or indirectly the content of the manuscript.

Artificial Intelligence Involvement

Material has not been produced with the help of any artificial intelligence software or tool.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.arbres.2024.08.003](https://doi.org/10.1016/j.arbres.2024.08.003).

References

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