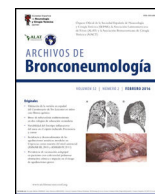




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Clinical Image

Diagnosis of Invasive Pulmonary Fungal Infection Using Robotic Bronchoscopy

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A 70-year-old man with a history of acute myelocytic leukemia presented with a cough for several weeks. Imaging revealed an enlarging cavitary nodule in the left upper lobe (top right, image). Blood work-up, including serum (1→3)-β-D-glucan, and sputum cultures were negative. We performed robotic bronchoscopy to navigate to the left upper lobe lesion [1]. At the target site, the bronchial mucosa appeared dark and necrotic (left panel, video). Bronchoalveolar lavage (BAL) and transbronchial biopsies were performed here. BAL cultures remained negative, and BAL galactomannan was normal. Histopathological examination of the transbronchial biopsies revealed necrotic lung tissue with fungal hyphae (bottom right, image). He was treated with amphotericin B and then isavuconazonium sulfate for 4 months for invasive pulmonary fungal infection (possibly zygomycetes). He has now been off treatment for 5 months and continues to do well. Considering that blood and BAL fungal cultures, as well as biomarkers, were negative, our case highlights the importance of targeted bronchoscopic examination and biopsies of pulmonary lesions in cases of suspected fungal infections. Robotic bronchoscopy can be an invaluable tool in these cases, as it not only allows for targeted biopsies but also provides endoscopic visualization of small peripheral pulmonary lesions, which can offer additional diagnostic cues, as in our case.

CRediT authorship contribution statement

MSA conceived the project and assisted with manuscript writing. AB and UKG contributed to video editing and manuscript writing. All authors reviewed and approved the final submission.

Declaration of generative AI and AI-assisted technologies in the writing process

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Conflicts of interest

Authors have no conflicts of interest to disclose.

Appendix A. Supplementary data

Supplementary data associated with this article can be found in the online version available at <https://doi.org/10.1016/j.arbres.2025.10.002>.

Reference

- [1] Ali MS, Ghori UK, Wayne MT, Shostak E, De Cardenas J. Diagnostic performance and safety profile of robotic-assisted bronchoscopy: a systematic review and meta-analysis. *Ann Am Thorac Soc* 2023;20:1801–12.

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