

BRONCHOSCOPIC VIEW OF POST-TUBERCULOSIS LUNG CAVITY

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Consent Statement

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy

CASE HISTORY AND DISCUSSION

A male in his 60's was seen in the pulmonary medicine outpatient clinic. He is a former smoker who was diagnosed with sputum positive pulmonary tuberculosis 4 years ago and was initiated on anti-tuberculous drugs, which he took for six months and was declared to be cured at the end of treatment. He was also diagnosed with Type 2 diabetes mellitus and has been on oral hypoglycemic agents. For the last 3 years, he has been having streaky hemoptysis for which he was prescribed short courses of tranexamic acid with transient improvement.

He presented to our clinic with two episodes of large volume hemoptysis which occurred about 10 days prior to his visit. He also reported a 12kg weight loss in the last 3 months. His physical examination was unremarkable. Routine laboratory investigations revealed leukocytosis of 14,400/m³, elevated glycated hemoglobin of 12.2% and mild anemia (10.4g/dL) with normal platelet counts, normal serum creatinine level and normal blood coagulation indices. Sputum Xpert TB PCR did not detect *Mycobacterium tuberculosis*.

Imaging revealed a thick walled fibrocavitary lesion with surrounding consolidation in the posterior segment of the right upper lobe with the posterior segment bronchus leading into the cavity. Nodular consolidation was also noted in the left upper lobe (Figure 1). There were no hypertrophied bronchial arteries seen in the imaging study.

Bronchoscopy with bronchoalveolar lavage was planned to exclude reinfection or reactivation of tuberculosis or other bacterial or fungal infection. Bronchoscopy was done using a 5.8mm adult bronchoscope which revealed an essentially normal tracheobronchial tree up to the level of the lobar bronchi. A 3.8mm paediatric bronchoscope was navigated through the right upper lobe posterior segment bronchus into one of its

subsegments which led into a cave-like structure which extends to the apical segment of the right upper lobe. (Figure 2, Video 1).

Bronchoalveolar lavage samples were taken from the posterior segment of the right upper lobe, and bacterial cultures grew *Klebsiella pneumoniae*. Fungal cultures were negative. *Mycobacterium tuberculosis* was not detected from Xpert TB PCR and *Mycobacterial* growth indicator tube (MGIT) culture did not grow any *Mycobacterium* species.

Studies have shown that up to 91% of patients successfully treated for tuberculosis develop some form of parenchymal or pleural sequelae. (1) This underlines the importance of early diagnosis and treatment of post-TB sequelae in order to prevent complications.

Hemoptysis is a common symptom of post-TB infections. Important etiologies to consider in the evaluation of patients with respiratory symptoms after TB treatment include fungi (particularly *Aspergillus* spp.), non-tuberculous mycobacteria, and other bacteria. (2)

Between 20-50% of patients with cavitary TB have persistent cavities after completion of anti-TB treatment. (3) Cavities can be thin- or thick-walled, and may or may not contain fungal balls. (2)

The healing response following cavitary TB is incomplete and results in fibrotic scarring which can lead to open or closed healing. Open healing poses a significant risk for opportunistic infections and a combination of high humidity, warm temperatures, immune sheltering, and lack of innate defenses provide an opportunity for secondary colonization with bacteria or fungi. (3)

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Conflict of Interest

The authors declare that they no relevant conflict of interest in the publication of this report.



