



Bloodstained sputum of unknown etiology

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A 72-year-old male, former smoker presented to his physician, reporting cough and bloodstained sputum. The patient reported no asthenia, appetite loss, or significant weight loss. He was transferred to an emergency room and was involved in a traffic accident during interhospital transfer, resulting in polytrauma (including thoracic trauma). At admission, the patient presented with hemodynamic stability, dyspnea, amnesia, and an injury to the scalp. Lung auscultation revealed breath sounds and bilateral rhonchi.

An X-ray of the chest (Figure 1) showed an alveolar-interstitial pattern in the right lung, and a CT scan of the chest (Figure 2) revealed thickening of the posterior wall of the main right bronchus and a decrease in the caliber of its emergence as well as in the distal caliber of the right upper lobe bronchus.

Given the context of thoracic trauma and the imaging findings, bronchoscopy was performed in order to collect bronchial secretions, BAL fluid, and biopsy samples. The bronchoscopy revealed violaceous, edematous mucosa, together with infiltrate showing spur cells, in the right upper lobe bronchus; lumen reduction of segmental bronchi; and caseous necrosis resembling "candle wax drippings" (Figure 3). The bronchoscopy results (no evidence of active bleeding) allowed us to exclude bronchial rupture due to the trauma. Direct microscopy and bacterial culture of bronchial secretions led to a diagnosis of endobronchial tuberculosis, the etiological agent being identified as *Mycobacterium tuberculosis* complex.

Despite advances in the diagnostic modalities, the diagnosis of endobronchial tuberculosis continues to represent a challenge. Chest CT and bronchoscopy are valuable tools for obtaining the pathological diagnosis.

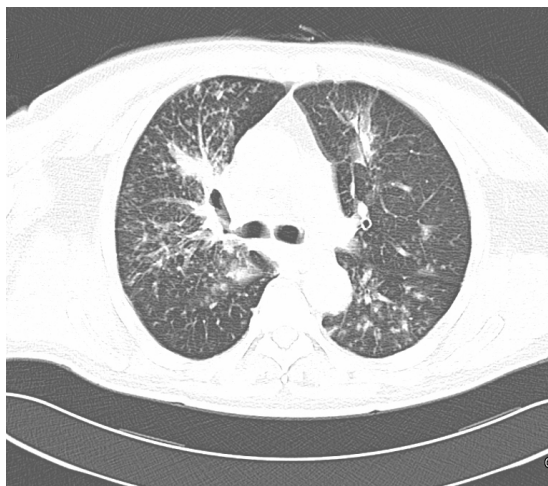


Figure 2. An axial CT scan of the chest, showing posterior wall thickening in the right main bronchus and a decrease in its caliber, as well as irregularities at the emergence of the right upper lobe bronchus.

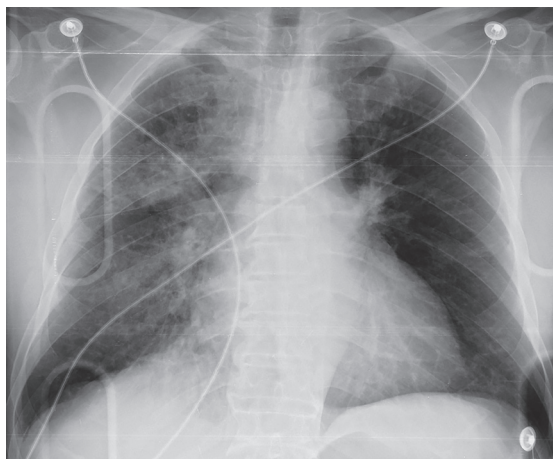


Figure 1. Posteroanterior chest X-ray revealing an alveolar-interstitial pattern in the right lung, with signs of ipsilateral volume loss.

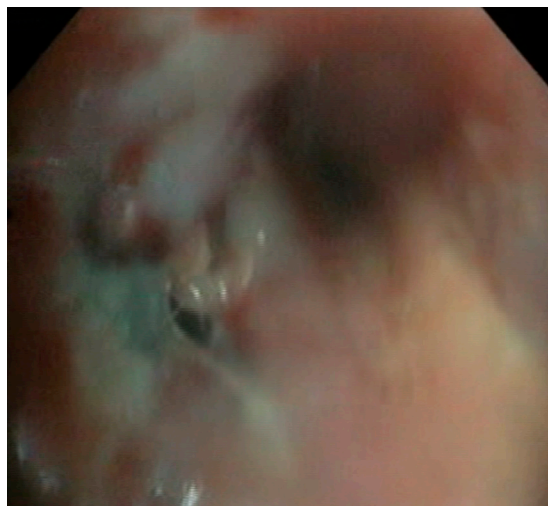


Figure 3. Bronchoscopic image showing the aspect of the lesion prior to biopsy: infiltrate showing spur cells; lumen reduction of segmental bronchi; and caseous necrosis resembling "candle wax drippings".

RECOMMENDED READING

1. Chung HS, Lee JH. Bronchoscopic assessment of the evolution of endobronchial tuberculosis. *Chest*. 2000;117(2):385-92. <https://doi.org/10.1378/chest.117.2.385>
2. Sucena M, Amorim A, Machado A, Hespanhol V, Magalhães A. Endobronchial tuberculosis – clinical and bronchoscopic features [Article in Portuguese]. *Rev Port Pneumol*. 2004;10(5):383-91. [https://doi.org/10.1016/S0873-2159\(04\)05014-7](https://doi.org/10.1016/S0873-2159(04)05014-7)

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