

Tuberculosis: In and Out of the Airways

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A 23-year-old Chinese woman presented with worsening exertional dyspnea. Her medical history was notable for pulmonary tuberculosis treated at the age of 16. Over the past 3 years, she reported progressive respiratory symptoms resulting in marked exercise intolerance. She denied any fevers, cough, or weight loss. On examination, she had right-sided tracheal deviation but spoke comfortably. Her heart sounds were displaced and right-sided breath sounds nearly absent. Chest x-ray (Fig. 1) and subsequent CT revealed complete collapse of the right lung with associated hyperexpansion of the left lung and left-to-right mediastinal shift (Fig. 2, with an asterisk denoting the aortic arch; an arrow, the right main-stem bronchus, which would soon terminate; and arrowheads, the collapsed right lung). No lung masses or effusions were noted; active TB had been ruled out with AFB sputums. Bronchoscopy revealed a fibrotic and stenotic right main-stem bronchus (Fig. 3, with an asterisk denoting a patent left main-stem bronchus and an arrow denoting a stenotic right main-stem bronchus). Pulmonary manifestations of TB include

parenchymal and endobronchial disease. Patients more likely to develop endobronchial disease include those with extensive pulmonary involvement, particularly cavitary lesions. Between 10% and 20% of patients with endobronchial disease will have normal CXRs, though CT scans may reveal endobronchial lesions or narrowing. Complications of endobronchial disease include obstruction, bronchiectasis, and tracheal or bronchial stenosis. Some airway obstructions may be associated with enlarging peribronchial nodes, which may erode into the airways as broncholiths. Steroids have been used to prevent long-term complications, but their efficacy is still unclear. Repeated dilation, stenting, and resection all serve as management options for advanced endobronchial disease. In our patient, the extensive bronchial scarring and stenosis were most likely complications from past endobronchial

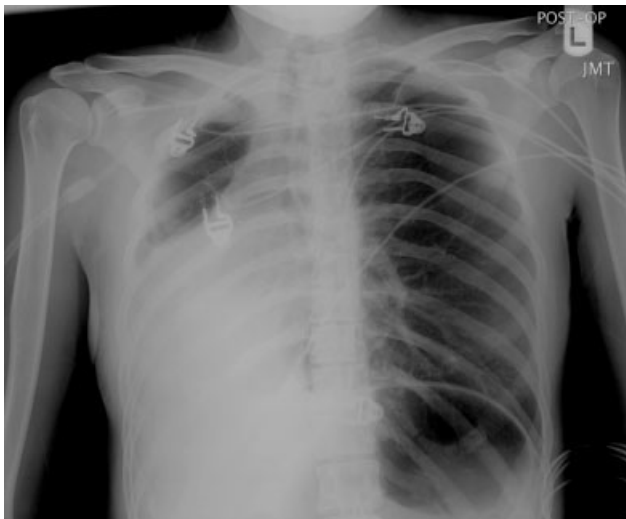


FIGURE 1. Chest x-ray.

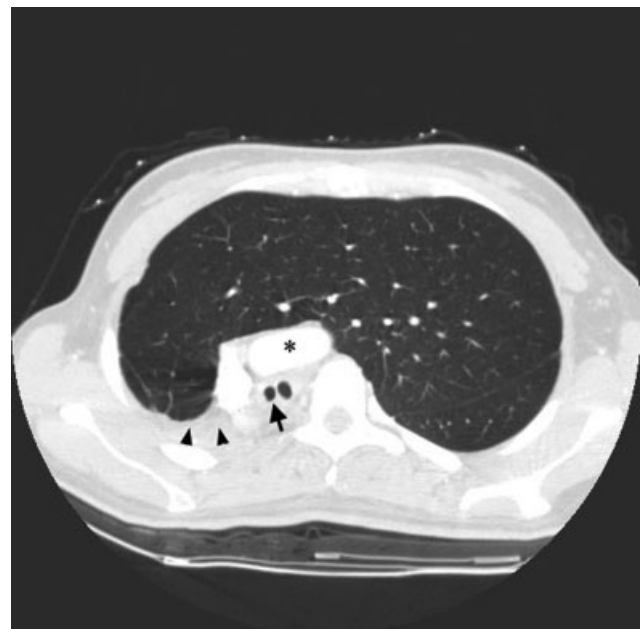


FIGURE 2. Chest CT, with an asterisk denoting the aortic arch; an arrow, the right main-stem bronchus, which would soon terminate; and arrowheads, the collapsed right lung.

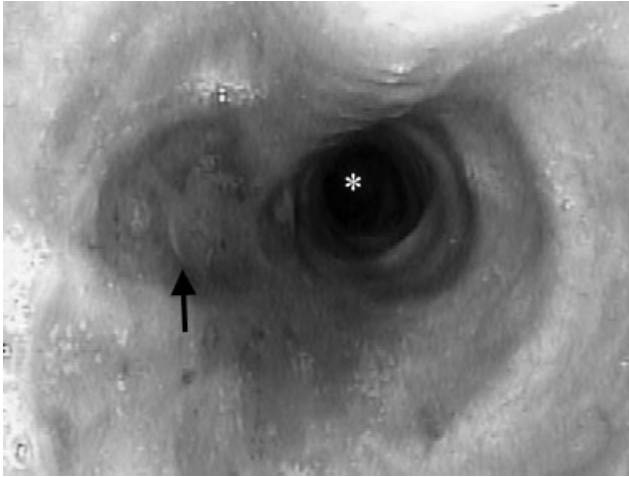


FIGURE 3. Bronchoscopy, with an asterisk denoting patent left main-stem bronchus and an arrow denoting stenotic right main-stem bronchus.

infection. Unfortunately, attempts at balloon dilatation of her right main-stem bronchus were unsuccessful, and she continues to have considerable exercise limitation. More prompt recognition of the disease may have allowed for an earlier and more successful intervention.

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