

Imaging of acute dissemination of tuberculosis caused by alveolar lavage surgery in endobronchial tuberculosis characterized by caseous necrosis

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Abstract

Large amount of caseating overlying on bronchus were detected under bronchoscopy in our case. Bronchoalveolar lavage is a major method for diagnosing tuberculosis (TB). TB dissemination caused by bronchoalveolar lavage is very rare. In this case, the patient developed fever after bronchoalveolar lavage and CT confirmed acute dissemination. This might be related to caseating EBTB.

KEYWORDS

alveolar lavage, caseous necrosis, dissemination, tuberculosis

CLINICAL IMAGE

A 38 year old woman, presented with cough and expectoration for 1 month. Computed tomography (CT) showed stenosis of left main bronchus and left upper lobe bronchus, scattered patchy and nodular shadows in left upper lobe and left lower lobe (Figure 1). Fiberoptic bronchoscopy showed that large amount of white moss covered the left main bronchus and left upper lobe bronchus, and the left lingular bronchus was obstructed (Figure 2A–D). We perform a biopsy on the mucosa of left upper lobe bronchus. Pathology indicated caseous necrosis and acid-fast bacilli were observed (Figure 2E–G). Then, the bronchoalveolar lavage fluids (BALFs) from left upper lobe apicoposterior segment (B1/2) were collected and we found that tuberculosis DNA was positive in BALFs. However, the patient developed persistent fever after bronchoscopy examination and maximum body temperature was 41.0°C. CT of the thorax showed large area of consolidation and patchy shadows in the upper and lower dorsal segments of the left lung (Figure 3). We considered the occurrence of acute dissemination of tuberculosis.

Endobronchial tuberculosis (EBTB) is defined as a tuberculous infection of the tracheobronchial tree with microbial and histopathological evidence.¹

Bronchoalveolar lavage (BAL) is a major method to diagnose pulmonary tuberculosis (TB).^{2,3} In this case, the patient developed persistent fever after bronchoalveolar lavage and CT findings confirmed the presence of acute dissemination. This might be related to active caseating EBTB.

AUTHOR CONTRIBUTIONS

Yunjie Cui and Cuiping Yang were the lead author involved in drafting the initial manuscript and preparing the images. Cuiping Yang and Bo Wang provided radiological expertise including interpretation and description of the images. All authors contributed to the writing, review and final approval of the manuscript.

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Yunjie Cui and Bo Wang have contributed to the article equally.

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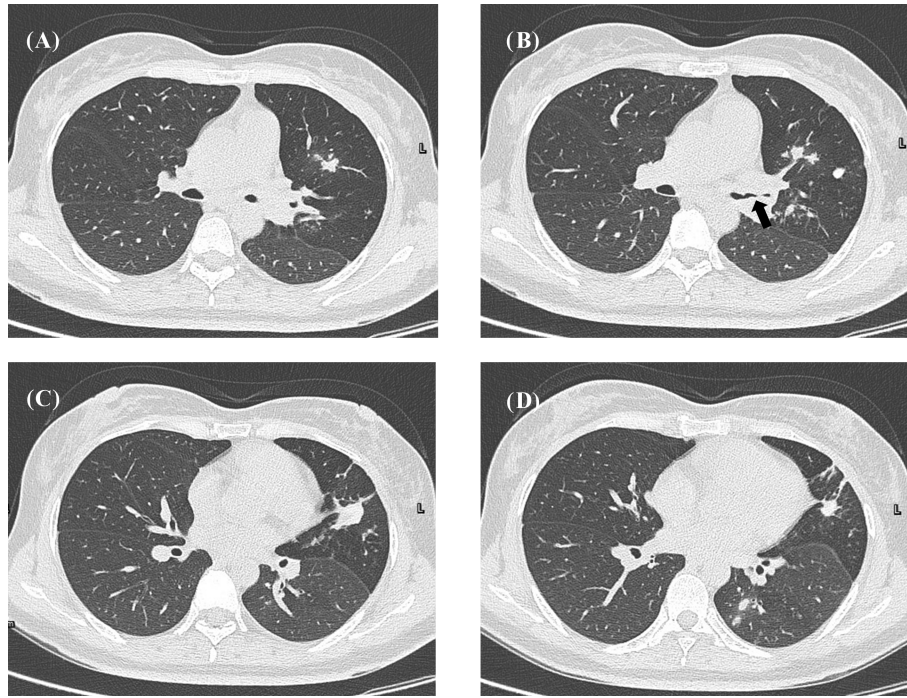


FIGURE 1 Computed tomography of the thorax. (A–D) Obvious stenosis (black arrow) of left main bronchus and left upper lobe bronchus, scattered patchy and nodular shadows in the left upper lobe and left lower lobe-superior segment.

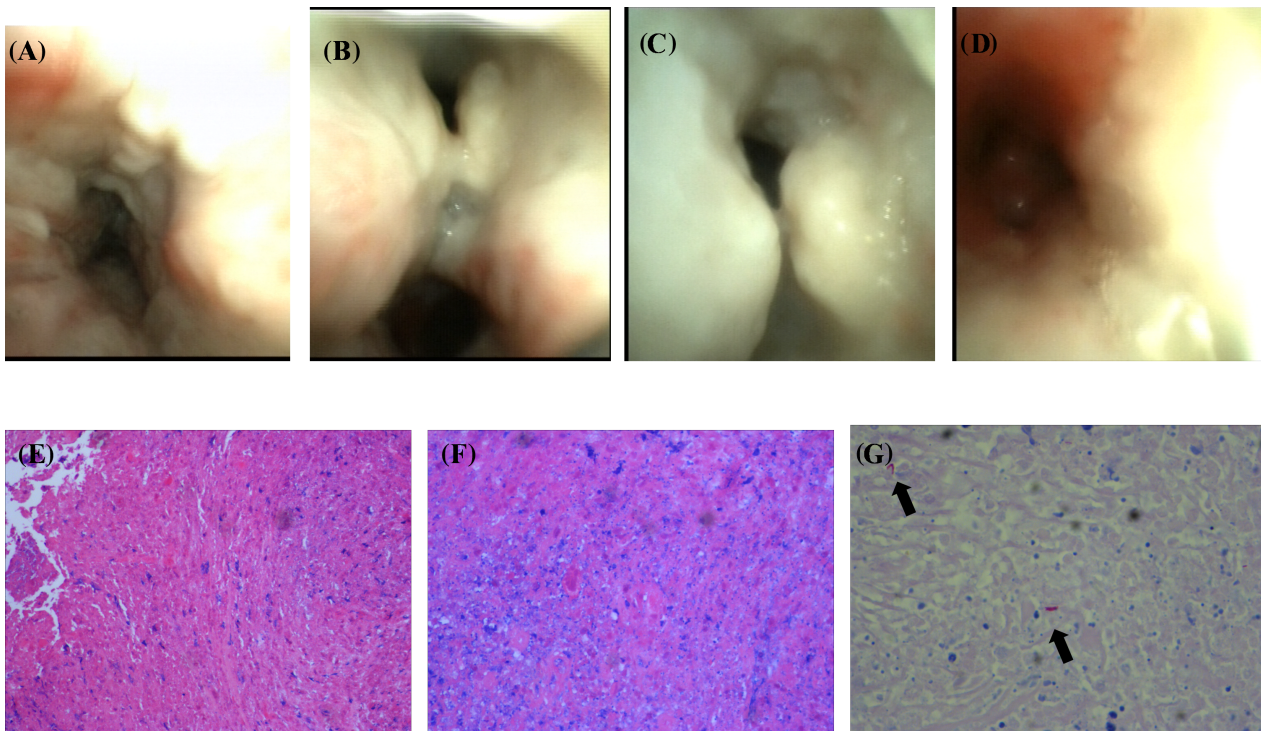


FIGURE 2 Image under bronchoscopy and Pathology. (A–B) left main bronchus covered by white moss; (C) left upper lobe bronchus covered by white moss; (D) left upper lobe-apicoposterior and anterior segment was normal; left lingular bronchus was obstructed; (E–F) caseous necrosis (Haematoxylin and eosin staining; E: $\times 100$; F: $\times 200$); (G) acid-fast bacilli (black arrows) (Ziehl-Neelsen staining; G: $\times 400$).

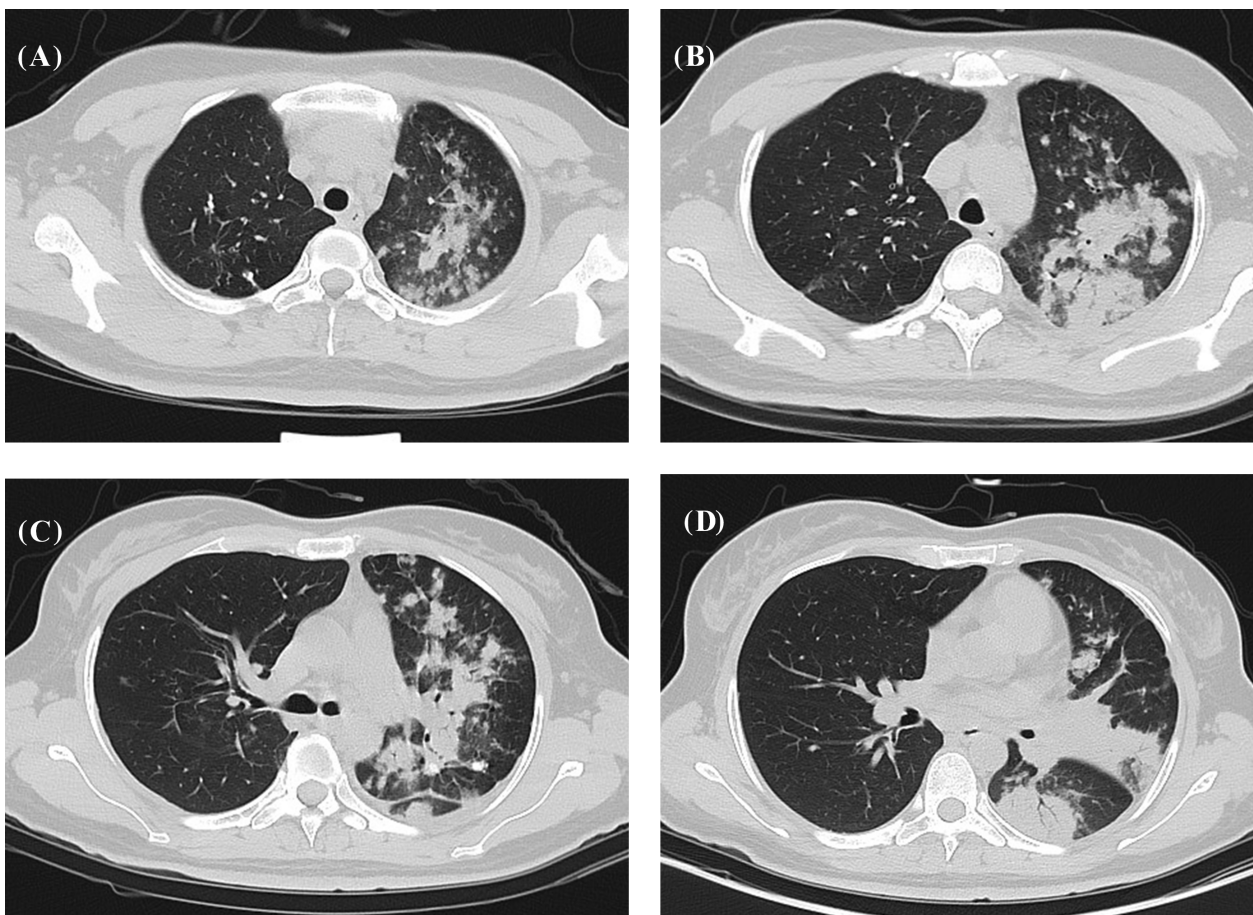


FIGURE 3 Computed tomography of the thorax after bronchoalveolar lavage. (A–D) Large area of consolidation and patchy shadows in the upper and lower dorsal segments of the left lung.

CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author.

ETHICS STATEMENT

Patient consent for publication has been obtained prior to submission. Participants gave informed consent to participate in the study before taking part.

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