

A case of tuberculous pleurisy characterized by bleeding and necrosis documented by medical thoracoscope

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Key message

Tuberculous pleurisy is a main cause of pleural effusions. The main histological abnormalities in pleural biopsy of tuberculous pleurisy are caseating granulomas and epithelioid cell granuloma. In our case, chronic inflammation of fibrous tissue with bleeding, necrosis, and exudation were observed during a medical thoracoscopy as manifestations of tuberculous pleurisy.

KEYWORDS

bleeding, medical thoracoscope, necrosis, tuberculous pleurisy

CLINICAL IMAGE

A 54-year-old man, clinically diagnosed with tuberculous pleurisy presented with cough and chest pain and stuffiness for 2 months. He had intermittent thoracic closed drainage as treatment but the pleural effusion recurred. He had a history of pulmonary tuberculosis 30 years previously but had failed to receive standardized anti-tuberculosis treatment. Enhanced computed tomography (CT) of the thorax showed left encapsulated pleural effusion with multiple septations, bilateral pleural thickening and calcification (Figure 1). Medical thoracoscopy (MT) was performed via the left 7–8th rib gap and this showed multiple fibrinous strands, web-like adhesions and necrotic tissues between the lung and chest wall with bleeding and hemorrhagic effusion (Figure 2). We performed a biopsy of the parietal pleura. The pathologic finding was chronic inflammation of fibrous tissue with bleeding, necrosis, and exudation (Figure 3). A test of the pleural effusion showed Xpert MTB/RIF (+), ADA 46 U/L. Then the patient was given 6 months of anti-tuberculosis treatment and subsequently pleural exfoliation surgery was performed.

Tuberculous pleurisy, a common manifestation of extra-pulmonary TB (Tuberculosis), is the main cause

of pleural effusions. Delayed hypersensitivity reaction to mycobacterial protein was considered the main cause in the pathogenesis of tuberculous pleural effusion (TPE). In addition, the direct spread of subpleural caseous focus in the lung into the pleural space was another cause of TPE.^{1,2} Under MT, the main abnormalities on the surface of parietal and visceral pleura of tuberculous pleurisy are pleural nodules, pleural adhesion, plaque-like lesions, hyperemia and ulcer.³ In this case, multiple fibrinous strands, web-like adhesions and necrotic tissues between the lung and chest wall with bleeding and hemorrhagic effusion were observed. In addition, the main histological abnormalities in pleural biopsy of tuberculous pleurisy are caseating granulomas and epithelioid cell granuloma.³ In this case, chronic inflammation of fibrous tissue with bleeding, necrosis, and exudation were observed in this pleural biopsy. In this case, the image seen under MT and the histologic finding on pleural biopsy is relatively rare.

AUTHOR CONTRIBUTIONS

Minlong Zhang and Yinghua Guo were the lead author involved in drafting the initial manuscript and preparing the images. Minlong Zhang and Cuiping Yang provided

Minlong Zhang and Cuiping Yang have contributed to the article equally.

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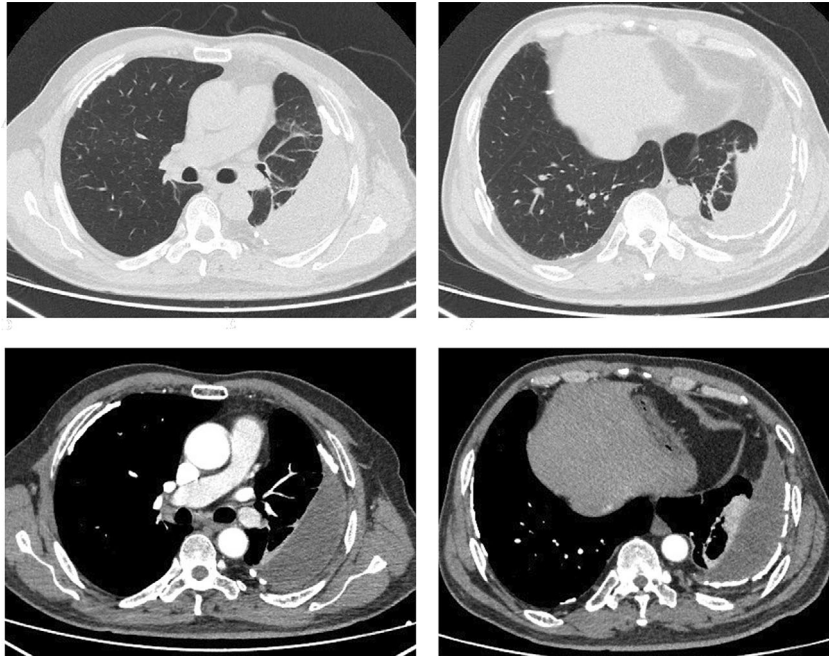


FIGURE 1 Enhanced computed tomography of the thorax showed left encapsulated pleural effusion with multiple septations, bilateral pleural thickening and calcification.

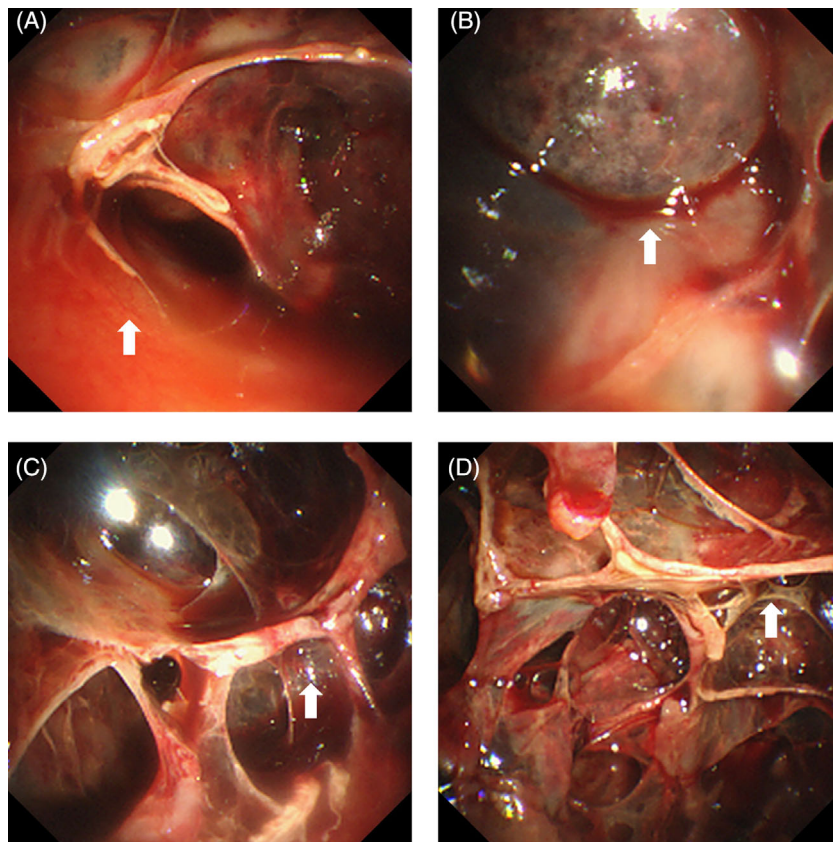


FIGURE 2 Image under medical thoracoscopy. (A) Hemorrhagic effusion (white arrow) in thoracic cavity; (B) fibrinous strands and bleeding (white arrow) in visceral pleura; (C, D) web-like adhesions (white arrow), necrosis and bleeding in parietal pleura.

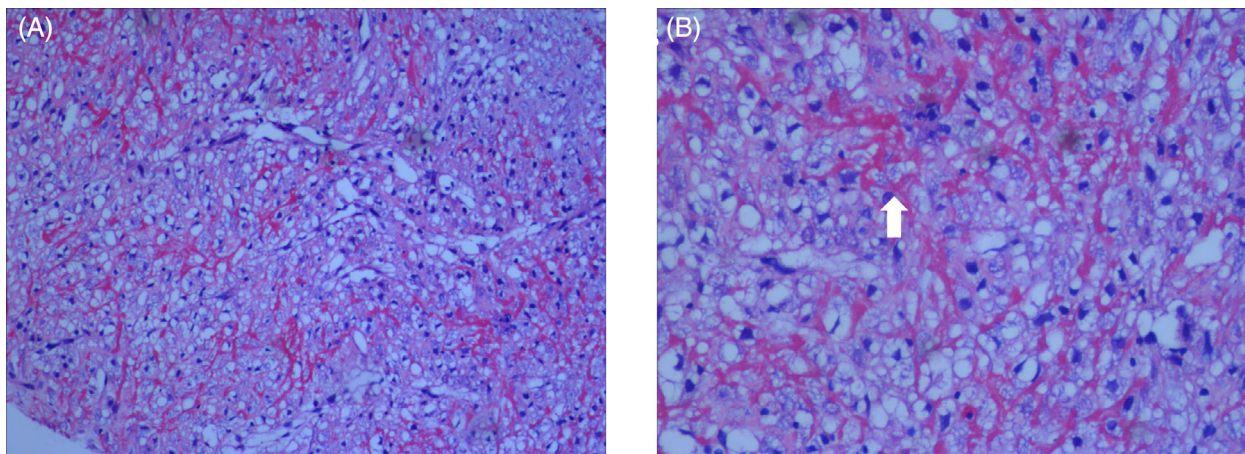


FIGURE 3 Pathology of pleural biopsy. Chronic inflammation of fibrous tissue with bleeding (white arrow), necrosis and exudation. (Haematoxylin and eosin staining; A: $\times 100$; B: $\times 200$).

radiological expertise including interpretation and description of the images. All authors contributed to the writing, review and final approval of the manuscript.

CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

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

ETHICS STATEMENT

The authors declare that appropriate written informed consent was obtained for the publication of this manuscript and accompanying images.

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