

Recurrent Tuberculous effusion Leading to Pneumothorax Ex vacuo after Pleural Drainage

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History: An 89-year-old male with history of pulmonary tuberculosis on RIPE presented from skilled nursing facility due to respiratory distress. He was diagnosed with pulmonary tuberculosis four months prior to admission, when he was found to have a large right pleural effusion and subsequent *Mycobacterium tuberculosis* growth in the pleural fluid removed via thoracentesis. In the ED, CXR revealed recurrence of large right-sided pleural effusion and consolidation of right middle and lower lung. CT chest showed large right-sided loculated effusion, possible empyema, with consolidation of right lower lobe. A right chest tube was

placed to drain the effusion, and approximately 1L pleural fluid was removed. A follow-up CXR was completed, which revealed a subsequent right hydropneumothorax, likely representing trapped lung. Cardiothoracic surgery was consulted for possible decortication, however the patient was not a surgical candidate due to numerous underlying comorbidities. Due to chronic tuberculosis, the lung was not expected to re-expand. The chest tube was left in place with continued hydropneumothorax. The patient was transitioned to hospice care.

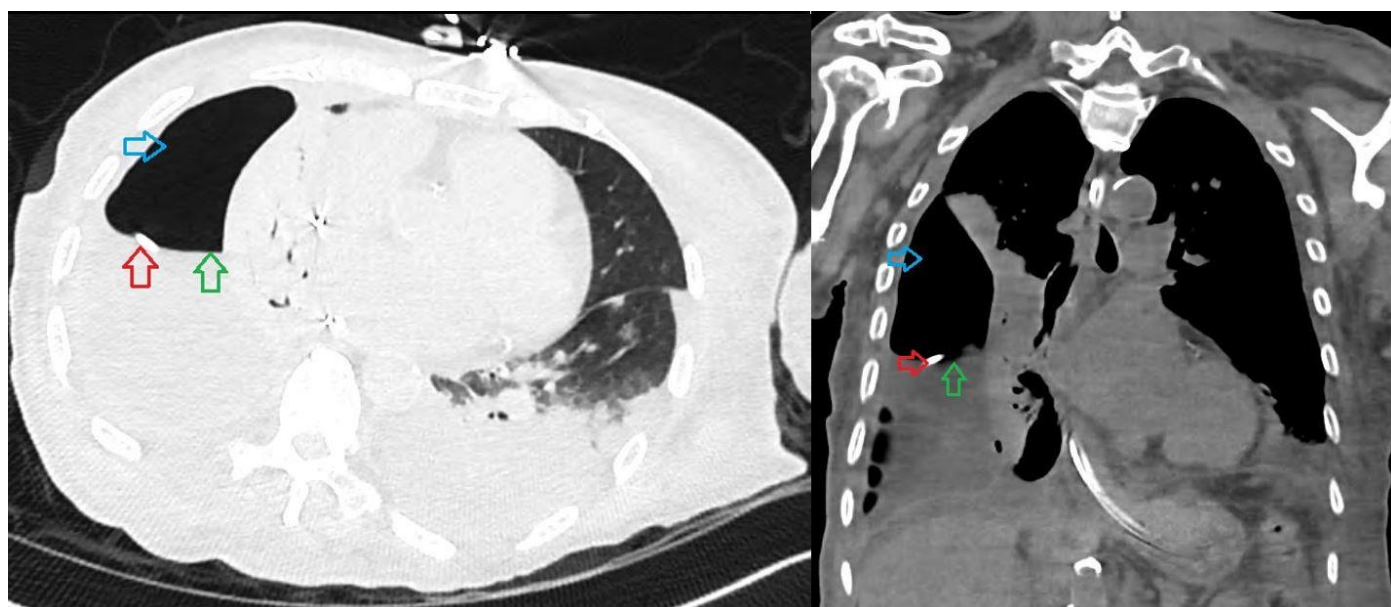


Figure 1: Chest CT showing pneumothorax (blue arrow) status post pleural drainage with chest tube in place (red arrow) and air fluid level (green arrow).

Discussion

Globally, tuberculosis represents the most significant infectious cause of death, especially in impoverished populations [1]. An estimated 10 million new cases of tuberculosis were identified in 2019, according to the WHO [2]. Pulmonary tuberculosis commonly causes pleural effusions, which can become recurrent. In areas where TB is endemic, incidence of TB-related pleural involvement is approximately 30%; in non-endemic areas, incidence is about 3-5%. Additionally, residual pleural thickening and fibrous changes can occur in 50% and 20-46% patients, respectively [3]. Thoracentesis of such pleural effusions will often result in trapped lung and hydropneumothorax, subsequent to TB-related fibrotic changes in the lung. Chest CT is a valuable method to evaluate pleural effusion and pneumothorax ex vacuo. For definitive

treatment, surgical decortication/video-assisted thoracoscopic surgery (VATS) may be considered.

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