Case Report

Recurrent pneumothorax: A rare complication of miliary tuberculosis

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Abstract

Context: Recurrent pneumothorax is common in cavitary pulmonary tuberculosis, but it is extremely rare in miliary tuberculosis. Case Report: A 25 year old female patient presented to us with the complains of shortness of breath since 3 days. She was also having fever and cough since 3 months. Chest roentgenogram (PA view) on admission showed a left sided pneumothorax with miliary mottling. An intercostals tube drainage was done on the left side resulting in relief of symptoms. Two days post intercostals tube drainage chest X ray (PA view) showed complete resolution of pneumothorax, and intercostals tube was removed. Patient was discharged on antitubercular drugs. After 1 month patient again presented to us with severe breathlessness, on repeat chest X ray pneumothorax again developed on left side, urgent intercostals tube drainage was done, and patient relieved immediately. Patient was kept in the hospital for 12 days and, and was discharged after intercostals tube removal. Conclusion: If a patient of miliary tuberculosis presents with shortness of breath diagnosis of pneumothorax should be considered.

Keywords: Recurrent pneumothorax, miliary tuberculosis.

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Introduction

Miliary tuberculosis refers to clinical disease resulting from the uncontrolled hematogenous dissemination of mycobacterium tuberculosis. The term ‘miliary’ was coined in 1700 AD by John Jacobus Manget, who described the appearance of the involved lung - with its surface covered with firm small white nodules resembling millet seeds. Pneumothorax is a well known complication occurring in cavitary tuberculosis.

However, it is seldom seen in patients with military tuberculosis. Pneumothorax is potentially life threatening in association with miliary tuberculosis and its symptoms may be masked by those of miliary tuberculosis, leading to avoidable delay in the diagnosis of pneumothorax [1, 2]. Here we are presenting a case of recurrent pneumothorax in military tuberculosis.

Case Report

A 25 year old female patient presented to us with the complains of shortness of breath since 3 days, which was sudden in onset, associated with left sided chest pain. She was also giving history of fever and cough since 3 months. She had pallor, but no clubbing, jaundice or lymphadenopathy. On vitals examination pulse rate was 100/min; respiratory rate 30/min, blood pressure 100/70 mm Hg and temperature 99°F. Chest movements were diminished on the left side with a slight shift of trachea to the right side. Percussion revealed a hyperresonant note on the left side with markedly diminished breath sounds. Other systemic examinations findings were unremarkable. Laboratory investigations revealed a moderate anemia (8.6 gm%) with a normocytic, normochromic peripheral blood picture and a high total leucocytic count (12,400 mm³) with lymphocytosis (70%). ESR was 54 mm at the end of 1 hour. Chest roentgenogram done 10 days prior to
admission showed bilateral miliary shadows. Chest roentgenogram (PA view) on admission showed a left sided pneumothorax with miliary mottling (Figure 1a). An intercostal chest tube drainage connected to an underwater seal bottle was put on the left side resulting in relief in symptoms, and patient was put on antitubercular treatment. Two days post intercostal chest tube drainage chest X-ray (PA view) showed complete resolution of pneumothorax (Figure 1b) and intercostal chest tube drain was removed. Patient was discharged on antitubercular drugs. After 1 month patient again presented to us with severe breathlessness, on repeat chest X ray (PA view) pneumothorax again developed on left side (Figure 2), urgent intercostal chest tube drainage was done, and patient relieved immediately. Patient was kept in the hospital for 12 days and intercostal chest tube drain was removed. Patient was discharged.

**Discussion**

Acute military tuberculosis is due to hematogenous spread of primary infection in patients having poor defense mechanism due to malnutrition, intercurrent disease, corticosteroid or immunosuppressive drug therapy [3]. Originally a pathologic and then a radiological description, the term ‘miliary TB’ is now used to denote all forms of progressive, widely disseminated hematogenous tuberculosis, even if the classical pathological or radiological findings are absent [4]. Pneumothorax is a well known complication occurring in cavitary tuberculosis. However, it is seldom seen in patients with military tuberculosis [5]. Although miliary pattern and pneumothorax are rare radiological features in pulmonary tuberculosis. Their incidences are nearly 1.3% and 1.5%, respectively [6]. Pneumothorax is rare, it is potentially life threatening in association with miliary tuberculosis. It is likely to be missed as the breathlessness and the dry cough that are the cardinal features of pneumothorax are also seen in patients with miliary tuberculosis without any pneumothorax [7]. Frequently, pneumothorax is not seen at the beginning of therapy but is seen during the course of treatment when it is least expected [8]. This warrants the treating physicians to be perceptive of the worsening of the clinical course of miliary tuberculosis when the patient presents with increasing dyspnea because of pneumothorax, which is a life-threatening emergency, may be the underlying pathology [8, 9], and can be managed and treated, as in the present case, effectively. The pathogenesis of pneumothorax in miliary tuberculosis is unclear, but the following mechanisms can be considered: caseation or necrosis of subpleural miliary nodules and their subsequent rupture can cause pneumothorax. On the other hand, acute miliary dissemination may lead to emphysematous changes. This mechanism may explain the bilateral, simultaneous, and/or recurrent pneumothorax [10, 11].

In miliary tuberculosis, open thoracotomy should not be considered until the patient has received antituberculous therapy for at least several weeks. The initial treatment for nearly every patient with a secondary spontaneous pneumothorax should be tube thoracostomy. It has been noted that surgical pleurectomy should be attempted early in simultaneous bilateral secondary spontaneous pneumothorax [12].

**Conclusion**

Pneumothorax developing in a patient of military tuberculosis can be missed as the breathlessness and the dry cough that are the cardinal features of pneumothorax are also seen in patients with miliary tuberculosis without any pneumothorax. Therefore, in a patient of military tuberculosis diagnosis of pneumothorax should be kept in mind if it presents with or develops respiratory distress.

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