

A CASE REPORT: SPONTANEOUS PNEUMOTHORAX IN PAEDIATRIC PATIENT**Dr. Ankaj Sharma* and Dr. Shiwani Chowalta**

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ABSTRACT

Spontaneous pneumothorax is classified into primary and secondary spontaneous pneumothorax. Primary spontaneous pneumothorax (PSP) occurs in healthy individuals without a coexisting lung disease usually as a result of rupture of a pulmonary bleb. Secondary spontaneous pneumothorax (SSP) is a pneumothorax that is related to the presence of an underlying lung disease such as chronic obstructive lung disease or pulmonary tuberculosis.

KEYWORDS: (PSP) Primary spontaneous pneumothorax, (SSP) Secondary spontaneous pneumothorax.

INTRODUCTION

An ancient infectious disease, tuberculosis (TB) has affected humankind throughout history. Despite the introduction of medical TB treatment during the 20th century TB is the leading cause of mortality among curable infections.^[1] Pneumothorax is one of the important TB complications that requires surgery. Pneumothorax secondary to TB usually occurs after extensive TB involvement of the lung and the sudden onset of bronchopleural fistulisation and empyema with severe cavitory formations or occasionally with miliary TB. Spontaneous pneumothorax (SP) is a frequent complication of pulmonary tuberculosis (TB) and a severe form of the disease. In spite of the fact that TB is a common cause of pneumothorax, a very few series, have been reported.

CASE REPORT

A 16 years old male adolescent presented in paediatric OPD with a history of cough, intermittent chest pain, loss of appetite and loss of weight for last 15-20 days. On examination vitals were stable, hyper resonant note was present on left side of chest with markedly decreased air entry in left side of chest. There was no significant past history or previous admission. Chest X-ray done was suggestive of pneumothorax with collapsed lung for which chest tube was inserted. Even after insertion of the chest tube air entry to the collapsed side did not improved. Then two bottle drainage system was attached to chest tube and negative suctioning was done after which air entry significantly improved towards the affected side.





DISCUSSION

Pneumothorax is defined as presence of gas in the pleural cavity. A spontaneous pneumothorax typically occurs without the history of trauma and can be divided into primary and secondary when it occurs in an individual with or without underlying lung disease respectively.

Contrary to the benign nature of primary spontaneous pneumothorax, pneumothorax secondary to an infection such as TB can be life-threatening because of the patient's underlying respiratory disease and the compromised cardiopulmonary reserve.^[2]

The diseases most commonly associated with secondary spontaneous pneumothorax are obstructive pulmonary disease, cystic fibrosis, cavitated cancers, necrotizing pneumonia, Pneumocystis pneumonia and tuberculosis.^[5] In these conditions the lung tissue is hyper-distended and the pulmonary alveoli in hyper-aeration can come into contact with the pleural cavity and rupture.

Tuberculosis is a long-recognized and well-documented cause of secondary spontaneous pneumothorax with an incidence of approximately 5% in post primary (pulmonary) tuberculosis patients, usually in severe cavitary disease. Overall, around 1% of patients with active tuberculosis present with secondary spontaneous pneumothorax nevertheless the initial presentation as spontaneous tuberculosis is exceptional.^[4]

The main characteristic of pulmonary tuberculosis is the destruction of the lung parenchyma with the loss of metalloproteinase matrix. Classically, tuberculosis is

divided into primary, common in childhood, and post primary, usually presenting in adults. The most characteristic radiological feature in primary tuberculosis is lymphadenopathy. On enhanced CT, hilar and mediastinal nodes with a central hypodense area suggest the diagnosis.^[5] Cavitation is the hallmark of post primary tuberculosis and appears in around half of the patients.

Several complications are associated with tuberculous infection, such as haematogenous dissemination (miliary tuberculosis) or extension to the pleura, resulting in pleural effusion. Late complications of tuberculosis comprise a heterogeneous group of processes including tuberculoma, bronchial stenosis, bronchiectasis, broncholithiasis, aspergilloma, bronchoesophageal fistula and fibrosing mediastinitis.

Pleural infection results from rupture of subpleural caseous lesions, resulting in accumulation of a chronic empyema. A bronchopleural fistula may occur spontaneously during the natural history of the disease. Both chronic empyema and bronchopleural fistula may result in spontaneous pneumothorax, the latter with a more acute presentation.

Tube thoracostomy is the indicated treatment in conjunction with appropriate pharmacologic management of tuberculosis and other infections.

We conclude that secondary spontaneous pneumothorax in patients with tuberculosis occurs especially in cases presenting a destroyed lung. It is not uncommon in the

end stages of tuberculosis with a prolonged process of cavitation, spread to new areas and subsequent fibrosis. Patients of tuberculous pneumothorax required prolonged period of chest tube drainage and usually showed good response to the treatment.

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