E-ISSN 2250-0944
ISSN 2250-1150
doi: 10.31838/ijprt/15.01.75

Case Report

A Rare Case of Endobronchial Tuberculosis in a Young Male: A Case Report

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Received: 18.03.25, Revised: 20.04.25, Accepted: 03.05.25

INTRODUCTION

Tuberculosis (TB) is a global challenge, with high incidence and mortality rate. It has become a major cause of mortality alongside HIV.[1] Endobronchial tuberculosis (EBTB) occurs when tuberculosis affects the trachea and bronchi. EBTB is more frequent in middle-aged women, with the left main bronchus being more commonly involved. In adults, it may present as a primary or reactivated tuberculosis. However, in children, it is frequently a complication of primary tuberculosis.[2-5] EBTB affects 10%-40% of patients with active tuberculosis, although its pathophysiology remains unknown. It is considered to involve dissemination from parenchymal lesions or bronchial invasion of mediastinal tuberculous lymphadenitis.[6] More than half the cases of EBTB occur in patients aged less than 35 years old and it can certainly be mistaken amongst other diseases as the presentation and clinical findings are nonspecific.[7,8] More than 90% of patients develop some degree of bronchial stenosis as a result of the condition, which develops as a common complication of active tuberculosis.[9] It is, however, an extremely infectious disease that poses a diagnostic challenge because of its nonspecific nature and varying clinical findings.[8] Bronchial stenosis caused by the concentric scarring can be fatal in patients with EBTB. The standard treatment is with anti-tubercular medications and the prevention of airway stenosis. Sputum examination is still the first diagnostic test, even if other diagnostic modalities include CT scans, bronchoscopies, and chest X-rays. Following a negative sputum smear, diagnostic bronchoscopy with bronchoalveolar lavage and biopsy as well as imaging studies, can be used for further study. We hereby report a case of Endobronchial Tuberculosis in a young 36 year old male patient.

Case Presentation

A 36-year-old male presented with complaints of fever, shortness of breath, left sided chest pain and cough since 2 weeks. No h/o hemoptysis, unintentional weight loss. Previous history of contact with TB patient present. On examination, patient was tachypnoeic, SPO2 was 88% on room air. On examination of Respiratory system, trachea was pulled to right side with decreased air entry in left lung fields. Vocal fremitus decreased in left infra scapular area, inter scapular area, mammary areas. On percussion, stony dullness noted over left infra scapular area, inter scapular area, and mammary areas. On auscultation, bronchial breath sounds with coarse crepts heard on left mammary area. Clinically a diagnosis of left sided collapse with gross pleural effusion was made.

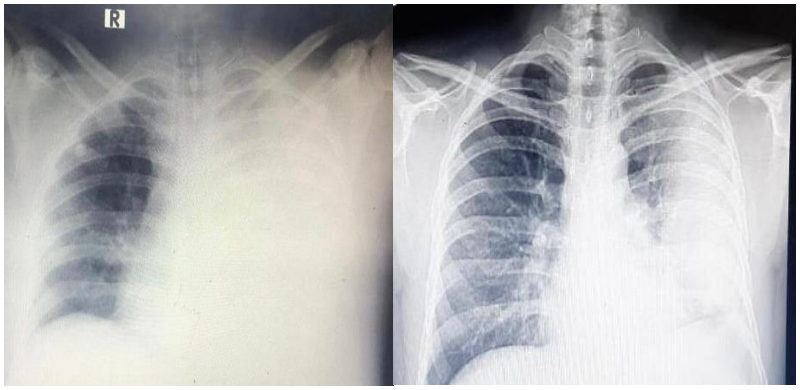

Figure 1: Chest Xray Showed Left Sided Homogenous Opacity with Trachea Pulled Towards Right Side

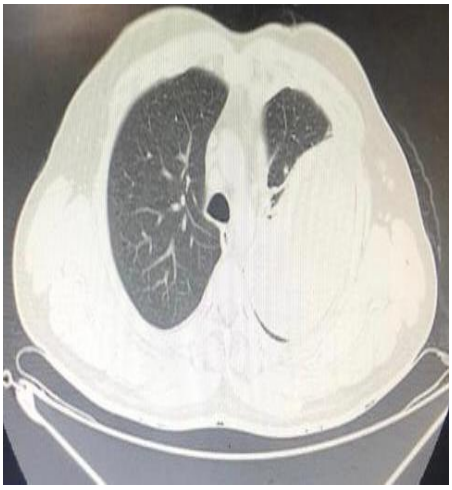

Figure 2: HRCT Showing Left Gross Pleural Effusion and Consolidation, Enlarged Lymph Nodes

Investigations

On routine investigations, patient was found to have leucocytosis with neutrophilic predominance, ESR was 70, Chest Xray showed left sided homogenous opacity with trachea pulled towards right side likely effusion, pleural fluid analysis showed neutrophilic predominance (78%). Sputum for AFB and CBNAAT were negative. Despite continuing antibiotics, the patient had persistent fever spikes HRCT chest done which showed left gross pleural effusion and consolidation, enlarged lymph nodes and features s/o EBTB. Bronchoscopy done which showed swollen tracheobronchial mucosa with hyperemia covered with large amount of whitish cheesy material, Granular inflammatory and scattered rice nodules like structures. BAL CBNAAT was positive.

DISCUSSION

Between 5.8% and 30% of all M. tuberculosis cases are reported to have EBTB.[10]; With a higher female preponderance and children at a higher risk of getting EBTB, the majority of cases that have been recorded include individuals under the age of 35.[11,12] Among the elderly patients with TB, 15% of them were found to have EBTB.[13] Since fiberoptic bronchoscopy is not usually performed on all TB patients, diagnosing EBTB is still difficult and frequently underdiagnosed. [14]

Diagnosis of EBTB requires a high index of suspicion. It usually remains undiagnosed as the sputum smears for AFB can be false negative and diagnostic bronchoscopy is not routinely performed. Nevertheless, ATT remains the first choice of treatment. What is interest in this case is, patient is a young male and also haemoptysis which is a feature of EBTB is not there.

There is also limited data on the clinical manifestation of EBTB. The most common symptom is barking cough, which is a nonspecific feature along with fever, dyspnea, chest pain, blood-stained sputum, and generalized weakness. The primary predictor of concurrent EBTB in patients with pulmonary tuberculosis is the length of time that symptoms have been present.[12] Patients with endobronchial mass in some cases may have localized wheeze or rhonchi confusing it with bronchial asthma. In rare cases patients have coughed up fragments of bronchial cartilage.[7,15] Chest radiograph may be normal in about 10%-20% of patients with EBTB.[14] In terms of radiological diagnosis, high resolution computed tomography (HRCT) has been found to be superior to chest radiographs and standard CT which not only assists in the localization of disease but also in the evaluation of parenchymal disease. Various studies done have reported a higher sensitivity of more than 95% in evaluation of EBTB by HRCT.[16,17] Bronchoscopy and biopsy are mandatory for the diagnosis of EBTB, though the yield of biopsies to diagnose EBTB ranges from 30% to 84%.[5,13] Histopathological findings aid in the early diagnosis and prompt starting of treatment.[18]

Stricture development and bronchial stenosis are frequent complications of EBTB. Notably, postobstructive bronchiectasis can also appear as a consequence of the stenosis, which can be lethal and cause respiratory emergency if larger airways are affected.[5]

The treatment of EBTB is the same as pulmonary tuberculosis.[5,19] It involves a fixed dose regimen of four primary drugs which include: isoniazid, rifampicin, ethambutol, and pyrazinamide for an initial two months and then a continuation phase of treatment with daily

isoniazid, rifampicin and ethambutol for a further four months. Beneficial effects of anti-inflammation with corticosteroids have been reported, however, were not used in our patient. In drug resistant cases, treatment should be based on susceptibility results.

CONCLUSION

Clinicians need to be vigilant in patients who are AFB smear negative, with symptoms and localized wheeze; Bronchoscopy should be considered in those selected cases. Endobronchial TB remains undiagnosed as the AFB smears are negative and diagnostic bronchoscopy is not routinely performed in those patients, mainly in developing countries. Nevertheless, anti-tuberculosis therapy remains the first choice.

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