



A CURIOUS CASE OF TUBERCULOSIS PRESENTING WITH UNILATERAL MONOPHONIC RHONCHI

Respiratory Medicine

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ABSTRACT

Endobronchial tuberculosis (EBTB) is a type of pulmonary tuberculosis which causes injury to the tracheobronchial wall. Incidence of EBTB in Pulmonary tuberculosis patients is reported from 6% to 50%. Endobronchial tuberculosis is classified by Chung and Lee according to bronchoscopic features into 7 subtypes: actively caseating (most common), fibrostenotic, edematous-hyperemic, tumorous, ulcerative, granular, and non-specific bronchitic type. Here is a case of tumorous type of Endobronchial Tuberculosis, patient is a 65 year old male who presented with musical sounds while breathing, cough with expectoration, evening rise of temperature, loss of appetite, loss of weight and generalized malaise. Auscultation revealed right sided monophonic rhonchi. Chest X- Ray revealed a thick walled cavity in right lower zone. Chest CT scan showed a thick walled cavitary lesion in superior segment of right lower lobe. Sputum analysis was insignificant. Bronchoscopy showed an intraluminal mass in the right bronchial tree, bronchoalveolar lavage (BAL) and biopsy samples were sent for further analysis. BAL CBNAAT showed Mycobacterium tuberculosis (MTB) detected and biopsy revealed granulomatous inflammation. Patient was diagnosed as Tumorous type of Endobronchial Tuberculosis and was started on Anti Tubercular Treatment (ATT). The incidence of Tumorous type of EBTB being 12.5%.

KEYWORDS

Endobronchial Tuberculosis, fibrostenosis, Bronchoscopy

CASE REPORT

65 year old male patient presented to Respiratory Medicine OPD with chief complaints of musical sounds while breathing. Patient had associated cough with expectoration and evening rise of temperature since 1 month, history of loss of appetite, loss of weight (6-8 kgs over 3 months) and generalized malaise since 2 weeks. Patient is a known diabetic on regular medications since 5 years. Patient is not a known smoker. Physical examination of the patient showed no abnormalities. Auscultation showed increased vocal resonance over right suprascapular, interscapular and infrascapular areas with right sided monophonic rhonchi. Chest radiography showed right lower zone cavity surrounding by consolidation (Fig.1). Computed tomography scan of chest showed a thick walled irregular cavitating lesion in the superior segment of right lower lobe with surrounding patchy consolidation and multiple nodules which suggested either an infectious etiology like pulmonary tuberculosis or a cavitating neoplasm (Fig.2,3). As sputum analysis was insignificant, a bronchoscopy with Bronchoalveolar lavage (BAL) and biopsy was performed. The procedure showed an intraluminal mass in the right bronchial tree (fig.4), BAL and biopsy samples were sent for analysis. BAL Gene Xpert showed MTB detected (low) with no resistance to rifampicin, biopsy for Histopathological examination (Fig.5) showed inflammatory cell collections composed of dense cells of lymphocytes, plasma cells and a focus with Langhans type of giant cells suggesting a granulomatous inflammation. BAL cytology report ruled out malignancy. Patient was diagnosed as endobronchial tuberculosis (Tumorous type) and was started on Anti Tubercular treatment.



Fig.1 – Chest X ray PA view showing cavity in the right lower zone



Fig.2 – CT scan of chest showing a thick walled cavity surrounded by consolidation



Fig.3 – Chest CT – sagittal view showing a thick walled cavitary lesion

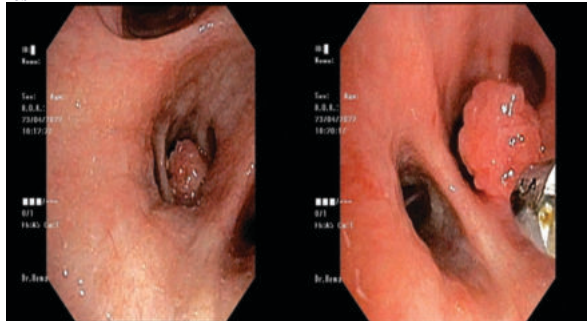


Fig.4 – Bronchoscopy image showing a mass in the right bronchial tree

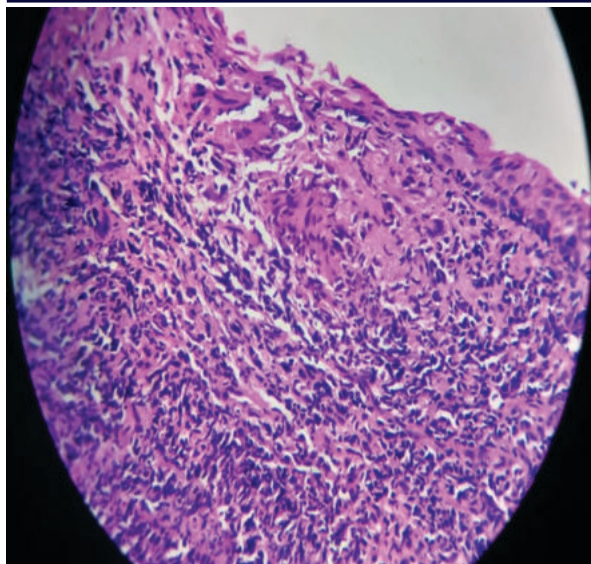


Fig.5– Histopathological examination showing a granulomatous inflammation

DISCUSSION

Endobronchial Tuberculosis (EBTB) is likely a result of dissemination of tubercle bacilli from an adjacent pulmonary focus, lymph node rupture or lymphatic spread to peribronchial region [1]. EBTB is frequently seen in young adults with a female predilection but can also occur in 15% of geriatric patients [2,3]. The etiology of female preponderance is unclear, although postulated to be a result of thinner tracheobronchial lumen in women therefore, reducing the capacity for expectoration, making them susceptible to direct implantation of tubercle bacilli from the infectious pulmonary focus within the expectorated sputum [7]. Actively caseating type of EBTB can progress to fibrostenosis which is a very critical complication [4,5]. The clinical picture of EBTB involves fever, shortness of breath, cough along with expectoration, hemoptysis and wheezing [8]. Most frequent sites for EBTB infection are right main bronchus and right upper lobe [9]. In active disease, asymmetrical narrowing of bronchial lumen with wall thickening, and adjacent mediastinal lymph node enlargement occurs as a result of hyperplastic changes and inflammatory edema. In contrast, the fibrostenotic type of EBTB shows smooth tracheal or bronchial luminal narrowing with minimal wall thickening without lymph node enlargement [10]. The diagnosis of endobronchial TB requires a high index of suspicion and prompt performance of diagnostic bronchoscopy [11]. Early diagnosis is of utmost importance in EBTB in order to start therapy [4,5]. In this case, CT chest and Bronchoscopic findings showed contrasting diagnoses confirmed only by correlating clinical picture with BAL CBNAAT and Biopsy reports. Treatment of Endobronchial TB is similar to pulmonary TB [12]. Aerosol therapy with streptomycin and corticosteroids during the initial stages of endobronchial tuberculosis could be effective in preventing further complications especially fibrostenosis [4,5]. In fibrostenotic type of EBTB, use of corticosteroids or other medical regimens will not be able to revert the tracheobronchial fibrosis making stenosis imminent if the disease evolves to fibro-stenotic type [4,5]. Bronchoplasty tends to be helpful for monitoring progression of disease and also preserves lung function which makes it the best treatment for bronchial strictures especially in involvement of main bronchi [13]. Bronchoscopy guided curettage with forceps of the pseudomembranes along with systemic steroids can enhance the drainage [14]. Interventional endobronchial techniques like balloon dilatation, laser ablation, self expanding metallic stent placement, curettage, resection and anastomosis can be productive in treatment of bronchial stenosis [6,15]. Follow-up bronchoscopy should be performed after at least 4 months of anti-tuberculosis treatment to rule out bronchial stenosis as a delayed complication [16].

CONCLUSION

This case brings to light an unlikely presentation of tuberculosis as a mass highly likely to be mistaken for a neoplasm and therefore, emphasizes the need for a prompt diagnosis of endobronchial tuberculosis with early initiation of anti tubercular treatment to prevent complications like tracheobronchial stenosis. Serial bronchoscopies

may be required in such patients in order to assess the degree of airway stenosis.

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