

PULMONARY TUBERCULOSIS MASQUERADING AS A HILAR MASS: A CASE REPORT

Pulmonary Medicine

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ABSTRACT

Tuberculosis (TB) is well known as a diagnostic chameleon as it has often been found to mimic malignancy in its clinical and radiological features. Although the differences between pulmonary TB and lung cancer have been highlighted in various reports, TB often gets misdiagnosed as lung cancer and vice versa. It is therefore extremely important to discern the features of Pulmonary Tuberculosis and lung cancer. This case highlights the importance of early detection and prompt treatment of pulmonary tuberculosis in a health care worker. After initiating the patient on anti-tuberculosis treatment, as a case of clinically diagnosed pulmonary tuberculosis, he responded to treatment and showed good clinical and radiological improvement.

KEYWORDS

Tuberculosis, Hilar mass, Lung cancer, Anti-tuberculosis treatment

INTRODUCTION

Tuberculosis is an infectious disease caused predominantly by *Mycobacterium tuberculosis* and is one of the leading infectious cause of death globally¹. In 2020, an estimated 10 million people developed TB and 1.5 million died from the disease². The life time risk of developing disease among those infected with TB is 10-15%¹. India accounts for one fourth of the global TB burden and has the highest number of TB cases¹. Both Pulmonary tuberculosis and lung cancer can present as a mass lesion^{3,11}. Both are commonly encountered, involve the lung parenchyma, have a high prevalence, and are characterized by similar symptoms which include cough, expectoration, fever, hemoptysis, weight loss and anorexia^{3,10}. However, there are many differences between these two conditions like they have different etiologies. The most common finding on chest radiograph in pulmonary tuberculosis is a cavitary consolidation involving the upper zones⁵. Lower lung field tuberculosis is seen in individuals with immunosuppression⁵. Tuberculosis presenting as mass lesion on chest radiograph in immunocompetent persons is rare. Here we present an interesting case of Pulmonary tuberculosis that was masquerading as a hilar mass.

CASE REPORT

A 40-year-old male, presented with history of loss of appetite and significant loss of weight over 1 month, history of fatigue for 1 month and history of 3 episodes of hemoptysis 15-30cc each. There was no history of dyspnea or chest pain. No history of tuberculosis in the past. He is a health care worker by occupation working at a PHC. Known diabetic on oral hypoglycemic agents. He has no addictions and immune status was normal. Bladder and bowel habits were regular. On examination, his vitals were stable. There was no pallor, icterus, cyanosis, clubbing, lymphadenopathy or pedal edema. On respiratory system examination, chest movements were bilaterally symmetrical, resonant note heard bilaterally on percussion and on auscultation vesicular breath sounds heard bilaterally with equal intensity. All systemic examination was within normal limits.

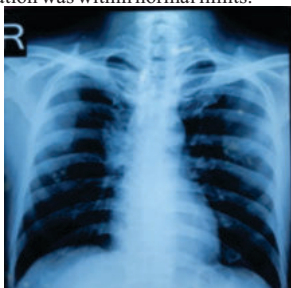


Fig1.

Chest radiograph PA viewThe chest radiograph PA view (Fig1.) showed right hilar prominence. The patient was advised to get admitted in view of hemoptysis. However, he refused for the same. Therefore, he was started on single oral antibiotic, a cough suppressant syrup and tablet tranexamic acid and was asked to follow up if his symptoms did not subside or if they worsened. At follow up after 5 days, the hemoptysis had subsided completely, but the constitutional symptoms persisted. Patient was then thoroughly investigated. All blood tests were within normal limits, HIV-ELISA was non-reactive and sputum CBNAAT was MTB not detected. Hence, an induced sputum CBNAAT was done which was MTB not detected. The serum ACE levels were normal. Since, the sputum CBNAAT was negative twice, yet his symptoms still persisted with the chest radiograph showing right hilar prominence, a CECT thorax was planned.

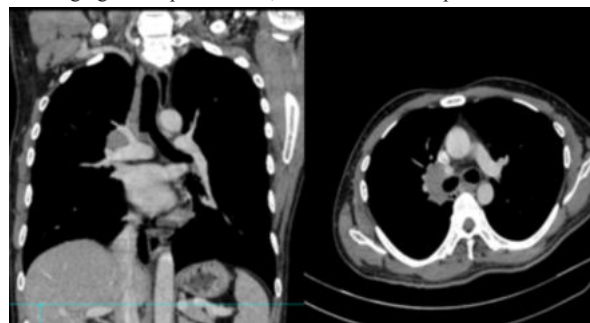


Fig2. CECT thorax coronal view Fig3. CECT thorax axial view

The CECT thorax (Fig2.coronal view and Fig3.axial view), showed a mass like lesion with heterogenous enhancement adjacent to right hilum involving posterior segment of right upper lobe and superior segment of right lower lobe measuring 3×5×4 cm in size. Enlarged hilar lymph nodes are present, largest measuring 3.8×2.6cms. Multiple lymph nodes are present in paratracheal, pre-tracheal and subcarinal area. Largest lymph node in paratracheal region measures 1.2cms in size.

Hence, bronchoscopy was done. The visualized trachea, bronchial tree and carina appeared normal. The bronchial mucosa appeared normal. There was no intrabronchial growth or purulent secretions seen. The bronchial washings sent for CBNAAT was negative, cytopathology showed no evidence of atypical cells and post bronchoscopy sputum CBNAAT was negative. Bronchoscopic biopsy was not done as no abnormality was visualized. And CT guided biopsy of the mass was not indicated as the mass was not easily approachable.

As the patient was a health care worker, in contact with patients with pulmonary tuberculosis at the primary health centre and a diabetic on

oral hypoglycemic agents, who had presented with loss of appetite, loss of weight and hemoptysis, with the diagnosis of malignancy not being clearly established, he was clinically diagnosed as a case of pulmonary tuberculosis. He was initiated on anti-tuberculosis treatment with 4FDC as per weight. The oral hypoglycemic agents were continued and he was asked to follow up every 15 days to look for any clinical worsening. After 1 month of anti-tuberculosis treatment, patient improved symptomatically. Hemoptysis had subsided, appetite improved and weight gain was present. The MGIT i.e. the liquid culture of bronchial washings revealed no growth of *Mycobacterium tuberculosis*. At end of Intensive Phase (IP), patient improved further and was asymptomatic. Sputum microscopy was negative for AFB. The chest radiograph End IP (Fig4.) showed partial clearance of the right hilar prominence.



Fig4. Chest radiograph End IP

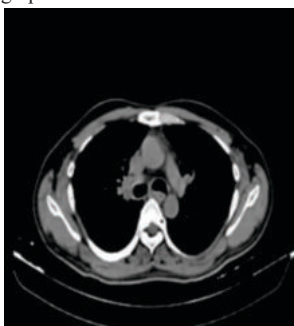


Fig5. CECT thorax axial view End IP



Fig6. Chest radiograph End CP



Fig7. CECT thorax axial view End CP

CECT thorax End IP (Fig5.), showed linear atelectatic changes noted in the posterior segment of right upper lobe and superior segment of right lower lobe. Rest of the lung parenchyma appears normal. A non-

enhancing right hilar lymph node is noted measuring 1.9×1.6 cm. Sub-centimetric bilateral paratracheal, pre-vascular, aorto-pulmonary window and subcarinal lymph nodes noted. There was significant resolution of the consolidation. However, residual atelectasis persisted. On subsequent follow-up visits, patient showed clinical and radiological improvement. At the end of Continuation phase (CP), Chest radiograph (Fig6.) showed resolution of right hilar prominence. The patient's CP was extended by 3 months as CECT thorax (Fig7) showed some residual lymph nodes. Patient will be assessed at end of extended CP.

DISCUSSION

TB is an infectious disease caused by the bacillus *Mycobacterium tuberculosis*. It typically affects the lungs (Pulmonary TB). Although, pulmonary TB and lung cancer present with similar symptoms a careful history and examination can help the clinician to suspect Tuberculosis⁵. Tuberculosis commonly present with cough for more than 2 weeks, fever with evening rise of temperature, weight loss and loss of appetite. Chest radiograph and sputum examination will help in diagnosis⁷.

Pulmonary tuberculosis on chest radiograph manifests as parenchymal disease, cavitation, miliary disease, lymphadenopathy and pleural effusion¹¹. Parenchymal lesions include dense, homogeneous or non-homogenous consolidation involving any lobe (usually has upper lobe predilection) and fibrotic changes. Post-primary tuberculosis can present with a consolidation, mostly in apical and posterior segments of the upper lobes, cavitation being the hallmark of disease^{3,8}. Lung cancer is the main differential of mass lesion on chest radiograph. Malignant lesions on chest radiograph, have irregular margins with radiating strands. In case of central tumors, a hilar prominence is seen whereas, peripheral tumors may present as pulmonary nodule. Mediastinal widening is suggestive of lymph node involvement. Total or partial atelectasis of a segment, lobe or lung, non-resolving consolidation, cavitation or pleural effusion may be noted^{3,5}. Pulmonary Tuberculosis presents as mass lesion in the upper lobes in 7%, but mass presenting in the lower lobes is unusual. Tuberculosis accounts for 27% of all infections, initially presumed to be lung mass on imaging studies⁹. If a patient presents with mass lesion on chest radiograph it should be thoroughly evaluated, as TB is a treatable disease. The management of TB and lung cancer differs significantly. Hence, early diagnosis and directed treatment is of utmost importance.

CONCLUSION

In a patient with high index of clinical suspicion of tuberculosis, even if there is no microbiological evidence of tuberculosis, it is always better to initiate the patient on anti-tuberculosis treatment. Early initiation of anti-tuberculosis treatment is better than delaying the treatment thereby preventing further complications. Dynamic thinking should be adopted by clinicians and a thorough examination of the patient alongside the required investigations is crucial.

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