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Tuberculosis as A Mediastinal Mass in A 14 Year Old Male: A Case Report

¹Sachin S Khillare, ²Rohit R Hegde, ³Priti L Meshram, ⁴Vishwanath V Pujari

Corresponding Author: Sachin S Khillare

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Abstract

The most common anterior mediastinal masses in the adult population are thymoma, teratoma, thyroid goiter, and lymphoma. Mediastinal mass presenting as Tuberculosis is a rare presentation. We present to you a case of 14 year old male who presented to OPD with chief complaints of left sided chest pain, night fever with chills and sweating, right and left flank pain. X ray suggestive of mass in left lung, CT scan suggestive of ill defined heterogeneously enhancing soft tissue density lesion in left upper lobe abutting the mediastinal pleura suggestive of neoplastic > infective etiology. Tumor markers were sent came out negative. Peripheral smear revealed polymorphnuclear mild reactive monocytosis with microcytic hypochromic anemia. USG guided biopsy was done. Histopathology report confirmed necrotizing granulomatous inflammation consistent with Tuberculosis.

Keywords: Tuberculosis, Mediastinal mass, lymphoma, teratoma, thymoma, histopathology, case report

Introduction

Tuberculosis affects lungs but can affect other sites as well. When lungs are involved it is called pulmonary tuberculosis while involvement of other sites in the body

it is called extrapulmonary tuberculosis. Mass is the rare presentation of tuberculosis. The mediastinum is a cavity that separates the lungs from the other structures in the chest. It is further divided into three main parts: anterior mediastinum, posterior mediastinum, and middle mediastinum. The borders of the mediastinum include the thoracic inlet superiorly, the diaphragm inferiorly, the spine posteriorly, the sternum anteriorly, and the pleural spaces laterally. Thymoma is the most common cancer of anterior mediastinum it comprises 20% of all anterior mediastinal tumors¹. These typically occurs in the age group of 40 to 60 years of age. Primary mediastinal lymphoma is a relatively uncommon tumor. Secondary lymphomas of the mediastinum, which originate elsewhere in the body and metastasize to the mediastinum, are more common than primary mediastinal lymphomas². Nodular sclerosing Hodgkin's disease is found in young adults and is virtually confined to the anterior mediastinum frequently presents as an anterior mediastinal mass though rarely obstructive or obtrusive³. The most common location for malignant germ cell tumors is the gonads; however, they can also arise in extragonadal regions. The mediastinum is the most

commonly known location for extragonadal germ cell tumors. Mediastinal (mature) teratomas contain soft tissue in almost all cases, fluid in 88%, fat in 76%, and not infrequently calcifications, ossifications, and teeth. The presence of an elevated alpha-fetoprotein (AFP) or a beta-human chorionic gonadotropin (BHCG) rules out pure/mature teratomas (and seminomas) and suggests a diagnosis of malignancy such as embryonal cancer, endodermal sinus cancer, or choriocarcinoma⁴. The diagnosis of mediastinal mass is very important as the correct diagnosis leads to different set of treatment from benign tumors to malignant tumors to medical management to surgical management. The purpose of this case report is to provide clinician with insight of Tuberculosis can present as a very varied presentation which can mimic from simple lymph node enlargement to as complex as mass formation and to keep differential diagnosis of tuberculosis in future cases of mediastinal mass.

Case

A 14 year male patient presented to OPD with chief complaints of left sided chest pain, night fever with chills and sweating, right and left flank pain and loss of appetite and loss of weight since 1 month. Upon history taking patient revealed no history of tuberculosis in past or tuberculosis contact. On evaluation his chest x ray revealed mass in left side of lung. For further evaluation patient's CT scan was done, it showed ill defined heterogeneously enhancing soft tissue density lesion in left upper lobe abutting the mediastinal pleura encasing the left superior pulmonary vein and ascending branches of left pulmonary artery. No mediastinal extensions were seen features were more likely suggestive of neoplastic > infective etiology. Ultrasonography of abdomen and pelvis revealed no significant abnormality. Patient's

sputum genexpert report was MTB not detected. Patient's peripheral blood smear revealed polymorphnuclear mild reactive monocytosis with microcytic hypochromic anemia. Tumor markers beta HCG was below 1.2 (within normal limit), alfa feta proteins (AFP) were 1.54 (within normal limit).

Patient's USG guided biopsy of mediastinal mass was done. It showed fibrous cores with inflammatory cells and multiple ill-defined granulomas with epithelioid histiocytic collection and giant cells with areas of necrosis i.e. necrotizing granulomatous inflammation consistent with tuberculosis. Biopsy AFB stain did not highlight acid fast bacilli. Patient was started on anti-tubercular therapy according to weight band & followed up regularly. Patient showed symptomatic improvement as well as radiological improvement showed response to anti tubercular therapy.



Figure 1: chest x ray PA view suggestive of mass in anterior mediastinum.



Figure 2: contrast enhanced CT scan of thorax suggestive of mass in mediastinum.



Figure 3: follow up chest x ray PA view of patient after anti tubercular therapy.

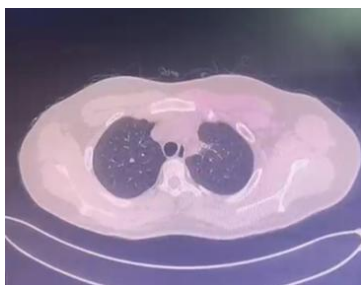


Figure 4: follow up CT scan of patient after anti tubercular therapy.

Discussion

The common radiologic patterns and clinical presentations are well known and documented. Tuberculosis manifesting as a mass lesion, is an unusual radiographic presentation of tuberculosis (TB)⁵. We thoroughly investigated this patient by keeping malignancy as a differential diagnosis in this patient. We ruled out malignancy by sending age specific tumor markers in this patient along with routine blood tests and radiological investigations. We performed USG guided biopsy of the mass lesion as it was closer to chest wall that is unique in this patient as most of the times CT guided biopsy is usually performed. We also conducted genexpert reports of both sputum & tissue sample which were MTB not detected. But histopathology report ascertained the diagnosis of this patient as Tuberculosis. Patient was started on anti tubercular therapy according to managed asked to follow up in OPD monthly and as

required. Patient took regular follow up in OPD patient showed improvement clinically and radiologically in the form of weight gain, resolution of symptoms and resolution of mass on cxr and CT scan.

Conclusion

Tuberculosis can mimic malignancy in the form of mass formation. Thorough investigations to be done in such cases as early detection and diagnosis can change course of treatment. In endemic country like India possibility of tuberculosis should be considered in cases of mediastinal mass as a rare presentation.

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