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Mediastinal pseudotumor tuberculosis in an immunocompetent patient: case report and brief review of literature

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ABSTRACT

Tuberculosis remains the major cause of morbidity and mortality by a single infectious agent, particularly in developing countries such Madagascar. However, to our knowledge, isolated mediastinal tuberculosis (MTB) in the pseudotumor shape has not been described in adults immunocompetent.

This unusual form have a incidence estimated about 0.25%-5.8%. It occurs most commonly in black people, and presents problems of differential diagnosis.

We report a case of a young adult man immunocompetent from Madagascar affected by mediastinal mass. Diagnosis of tuberculosis was made based further biopsy by mediastinostomy and confirmed with histopathology. This case report emphasizes the importance of biopsied tissue culture for routine bacteriological examination when encountering a mediastinal mass.

KEYWORDS: Bronchoscopy, HIV seronegativity, Mediastinoscopy, Mediastinal Tuberculosis, Tuberculous, Lymphadenitis

Introduction

Mediastinal masse is commonly encountered in clinical practice. This is a common challenge for the clinicians due to problems of differential diagnosis. Isolated involvement of mediastinum is a rare presentation of tuberculosis [1].

The incidence rate of tuberculosis (TB) is almost stably high in infected people with human immunodeficiency virus (HIV) and among people from countries characterized by high TB endemicity, such in Madagascar [2].

Observations

A 24-year-old male immunocompetent, non-alcoholic and non-smoker was admitted in surgery thoracic unit for suspicion of mediastinal lymphomatous desease. His past medical history was unremarkable. He denied previous diagnosis of tuberculosis as well as TB cases in his family or other close contacts. A full virology screen including HIV (Human Immunodeficiency Virus), hepatitis B and C serology were also negative.

In the laboratory investigation, the tumor markers beta human chorionic gonadotrophin (hCG) and alpha-fetoprotein were normal.Face Chest x-ray had highlighted left upper hemithorax opacity associated with displacement of the trachea to the opposite side (Figure 1A).

The chest CT scan with contrast injection, objectified a tissue mass, heterogeneous, and measuring 73x93x108mm (Figure 1B et 1C).

Computed tomography of the abdomen and pelvis was also concurrently done and found to be normal. They do not report any evidence of other lymphadenopathy or masses.

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Surgical biopsy of the mediastinal mass with anterior mediastinotomy (Chamberlain procedure) was performed and subsequent histological examination showed chronic granulomatous inflammation characterized by epithelioid and giant cells with foci of central necrosis whereas Periodic acid-Schiff (Figure 2).
Antituberculosis treatment has been prescribed for 6 months – referring to the local recommendations- with good clinical, bacteriological and radiological progress. Control of chest-X ray showed a complete disappearance of the mediastinal mass after 06 months of treatment.

Discussion

Typically the underlying presentation of mediastinal tuberculosis (MTB) is mediastinal lymphadenitis. In the literature, there are rarely case reports of TB lymphadenitis without lung involvement, particularly in immunocompetent patients as in our observation [1-3]. In general, tuberculous and non tuberculous adenitis are associated with advanced immunosuppression to the resurgence of HIV infection [2]. Tuberculosis is very common disease in Madagascar often involving parenchymal desease [4]. Isolated and asymptomatic mediastinal lymphadenitis or mediastinal tuberculous mass has been reported in pediatric patients. They were very rarely seen in adults [2] [5] [6]. In a large series tuberculosis was the fith commonest cause of mediastinal enlargement, accounting for 6% of 782 cases [1] [7]. The pathogenesis of MTB is uncertain whether it represents a disseminated primary infection or a TB reactivation of a latent nodal focus [2] [5]. Mediastinal lymphadenopathy is usually asymptomatic but it can compress upon various structures and produce symptoms

The diagnosis of MTB in an isolated intrathoracic lymph node enlargement can be difficult. MTB involvement without parenchymal disease has to be distinguished from thymomas, lymphomas, teratomatous neoplasms, sarcoidosis, metastatic malignant diseases, granulomatous diseases and fungal diseases such as histoplasmosis (Table 1) [1] [2] [5]. CT scan, plays an important role in the characterization of lymph nodes and in the determination of active/non active disease [2]. It is an important tool to diagnose active tubercular mediastinal lymph node where it shows central low attenuation with peripheral rim enhancement [10]. These low-attenuation areas within the nodes had pathologic correspondence to areas of caseation necrosis and may be a reliable indicator for disease activity [10]. Inactive disease is suggested by homogeneous and calcified nodes [10]. In our patient CT scan chest showed a mediastinal mass like tumor which was not suggestive of a tuberculous lymphadenitis. The large conglomerate of multiple mediastinal lymph nodes gived this appearance of pseudotumor in our case. Several studies have described the sensitivity of the Transbronchial Needle Aspiration guided by Endobronchial Ultrasound (EBUS-TBNA) in the detection of mycobacterial infections in cases of isolated intrathoracic lymphadenopathy [5] [11]. James Geake and al conclude in a multicentric Australian experience for the Utility of EBUS-TBNA for diagnosis of mediastinal tuberculous lymphadenitis that it is a safe and well tolerated procedure and demonstrate good sensitivity for a microbiologic diagnosis (62%) of isolated for patients in whom TB is suspected [12]. Aysegul Senturk and al. recommend the use of M. tuberculosis PCR in the EBUS-TBNA specimens as a rapid diagnostic method for mediastinal lymphadenopathies in patients with suspected

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TB [13]. However, a prospective longitudinal cohort study of 34 consecutive patients, who presented with isolated mediastinal lymphadenopathy, concluded that bronchoscopy has a low diagnostic yield in mediastinal tuberculous lymphadenopathy in the absence of a parenchymal lesion, while mediastinoscopy, although invasive, is a safe procedure and provides a tissue diagnosis in most cases [14]. All these controversies arguments highlight this article in order to stress the importance and the place of surgical biopsy. Anterior mediastinotomy (Chamberlain Procedure) was performed in our patients because of the following: (a) Biopsy by anterior mediastinotomy is an easy surgical procedure technically, financially not very expensive and with low morbidity; (b) Sampling of the lymph nodes is directed by manual palpation and visual inspection and provides the histopathological diagnostic certainty for optimal treatment of anterior mediastinal mass. Regarding the treatment, we followed the international recommendations for HIV seronegative adults [15], which consists of two months of rifampicin, ethambutol, isoniazid and pyrazinamide, followed by four months of rifampicin and isoniazid; no differences have been reported in comparison to a nine-month regimen [2].

Conclusion

Tuberculosis can present as multiple clinical shapes and the clinician should keep its possibility in all atypical cases especially in an endemic area of tuberculosis. Physician always do to think and include MTB in the differential diagnosis especially in many common anterior mediastinal tumors.

Surgical biopsy subsequent histopathological and microbiological examinations of biopsy by Lowestein-Jensen cultures remain the gold standard of diagnosis and confirmed the diagnosis. study, is a spastic paraparesis. It was therefore necessary to ensure its idiopathic character by eliminating any predisposing factor such as obesity, corticosteroids or Cushing's disease. In the case of symptomatic idiopathic lipomatosis, the treatment is surgical symptomatic idiopathic lipomatosis, the treatment is surgical.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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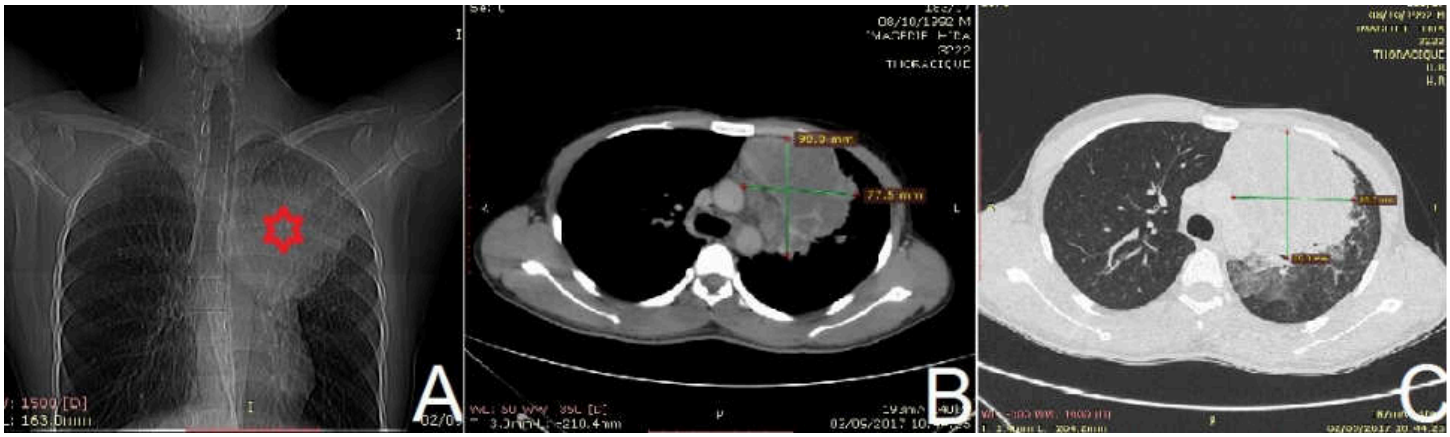

Figure 1
A- Chest X ray showing a smooth, rounded, radiopaque shadow at the left infraclavicular and paratracheal region.
B- Chest CT scan showing a left antero-posterior mediastinal mass, tissue, heterogeneous, contact with the mediastinal vascular structures, without obvious wall extension.
C- Corresponding lung window showing normal lung parenchyma.

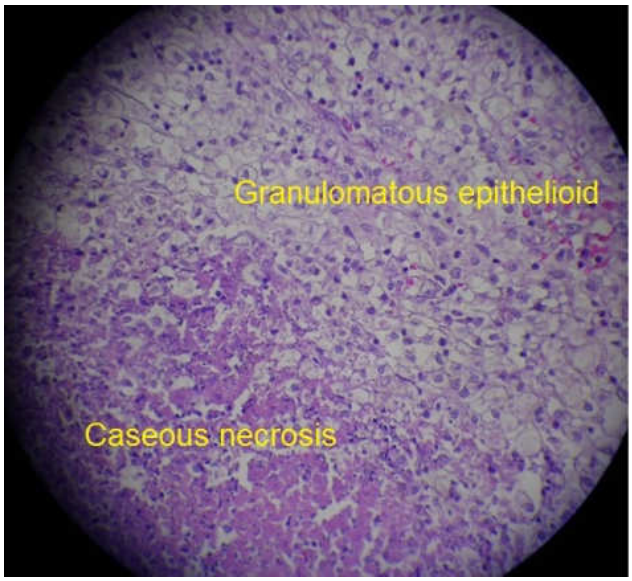

Figure 2
Histological examination (HEx400) of surgical biopsy material: Chronic granulomatous inflammation characterized by epithelioid and giant cells with foci of central necrosis.

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Table 1 : Differential diagnosis of anterior mediastinal mass

- Lymphoma
- Thymoma
- Germ cell tumour
- Thyroid enlargement
- Vascular lesion
- Lymphadenopathy
- Cystic lesion (pleuropericardial or bronchogenic)
- Tuberculosis

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