

Parietal Thoracic Tuberculosis in the Immunocompetent

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Abstract: ***Introduction:** parietal thoracic tuberculosis is a rare entity. It represents less than 0.1% of all forms of tuberculosis. It often poses a problem of differential diagnosis with parietal tumors, especially in the absence of other pulmonary or extra-pulmonary lesions suggestive of tuberculosis. **Observation:** A 28-year-old patient, with no particular pathological history, consulted for a right basithoracic swelling evolving for a month of firm consistency, without any local inflammatory signs. The thoracic ultrasound showed an echogenic fusiform subcutaneous tissue formation infiltrating the 9th rib without costal lysis. The thoracic CT scan revealed a mass of heterogeneous density at the level of the 8th intercostal space with bilateral upper lobar pulmonary nodules. The intradermal tuberculin reaction was positive. Histological examination of the transparietal biopsy puncture made it possible to diagnose thoracic parietal tuberculosis by showing the presence of a granulomatous tuberculoid inflammation with suppurative necrosis; and a bacteriological examination of the bronchial suction fluid confirmed the existence of a second pulmonary localization. It should be noted that the HIV, hepatitis B and C serologies were negative. **Discussion:** Tuberculosis of the thoracic wall remains an unusual location of tuberculosis. Its frequency is estimated between 1 and 5% of osteoarticular tuberculosis which constitutes less than 15% of extra-pulmonary tuberculosis. The search for other tuberculosis locations is a necessary step in the diagnostic process.*

Keywords: Parietal tuberculosis; Rare affection; Immunocompetent

1. Introduction

Parietal thoracic tuberculosis is a rare entity even in countries with high tuberculosis endemic. It presents less than 0.1% of all forms of tuberculosis [1]. This definition eliminates abscesses of Pott's disease, cold abscesses of the mammary gland and also the spread of purulent tuberculous pleurisy to the wall or "empyema of necessity" [2]. It poses a problem of differential diagnosis with parietal tumors, especially in the absence of other pulmonary or extra-pulmonary lesions suggestive of tuberculosis [3]. We report a case of thoracic parietal tuberculosis associated with lung involvement occurring in an immunocompetent woman and describe the diagnostic, therapeutic and evolutionary particularities of this entity.

2. Observation

It's about a 28-year-old patient with no history of disease or recent tuberculous contamination. She consulted the pneumology service for a right basi-thoracic swelling evolving for a month associated with side stitch chest pain and a dry cough without hemoptysis, evolving in a context of apyrexia and slight decline in the general condition.

The clinical examination found a non-pyretic patient, with a normal body mass index with the presence of a right lateral-posterior thoracic mass, measuring 5 cm from the long axis, of firm consistency, without local inflammatory signs. The rest of the somatic examination was unremarkable, including the absence of palpable lymphadenopathy.

The chest x-ray objectified a right subaxillary opacity with bilateral upper third nodular opacities [figure1]. The chest ultrasound showed an echogenic fusiform subcutaneous tissue formation of $3.2 \times 3.15 \times 1.4$ mm in diameter infiltrating the 9th rib without costal lysis [figure2].

The thoracic CT scan revealed the presence of a mass of heterogeneous density at the level of the 8th intercostal

space with bilateral upper lobar pulmonary nodules [figure3].

At this stage, the neoplastic origin, in particular a malignant parietal tumor (chondrosarcoma, osteosarcoma, fibrosarcoma, etc.) associated with pulmonary nodules appeared very likely from the clinical, radiological and deterioration of the general state. View of the young age and the upper lobar site of pulmonary involvement, an infectious pathology has been discussed, namely parietal and pulmonary tuberculosis.

The biological assessment found an anemia at 10.5 g / dl hypochromic microcytic, without hyperleukocytosis or lymphopenia. The plasma protein electrophoresis found an inflammatory profile. The intradermal tuberculin reaction returned positive (10mm). The search for tuberculosis bacilli in sputum as well as HIV serology; viral hepatitis B and C were negative.

A transparietal biopsy of the mass showed a tuberculoid granulomatous inflammation with suppurative necrosis.

The flexible bronchoscopy revealed diffuse second-degree inflammation. The search for bacillus koch (BK) in the bronchial suction fluid returned negative. Mycobacterium tuberculosis DNA was tested using the polymerase chain technique (PCR).

The diagnosis of cold thoracic parietal tuberculosis abscess with pulmonary involvement was accepted. The patient underwent a flattening of the parietal abscess in surgery combined with anti-tuberculosis treatment based on isoniazid, rifampicin, pyrazinamide and ethambutol for two months, then isoniazid and rifampicin for seven months. The evolution under treatment was favorable with complete disappearance of the parietal abscess.

3. Discussion

Tuberculosis of the chest wall remains an unusual and little-known localization of tuberculosis. Its frequency is estimated between 1 and 5% of osteoarticular tuberculosis which constitutes less than 15% of extra-pulmonary tuberculosis [1]. It is very often a localization occurring during severe tuberculosis and disseminated during, in particular, infection with the human immunodeficiency virus (HIV) [4]. Costal and intercostal space injuries are the most frequently encountered [1, 2]. Rarer involvement of the sternum, collarbone and vertebrae [1, 2, 5]. Cold thoracic abscess is observed in both sexes and at all ages with a slight male predominance. The prevalence is higher in young adults, between 15 and 35 years old, and exceptional in children [6]. This localization is due to hematogenous, lymphatic or contiguous dissemination. The anterior intercostal nodes are more often affected, explaining the preferential parasternal location of cold abscesses.

The clinical signs of parietal tuberculosis are not very specific and develop at low noise. Pleural type pain, dry cough, moderate fever, may be present [2] but sometimes may be completely absent. The size of the abscesses is variable, as well as the consistency that is rarely fluctuating, which can lead the diagnosis to a tumor origin. [1, 2, 7]. They generally appear in the form of a solitary parietal swelling but multiple lesions are possible, they were found in two or more thoracic or extra thoracic sites. In a recent Tunisian study [8], out of a total of 24 cases, the cold abscess was multifocal in 3 patients, associated with pleuro-pulmonary tuberculosis in 16 patients and extra-pulmonary tuberculosis in 9 patients. Our patient had a double parietal and pulmonary localization.

Radiologically; this pathology presents no specific signs at the imagery. Thoracic ultrasound is with a great contribution, showing a heterogeneous hypoechoic aspect testifying to the softened character of the parietal swelling. The thoracic computed tomography; more sensitive than conventional radiography; shows a mass of heterogeneous density with central hypodense areas of necrosis with sometimes calcifications, bone or costal destruction. Finally, it also makes it possible to search for other tuberculous locations, whether they are pulmonary, underlying pleural or extra-pulmonary [1, 2]. Magnetic resonance imaging shows morphological and signal abnormalities of the bone and soft tissue in T1 hyposignal and intense in T2 [5].

These examinations make it possible to perform a puncture for bacteriological study and / or biopsy for histological study. The diagnosis then remains difficult because these lesions can simulate a neoplastic or infectious pathology having the same clinical and radiological aspect [2].

The diagnosis of certainty of tuberculous origin is based on the isolation of *Mycobacterium tuberculosis* in the puncture fluid. BK are rarely found on direct examination and are most often isolated by culture on Lowenstein. However, with the polymerase chain reaction (PCR) technique, the diagnosis can be made quickly in order to start anti-tuberculosis treatment early [9]. The biopsies' histological study of the banks of the abscess or of the pieces of surgical

excision of the parietal mass also allows to confirm the diagnosis by showing a granulomatous tuberculoid inflammation with caseous necrosis [3]. In our observation, the histological examination of the biopsy led to the diagnosis of thoracic parietal tuberculosis and the bacteriological examination of the bronchial suction fluid confirmed the existence of a second pulmonary localization. Treatment is based on anti-tuberculosis multidrug therapy, the duration of which is 6 to 9 months depending on the existence or not of other associated tuberculosis locations [2, 9]. The combination of surgery (evacuation, excision of abscess in bulk) with anti-tuberculosis treatment makes it possible to reduce recurrences [7]. The prognosis is most often favorable, conditioned by an early diagnosis and the initiation of rapid treatment.

In conclusion, thoracic parietal tuberculosis is a very rare and unusual form of tuberculosis. It often poses a diagnostic problem with parietal tumors. The search for other tuberculosis locations is a necessary step in the diagnostic process. Only histological and / or bacteriological examination of mass biopsies can confirm the diagnosis. The latter being early is the best guarantee of a cure without complications.

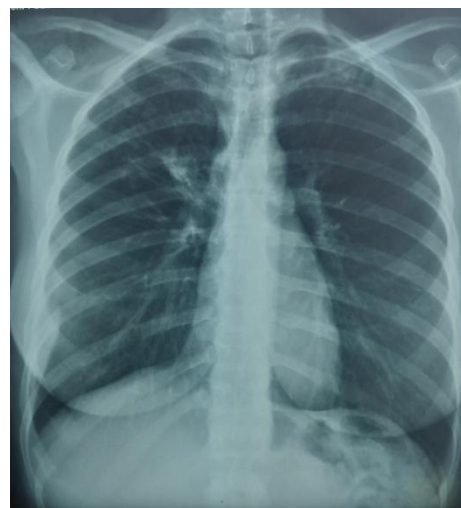


Figure 1: Radiography of the thorax face: opacity under the right axillary + bilateral upper nodular opacities



Figure 2: Chest ultrasound: heterogeneous echogenic fusiform spindle tissue formation infiltrating the 9th rib without costal lysis

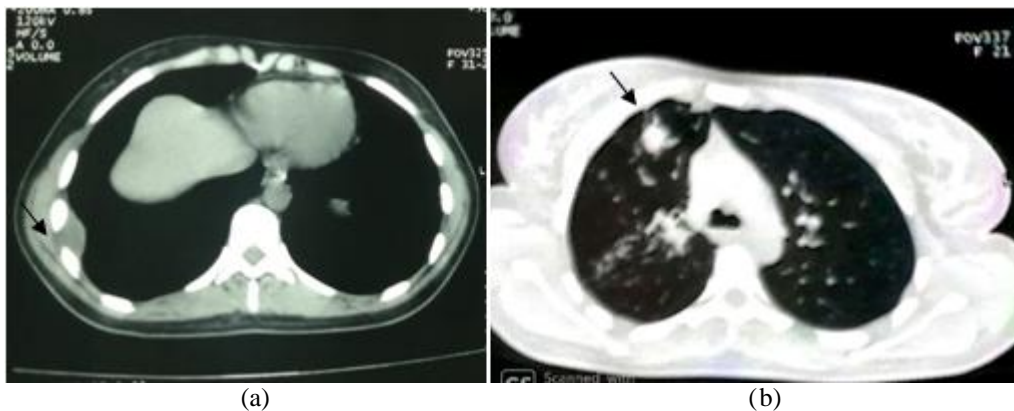


Figure 3: Chest CT: a) Mass of heterogeneous density at the level of the 8th intercostal space b) bilateral upper lobar pulmonary nodules

4. Conflict of interest

No conflict of interest

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