

A Case of Chest Wall Tuberculosis without Pulmonary Involvement

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Received: October 13, 2021; **Published:** November 29, 2021

Abstract

Chest wall tuberculosis is rare. Most commonly it is associated with pulmonary tuberculosis. Chest wall tuberculosis usually presents as cold abscess that is without any signs of inflammation. Certainly, anti-tubercular medications are the treatment of choice with or without surgical intervention. Herby, we report a case of chest wall tuberculosis without any pulmonary involvement which presented with features like pyogenic abscess.

Keywords: Chest Wall Tuberculosis; Pulmonary Involvement; Pyogenic Abscess

Introduction

Tuberculosis is still a common infectious disease and still a significant public health problem in the developing nations. About 81.5% of incident cases of tuberculosis in the world are diagnosed in countries of Africa and Asia and countries in these regions comprises 78% of the death due to tuberculosis. Although tuberculosis is common in certain geographical area, chest wall tuberculosis as extra pulmonary tuberculosis is a rare one. There are only a few series or case reports of chest wall tuberculosis. There are two mechanisms described in the literatures as pathogenesis of chest wall tuberculosis; hematogenous or lymphatic spread from a primary tubercular focus, direct extension from contiguous lung and/or pleura. Most common is hematogenous spread from a tubercular focus. Chest wall tubercular abscess may have differentials of pyogenic abscess and tumor. This case report is about a case of chest wall tuberculosis in an immunocompetent young patient without any evidence of pulmonary tuberculosis. A high index of suspicion is essential to diagnose musculoskeletal tuberculous and it's a challenge for practicing physicians.

Case Report

A 28 years old male presented in medicine out patient department with the complaints of a painful, gradually increasing swelling over the chest wall over lower part of left side of the chest. He was also suffering from high grade intermittent fever for two weeks. There was no history of pulmonary symptoms such as cough, haemoptysis. He did lost his appetite and lost about two Kg weight. His mother, who lives with him, was suffering from sputum positive pulmonary tuberculosis and was on category 1 antitubercular treatment. Our patient was treated with several types of antibiotics by primary care physicians. Examination revealed that the patient was febrile with a temperature 102°F. The only other findings on clinical examination was a large measuring 6 by 5 cm, firm, tender soft tissue mass in the left lower part of the thoracic wall. The skin overlying the swelling appeared normal, with no scars, rash, or sinuses.

The white blood cell count and erythrocyte sedimentation rate was normal. Biochemical investigations including C-reactive protein were within normal ranges. HIV test was negative. A plain radiograph of the chest revealed a homogenous opacity in left lower zone of lung field (Image 1). An ultrasonogram (USG) was performed and it revealed abscess with the internal echotexture of low echogenicity. USG-guided aspiration revealed pus (Image 2) which did not yield any growth including AFB in bacterial culture.

Citation: Ahmed Al Montasir, et al. "A Case of Chest Wall Tuberculosis without Pulmonary Involvement". *EC Clinical and Medical Case Reports* 4.12 (2021): 35-38.



Image 1: Chest X ray.



Image 2: Aspirated pus from chest wall tubercular abscess.

Computed tomography scan (CT scan) of the chest revealed a cystic lesion with fluid content measuring 8 × 7 cm in size in left lower chest wall (Image 3). Under local anesthesia, the abscess was drained. A very thick pus was found. A part of the abscess wall was resected and sent for histopathological examination which revealed multiple granulomas with caseating material, suggestive of tuberculosis. Category 1 anti-tuberculosis treatment started and follow-up visits were satisfactory considering resolution of fever and healing of tuberculoma over the chest wall.

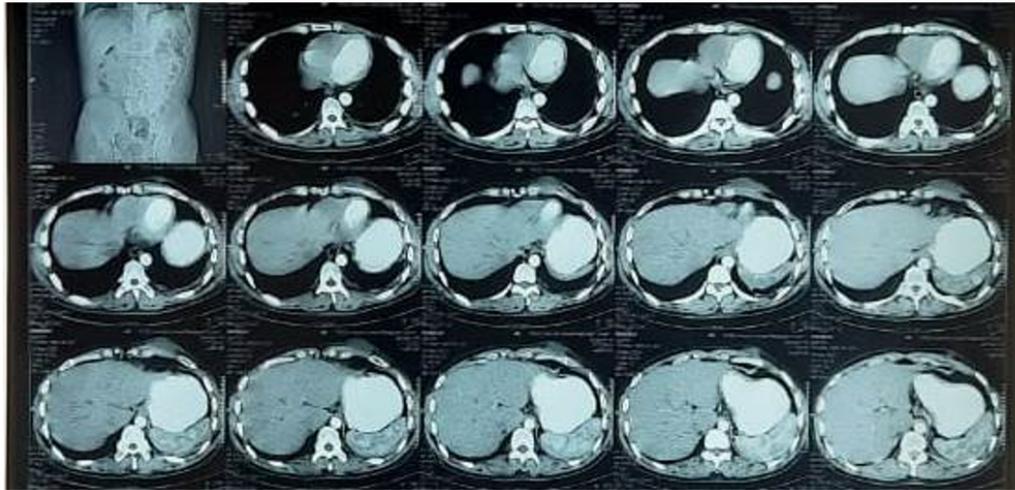


Image 3: CT Chest showing cystic lesion with fluid content in the anterior aspect of right chest wall.

Discussion

Extra pulmonary tuberculosis is one fifth of all tuberculosis cases [1]. Tuberculosis of the chest wall constitutes 1 - 5% of all cases of musculoskeletal tuberculosis. Most common sites of skeletal tuberculosis in descending order are vertebral spine, hip joints, knee joints, foot bones, hand bones and shoulder joints. The least affected sites of musculoskeletal tuberculosis are the sternum, ribs, and the sternoclavicular joints and it constitutes about 1 - 2% of the total cases of musculoskeletal tuberculosis [1,2]. Due to the emergence of multidrug-resistant strains of tubercular bacilli and the rapid increase in the number of immuno-compromised patients the incidence is expected to rise in the near future. It is more common in male. Presentation varies in different patients groups. Immuno-compromised patients may have only mild symptoms such as low grade fever, localized chest pain. Immuno-competent individuals may present with high grade fever, painful swelling over chest. Loss of appetite and weight loss is common in both groups. Diagnosis of primary chest wall tuberculosis may be delayed as signs and symptoms are often non-specific [1-3]. In our case the lesion simulated a pyogenic abscess. It may only present as a painful mass. The average size reported in literatures were from 4 to 10 cm. Chest wall tuberculosis can involve ribs as well as sternum. An early diagnosis and treatment are important to prevent bone and joint destruction which may result long term morbidity. More than half of chest wall tuberculosis shows no evidence of rib destruction, as reported by Lee. Solitary lesions are commonest one [3,4].

The diagnosis of chest wall tuberculosis can be missed if patients present with high grade fever for a shorter duration. Physicians often consider pyogenic abscess in these scenario, as happened in this particular case. An initial ultrasonography guided needle aspiration may help to exclude other differential, such as tumor. A computed tomography is helpful in determining anatomic origin, location and extent of the tubercular abscess. Ultrasonography and CT are also useful in determining response to therapy. Surgical debridement and histopathologic examination of tissue will confirm the diagnosis [3-5].

Treatments of chest wall tuberculosis have different opinions. Some case series have shown good response only with anti-tuberculosis treatment without any surgical interventions [5,6]. World Health Organisation have recommended a standard six month anti tubercular therapy in category 1 tuberculosis cases [7].

Conclusion

Although chest wall tubercular abscess is a rare entity but it should be kept in the list of differentials in tuberculosis endemic countries like Bangladesh. It should also to be considered in immune-compromised patients. Appropriate investigations should be done to rule out mycobacterial infection.

Conflicts of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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Volume 4 Issue 12 December 2021

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