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Primary Tubercular Abscess of Chest Wall Masquerading as Breast Lump: A Case Report

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Abstract

Mycobacterium tuberculosis causes significant mortality and morbidity in developing countries. Primary extra-pulmonary tuberculosis of chest wall is a rarity and usually presents as pyogenic abscess which does not respond to conventional antibiotics. Diagnosis is difficult and treatment is controversial in the above condition. A case of primary tuberculosis of chest wall is being presented here in 29-year-old female patient who presented with clinical features of breast lump which was successfully managed with antitubercular therapy and image guided aspiration.

Keywords: Tubercular, EPTB, Acid Fast Bacilli

Introduction

One of the rare form of extra-pulmonary tuberculosis (EPTB) is Chest wall tuberculosis (TB) in immune-competent individuals and comprises 1–5% of all musculoskeletal TB and represents approximately 1% to 2% of TB overall [1]. Chest wall TB sometimes resembles like a pyogenic abscess or soft tissue tumor. These abscesses which are not responding to routine treatment need investigation to rule out mycobacterial infection. Tubercular infection may result from hematogenous spread from a focus elsewhere in the body or direct entry of organism. Mycobacterial bacilli may also be transmitted through lymphatic channels from infected lymph nodes [2]. A case of chest wall tubercular abscess is being presented here which was localized to chest wall and there was no evidence of infection elsewhere in the body. Hence, it appears to be a case of primary involvement of chest wall.

Case Report

29-year-old lady presented with complaint of lump left breast of 03 months duration. There was no history suggestive of constitutional symptoms of TB such as night sweats, weight loss, fever or cough with expectoration. No past or family history of TB or exposure to patient suffering from tuberculosis. On examination, the patient had a average built, was afebrile and with normal vital parameters. Local examination revealed a 6x5 cm sized lump with firm consistency and diffuse margins was palpable underneath left breast and pectoral muscles which was fixed to chest wall. Nipple areolar complex was normal, Skin overlying breast was normal. No axillary lymph nodes were palpable. Respiratory system examination was normal. Her routine investigations including haemogram, liver and renal function tests were within normal ranges. Serology for HIV was found to be nonreactive. Chest X-ray was normal. Ultrasonogram (USG) Chest revealed 4.64x1.42x4.27 cm cystic thin walled lesion abutting rib on left chest wall. Contrast enhanced computed tomography (CECT) Chest was suggestive of 4.6x2.1x5 cm enhancing cystic lesion with peripheral enhancing wall noted on left side anterior chest wall under pectoralis muscle. No extension into pleura or lung. Lung parenchyma & ribs normal. Features were suggestive of chest wall abscess. Purulent material was aspirated on ultrasound guided Fine needle aspiration of the lesion. On microscopic examination mononuclear inflammatory cells with necrosis was found. Ziehl Neelsen stain tested positive for Acid fast bacilli (AFB). Mycobacterium tuberculosis polymerase chain reaction (PCR) mycosure detected mycobacterium tuberculosis complex. Erythrocyte sedimentation rate showed 31.0 mm fall in one hour. Montoux test was negative. Ultrasonogram of Abdomen and pelvis was normal.

She was managed with Anti tubercular therapy (ATT) using Rifampicin (R), Pyrizinamide (Z) and Ethambutol (E) & Isoniazid (H) (2HRZE + 4HR) for six months. On follow up after 6 months, Abscess size had remained unchanged. Hence, USG guided

complete aspiration of pus was done and ATT was discontinued. She is under six monthly follow up with USG examination. After 03 years of follow up the patient didn't have recurrence of abscess and was asymptomatic.

Discussion

Tuberculosis is a significant burden on health care system. In developing countries like India, it is a major public health problem due mortality and morbidity associated with it. As per the WHO Global report on tuberculosis in 2020, Globally an estimated 10.0 million people were infected with TB in 2019. Among HIV-negative people in 2019 there were 1.2 million TB deaths and an additional 2.08 lacs deaths among HIV-positive people. India accounted for 26% of these cases [3].

WHO defines Extrapulmonary tuberculosis as an infection by M.tuberculosis which affects tissues and organs outside the pulmonary parenchyma (eg. Pleura, lymph nodes, abdomen, genitourinary, skin, bones & meninges). It represents between 20 and 25% of all TB cases [4].

Chest wall TB is a rare form of EPTB that accounts for 1–5% of all musculoskeletal Tuberculosis [1]. Most common site to be involved is sternum followed by ribs, costochondral junctions and vertebral bodies. Chest wall TB may result from an extension of underlying pleuro-pulmonary disease or direct inoculation or hematogenous/lymphatic spread or as or infection of bony structures [2]. Diagnosis requires a high index of suspicion. Delay in diagnosis results in increased morbidity and mortality. Presentation can be varied and sometimes chest x-rays may be normal and smear may be negative. Radiological investigations such as USG, CT scan and Magnetic resonance imaging (MRI) help in diagnostic approach and in taking samples for cytology and biopsy from the suspected lesion.

Diagnosis of EPTB requires samples from fluids and/or tissues by fine needle aspiration biopsy (FNAB) for, culture, smear, PCR testing and sometimes an open biopsy of the affected tissue in case of negative FNAB/ core needle biopsy. Definitive diagnosis requires the detection of mycobacterium tuberculosis bacilli. Demonstration of acid-fast bacilli on Ziehl-Neelsen staining gives quick diagnosis. Mycobacterium culture is the gold standard test. It determines the species of mycobacteria and its sensitivity to different drugs can be established. Histopathological studies of the biopsy specimen reveals typical necrotizing granuloma containing lymphocytes, macrophages and Langhans giant cells. Caseous necrosis can be found in the central part of the granuloma. It has high specificity and it could justify the decision to initiate antituberculous therapy. However, the presence of granulomatous lesions without necrosis is suggestive of Chest wall TB but it requires the exclusion of other infectious and non-infectious diseases [5]. PCR is seen to be useful for the diagnosis of tuberculosis in patients where conventional diagnosis not possible and the provisional diagnosis of tuberculosis has been made on the basis of clinical presentation and histology/cytology examination without demonstration of AFB [6].

There is no unanimous opinion on optimal treatment of chest wall TB. Some authors suggest that only medical treatment with ATT will suffice is whereas others advocate aggressive drainage/debridement in addition to medical treatment to prevent recurrence [7]. Cho *et al*. recommended preoperative and postoperative ATT and complete resection of chest wall mass including any suspicious rib [8]. However, National Tuberculosis Elimination Programme (NMEP) recommends a standard 6-month regimen with 2 months of intensive phase (HRZE) and 4 months of continuation phase (HR) [9].

Conclusion

EPTB chest wall is rare entity. This disease mimics breast cancer clinically. The diagnosis is based on the microscopic examination of biopsy specimen or the microbiological culture. It should be suspected in a patient who has a recurring abscess after adequate drainage. Treatment is mainly medical. If medical treatment is insufficient or fails then it requires surgical drainage or debridement along with ATT.

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