

Case Report

Tuberculosis of Breast - A Case Report with Literature Review

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Abstract

Breast tuberculosis is a rare manifestation of extra-pulmonary localization of the disease which accounts for less than 0.1% of breast conditions in developed countries, but reaches 3-4% in regions where the disease presents with high incidence. It appears mostly in women of reproductive age. We report a 34 year old lady with right breast lump and axillary lymphadenopathy. Smear for tuberculosis and TB tissue cultures were positive and the histopathology repeatedly showed granulomatous inflammation. Treatment with surgery followed by standard anti tubercular drugs was started once mycobacterium tuberculosis was finally cultured from the excised tissue. This case highlights the difficulty in differentiating culture negative tuberculosis from other causes of chronic granulomatous mastitis and the importance of keeping a high index of clinical suspicion.

INTRODUCTION

Tuberculosis has traditionally been regarded as a pulmonary disorder. Breast tuberculosis is a rare entity, with an incidence of less than 0.1% of all breast lesions in Western countries and 4% of all breast lesions in TB endemic countries. This was first described by Sir Astley Cooper in 1829 as the “scrofulous swelling in the bosom of young women” [1].

High immunity conferred by breast is of significance for low recorded incidence, offering inherent resistance of breast to tuberculosis infection. Tuberculosis mastitis is an uncommon lesion even in countries where the incidence of pulmonary and extra pulmonary TB is still very high. Breast tuberculosis commonly affects women in the reproductive age, usually between 21 and 30 years and can present either as an abscess or as a unilateral, painless breast mass [2].

The disease may be of primary etiology when infection affects breast solely or may result from other foci in the body, which is termed as the secondary tuberculosis of breast. Diagnosis of breast tuberculosis, therefore, remains a challenge for clinicians and requires a high degree of suspicion [3]. Mammography or ultrasonography is unreliable in distinguishing the breast tuberculosis from carcinoma because of the variable pattern of presentation of such inflammatory lesion [4]. Histopathology plays pivotal role in the diagnosis. Surgery is reserved only for selected refractory cases. We describe a case of tuberculosis of breast in the present article.

CASE REPORT

34 years old lady belonging to poor socioeconomic status

presented to our outpatient department with history of painful lump in the right breast for about 1 year. Patient was treated with various antibiotics for several weeks. Her symptoms worsened over a period with increasing pain, swelling and reddish discoloration of skin overlying the breast lump. Patient denied any history of night sweats; evening rise of temperature, respiratory complaints, loss of weight. There was no family history of breast cancer, no personal history of diabetes or recent exposure to a person with tuberculosis. Patient had history of excision biopsy of right axillary lymph node 8 months back which showed granulomatous inflammation with caseous necrosis, giant cells and epithelioid cells. Patient was treated with anti tubercular drugs for 1 month and discontinued.

On examination; she had a firm lump palpable in the lower outer quadrant of the right breast which measured 3 x 2 cms with discharging sinuses over the surface (Figure 1) 2 cms scar was noted in the anterior axillary fold on the right side. Ipsilateral axillary lymph nodes were enlarged. The rest of the physical examination was unremarkable. Blood investigations revealed leukocytosis (15×10^9 /L), elevated CRP (72 mg/L) and elevated ESR (40mm/hr). Serum ACE was normal. Test for HIV was negative. Tissue auto antibodies and ANCA were negative. A chest radiograph and ultrasound abdomen was normal.

Ultrasound of the right breast showed hypoechoic lesion of size 3.2 x 2.5 cms in the lower outer quadrant. Mammography showed increased density and coarsened trabeculations but no micro calcifications (Figure 2) MRI was suggestive of advanced right breast carcinoma with lymph nodal involvement or mastitis with reactive lymphadenopathy. FNAC from the breast lump

showed chronic intra lobular mastitis with fibrosis, necrosis and lymphocytic infiltration, did not show any malignant or atypical cells. Direct smear of breast discharge was positive for acid fast bacilli and culture was positive for AFB. Mantoux skin test was 16mm in diameter.

Patient underwent excision of breast lump with sinus tract and axillary lymph nodes and was started on ATT after proper counseling and understanding the nature of the disease by her and her parents with daily dose of 300mg isoniazid, 600mg rifampicin, 1500mg pyrazinamide, ethambutol and 10mg pyridoxine for 9 months. Histopathology of the excised tissue showed epithelioid abscesses with Langhans' giant cells and caseous necrosis (Figure 3).

In subsequent 6 months period no other sinus tract appeared and there was no recurrence of the disease and the total white cell count was $8.3 \times 10^9/L$ and CRP was 3mg/L. One year after completion of therapy she remained asymptomatic with no recurrence of disease.

DISCUSSION

Breast tuberculosis is uncommon in surgical practice. Lack of awareness of manifestations and simulating benign or malignant lesions of disease are contributory to its overlooking and misdiagnosis. It may coexist with carcinoma. High incidence of breast tuberculosis is presumed in India despite only few hundred cases of breast tuberculosis reported, probably due to lack of

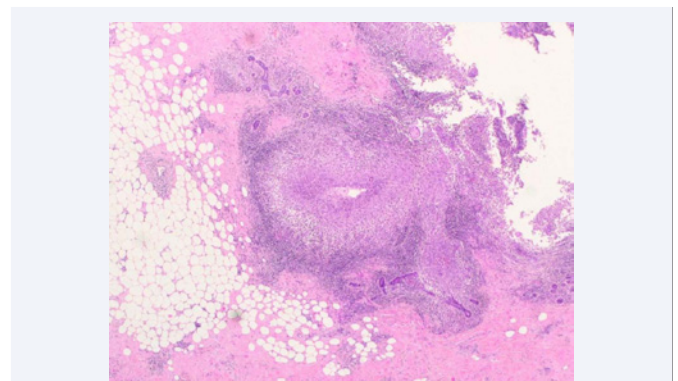


Figure 3 Histopathology of the breast Lump showing a mixed inflammatory cell infiltrate with suppurative granulomas.

awareness of manifestation of disease or misdiagnosis [5].

No well-defined clinical features suggestive of breast tuberculosis are defined. Involvement of breast can be unilateral or bilateral. There is only few reports documented bilateral breast tuberculosis in India. Essentially, tuberculosis infection is rarely confined only to the breast, and secondary tuberculosis is sequelae of tuberculosis in other organs of the body. The reported incidence of isolated tuberculosis of the breast ranges from 0.10% to 0.52% [6].

Breast tuberculosis was classified into five different types by McKeown and Wilkinson [7]:

- (i) Nodular tubercular mastitis,
- (ii) Disseminated or confluent tubercular mastitis,
- (iii) Sclerosing tubercular mastitis,
- (iv) Tuberculosis mastitis obliterans,
- (v) Acute miliary tubercular mastitis.

Risk factors are multiparity, lactation, trauma, past history of suppurative mastitis, and AIDS. Various routes of infection described, including haematogenous, lymphatic, direct inoculation, and/or ductal infection. Occasionally, direct extension from contiguous structures such as infected rib, costochondral cartilage, sternum, shoulder joint, through the chest wall from a tuberculous pleurisy, or via abrasions in the skin can pass infection into breast [8]. A rare form of disease, disseminated form of breast tuberculosis, is characterized by multiple tubercular foci throughout the breast, which may undergo caseation leading to sinus formation.

Symptoms in breast tuberculosis are usually seen for less than one year; its duration varied from few months to several years. Breast tuberculosis can be presented as a lump, ulcer, and breast abscess with or without discharging sinuses [9]. Lump is commonly seen in the central or upper outer quadrant of the breast, an extension of tuberculosis from axillary nodes to the breast. Formation of fistulas and sinus tracts are usually seen in advanced disease or after needle puncture [10]. If needed, X-ray chest is done to detect any evidence of active or stigmata of healed lesion in the lungs, and Mantoux skin test positivity in adults has relevance in non-endemic areas. Fine-needle aspiration



Figure 1 Discharging sinus present on right breast.



Figure 2 Mammography showed an increase in right breast density with diffuse thickening of the soft tissues without nodular lesions or micro calcifications.

cytology aid indagnosis of breast lumps with or without lymphadenopathy.

Cytological and microbiological studies can be employed with ultrasound guided fine-needle aspiration. Diagnosis based on identification of typical histological features or the tubercle bacilli under microscopy or culture. The culture used to be positive only in 25%-30% cases. Magnetic resonance imaging may be useful in demonstrating the extra mammary extent of disease. Cytological and bacteriological study of aspirate proves definitive diagnosis; this can be complemented with biopsy. In mammography, three different patterns are recognized-The nodular pattern, the disseminated pattern and the sclerosing pattern. This is difficult to differentiate between tuberculosis lesion and carcinoma on mammogram [11].

Ultrasonography reveals heterogeneous, hypoechoic, fluid containing masses with internally floating, and echogenic material in the breast parenchyma or retro mammary region in tuberculosis breast. Microscopy shows fibrous and lymphoid tissue infiltrated by large epithelioid granulomas with central a cellular necrosis and many giant cells [12].

Antitubercular therapy (ATT) with or without minimal surgical intervention forms the main stay of treatment. Surgical intervention is required for aspiration of abscesses and excision of sinuses and masses. In resistant cases, simple mastectomy can be performed.

CONCLUSION

Breast TB should be suspected when there is poor response to (non TB) antibiotics used for treatment of breast abscess, especially in a young patient originating from a TB endemic country. It seems that empirical therapy might be effective when primary evaluations for other causes lead to no definite conclusion. Diagnosis is based on histopathology and it is less

probable that a microbiological diagnosis is made. If there is a high clinical suspicion of TB, then a trial of antituberculosis therapy with regular clinical assessment is warranted.

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