A rare case of tuberculous breast in modern era with review of literature

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ABSTRACT

Introduction: Tuberculous breast is an uncommon disease with non-specific findings on clinical assessment, radiological imaging and fine needle aspiration. The disease is underdiagnosed as breast lump present masquerading as breast carcinoma. The results for acid fast bacilli and culture are frequently negative. Case Report: Thirty-five years woman presents with a lump, scar and scabs in the lower medial quadrant of left breast for last 6 months. Soon she noticed fresh weeping ulcer/ sinus discharging serous discharge. A soft lump was palpable which was nontender and non-fluctuant. After clinical assessment mammography and FNAC (fine needle aspiration cytology) was done. Sonomammography revealed a soft tissue mass in left breast having irregular margin and central necrotic area with debris. Radiological mammography revealed inflammatory mass with left axillary lymph nodes. MR mammogram and biopsy diagnosed tubercular pathology. The lesion was completely resolved with antitubercular therapy. Conclusion: This case highlights the difficulty in making the diagnosis of lump breast by clinical assessment, radiological imaging and tissue diagnosis. The interpretation of these investigations may be equivocal. However, presence of any epithelioid granuloma, Langerhans giant cells, caseation necrosis or acid-fast bacilli can give fairly confirmatory diagnosis of tuberculous breast. Antitubercular therapy can completely resolve this lesion.

Keywords: Breast tuberculosis, Granulomatous mastitis, Primary, Tuberculosis breast, Tuberculous mastitis

INTRODUCTION

Every organ of the human body can get affected by tuberculosis. The mammary glands in women can get infected with tuberculosis [1]. Primary tuberculosis of breast is a very rare type of extra-pulmonary tuberculosis [2]. There can be varied presentation in tuberculosis [3]. The breast tuberculosis is very rare with an incidence of 0.1-0.5% of breast diseases but incidence is more in countries endemic of tuberculosis like India [4]. Tuberculosis of the breast commonly affects women in reproductive age group but does affects the multiparous post-menopausal women [5]. The most common presentation of breast tuberculosis is lump in the breast, mostly affecting the middle of breast or outer upper quadrant of breast [6]. On clinical examination, the tubercular breast lump resembles recurrent chronic breast abscess and carcinoma breast [7]. As a part of triple assessment mammography
and tissue diagnosis with fine needle aspiration (FNA) or biopsy is required for confirmation of diagnosis [8]. PCR of tissue may not be positive [9]. Antitubercular therapy is curative, surgical treatment in form of aspiration or drainage is required if there is abscess formation [10].

A rare case of a woman presenting with lump left breast is presented in which final diagnosis of tubercular breast could be made on biopsy which reported presence of acid fast bacilli. Presentation of this rare case is useful for clinicians as high degree of suspicion of this entity, can be useful in diagnosing this type of breast lump. A brief review of literature is also given.

CASE REPORT

Thirty-five years woman presents with a lump, scar and scabs in the lower medial quadrant of left breast from last six months. No history of lactation. Tender, irregular, ill-defined lump in the breast. Nipple areola and overlying skin was normal. There was no axillary or cervical lymphadenopathy. She had an ulcerated lesion without any systemic symptoms. She took treatment from family physician probably antibiotics which resulted in healing of this ulceration but never complete healing occurred. Soon she noticed fresh weeping ulcer/ sinus discharging serous discharge. A soft lump was palpable which was nontender and non-fluctuant (Figure 1). The contralateral breast was normal on clinical examination. The patient is married having two children, the youngest child is 9-year-old. The menstrual cycle was normal of 3-4/28 days. After clinical assessment mammography and FNAC (fine needle aspiration cytology) was done. Sonomammography revealed a soft tissue mass in left breast having irregular margin and central necrotic area with debris (Figure 2). The hematological investigations were done; Hb 10.5 mg%, TLC 9000, N 55%, L 40%, M 4%, E 1%. B 0%. The ESR was 20 mm in first hour. The Mantoux test was 7 mm in diameter. The X-ray chest PA view was normal. Radiological mammography revealed inflammatory mass with left axillary lymph nodes (Figure 3). FNA suggested a chronic inflammatory lesion with no evidence of foreign body granulomas. Fine needle aspiration smear shows the presence of ductal cells in amorphous, granular and acellular background. Neither typical epithelioid granuloma nor Langerhans giant cells were reported. Acid fast bacilli (AFB) on ZN staining were not seen. So FNAC was inconclusive. The culture and sensitivity for tuberculosis was not done as no pus could be aspirated. MR mammography was done as suggested by radiologist which concluded with diagnosis of granulomatous mastitis (Figure 4). To make a concluding tissue diagnosis a wedge biopsy from margin of ulcer was done which revealed foreign body granulomas (Figure 5). Acid fast bacilli were seen in the tissue sections using Ziehl-Neelsen staining confirming diagnosis of tubercular pathology. Routine investigations were within normal limits. Plain X-ray chest was unremarkable.

The tuberculin test was borderline positive (10 mm). Serological tests for human immunodeficiency virus (HIV) I and II were negative. This patient was treated with antitubercular therapy (four drugs daily regimen) for nine months which resulted in complete resolution of tubercular mastitis (Figure 6). Regular follow up was done at 3, 6 and 9 months.

DISCUSSION

McKeown et al (1952) classified tuberculosis of the breast into five pathological varieties; First, nodular form

![Figure 1: Initial Presentation of Left Breast Lump.](image1)

![Figure 2: Sonomammogram left Breast.](image2)
starts as lump which is slowly growing and later on involves the skin forming ulcers and sinuses. Microscopically it shows extensive caseation and little fibrosis. This is the most common variety. Second, disseminated form involves the whole breast with multiple foci of tubercles which caseate forming ulcers and multiple sinuses. Enlarged and matted axillary lymph nodes are present in ipsilateral axilla. Third, sclerosing form shows extensive fibrosis with little caseation. The entire breast becomes hard with nipple retraction. Commonly seen in involuting breast of old females. Fourth, tuberculous mastitis obliterans occurs due to ductal infection and produces proliferation of lining epithelium with marked epithelial and periductal fibrosis. The occlusion of ducts due to fibrosis produces cystic spaces which resembles cystic mastitis. Fifth, miliary tuberculous mastitis occurs as a part of acute miliary tuberculosis. The fourth and fifth varieties are not seen these days [11]. With this concept Tewari et al in 2005 reclassified breast tuberculosis into three types; nodular, disseminated and abscess. This modified classification is based on fact that sclerosing tubercular mastitis, tuberculous mastitis obliterans and acute tubercular mastitis are rarely present these days [12].

The tubercular infection may reach the breast by following pathways; haematogenous, lymphatic, infection of ducts through the nipple openings and skin abrasions. The most common concept is that spread of tubercular bacilli occurs via lymphatic spread. The route is from lungs via tracheobronchial, paratracheal, main lymphatic trunk and internal mammary lymph nodes to breast [13]. The breast, the thyroid gland, the skeletal muscle and the spleen are resistant to multiplication of
tubercular bacilli. The primary tuberculosis of breast occurs commonly in women who are pregnant lactating as the breast is vascular with dilated ducts. This helps in growth of tubercular bacilli [14].

Sabageh et al reported that tuberculous mastitis is a rare disease even in countries in which tuberculosis is endemic. The breast tuberculosis typically presents as tender lump in the breast with palpable axillary lymph nodes in multiparous woman. It always presents a diagnostic challenge masquerading as breast carcinoma. The axillary lymph nodes can be present in both tubercular breast and carcinoma breast. The clinical diagnosis of carcinoma breast is more likely to be kept [15]. The breast tuberculosis is a rare disease which can be diagnosed only if clinician is suspicous of tuberculosis in patients presenting with fistula, sinus or nodule in the breast. The diagnosis of burst breast abscess and ulcerated carcinoma breast should also be suspected [16]. A as a part of triple assessment for breast lump all these patients need further radiological and tissue diagnosis for confirmation of tubercular breast lump [17]. Even in tissue diagnosis by FNA or histopathology, a diagnostic suspicion tuberculosis is required to confirm the diagnosis breast tuberculosis. Fine needle aspiration cytology (FNAC) forms part of triple assessment of lump breast so it is an essential diagnostic tool. Mammography may not be diagnostic for tuberculosis of the breast. FNAC is the preliminary investigation for diagnosis of breast lump as an essential part of triple assessment of breast lump. Mostly this can diagnose caseating granulomas in breast and demonstrate presence of AFB in aspirates from breast lump. If there is simultaneous nipple discharge, the imprint cytology should also be done for tuberculosis [18]. Radiological investigations like sonomammography, mammography, CT scan and MRI of the breast are used for diagnosis of breast lump. Sonomammography or mammography may reveal ‘sinus tract sign’ in a few patients. There is a dense sinus tract connecting breast lump to a localized skin thickening but if present is strongly suggestiv of tuberculous breast abscess [19]. Mammographic appearance in tuberculous breast is very similar to fibroadenosis [20]. These radiological investigations are useful in differentiating breast tuberculosis from breast carcinoma and breast abscess, the two most common differential diagnosis of tuberculous breast [21]. Early diagnosis of tuberculous breast is difficult till recurring breast abscesses or multiple ulcer or sinuses appear, of course late in the disease [22]. The polymerase chain reaction (PCR) for diagnosis of breast tuberculosis is less commonly used as tubercular abscess is less common so the pus aspiration cannot be sent for PCR in every patient [23].

Antitubercular therapy is used to treat breast tuberculosis. No specific guidelines are available treatment of breast tuberculosis and regimen followed is as for extrapolmonary tuberculosis. Four drugs regimen consisting of Isoniazid, Rifampicin, Ethambutol and Pyrazinamide is used for 2 months and then, two drugs Isoniazid and Rifampicin are continued for another 4 months. Some clinicians use 9 months regimen; for 3 months four drugs are used and followed by two drugs for another 6 months. MDR patients may require combined treatment with first and second line treatment [24]. Surgical intervention in form of aspiration or drainage is required only in about 14% of patients. Large ulcerated lesions of the breast or multiple discharging sinuses which do not respond to antitubercular therapy, simple mastectomy is surgical procedure of choice although rarely done these days. Similarly, axillary dissection is reserved for large ulcerated lymph nodes which do not respond to antitubercular therapy [25].

CONCLUSION

Tuberculous breast is a rare clinical entity in extrapolmonary form of tuberculosis. Clinical presentation with painful breast lump with formation of ulcers and sinuses is most common. This occurs mostly in pregnant and lactating females. The breast lump masquerading as carcinoma breast or recurrent breast abscess; after clinical assessment high index of suspicion for diagnosis of tuberculous breast be kept in mind. Radiological imaging like mammography and fine needle aspiration may be inconclusive. A biopsy from the margin of sinus may be conclusive by demonstration of epithelioid granuloma and caseation. Acid fast bacilli may be demonstrated. Antitubercular therapy using four drug regimen for 9 months is very effective in most of patients. Surgical intervention in form of aspiration and drainage of abscess may be required in selected patients.

REFERENCES


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Conflict of Interest
Author declares no conflict of interest.

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