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Bacilli in the breast

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ABSTRACT

Background: Breast tuberculosis is uncommon even in countries where the incidence of pulmonary and extra pulmonary tuberculosis is high. The incidence of breast tuberculosis is less than 1% of the total breast pathologies in the world.
Methods: This is a prospective study wherein all cases of breast tuberculosis with age above 18 years with only primary breast tuberculosis in both sexes. A total of 40 patients were diagnosed with breast tuberculosis. Most of the patients were treated as outpatient. All the patients were subjected to Imaging (Ultrasonagram or Mammogram) and fine needle aspiration cytology (FNAC). When FNAC was in conclusive, core needle biopsy was done. When none of the investigations were contributive, patient was subjected to excision biopsy. The tissue was sent for histopatho logical examination, gene xpert, AFB culture and sensitivity.
Results: Diagnosis of breast tuberculosis was confirmed in all the 40 patients either with fine needle aspiration cytology or biopsy. All patients were with anti-tuberculous treatment as per the Revised National Tuberculosis Control Program of India (RNTCP). All patients responded well and had complete recovery. Overall prognosis of breast tuberculosis was good.
Conclusions: Breast tuberculosis is often mistaken for carcinoma breast. Clinical examination often fails to differentiate carcinoma breast from tuberculosis and a high index of suspicion is necessary. Mammography is not of much help as the findings in carcinoma in advanced stage are similar to that of tubercular lesion.

Keywords: Breast tuberculosis, Extra pulmonary tuberculosis, Granulomatous mastitis

INTRODUCTION

Extra pulmonary tuberculosis occurring in the breast is extremely rare. Breast tuberculosis is uncommon even in countries where the incidence of pulmonary and extra pulmonary tuberculosis is high. The incidence of breast tuberculosis is less than 1% of the total breast pathologies in the world.[1] In the absence of well-defined clinical features, the true nature of the disease remains obscure and it is often mistaken for carcinoma or pyogenic breast abscess. Breast tuberculosis also presents as a diagnostic problem on radiological and microbiological investigations and thus high index of suspicion acquires an important position. Caseating epitheloid cell granulomas in the tissue samples are diagnostic of tuberculosis.[2,3] The disease is eminently curable with the modern anti-tubercular chemotherapeutic drugs with surgery playing a role in the background only.

METHODS

This is a prospective study wherein all cases of breast tuberculosis with age above 18 years with only primary breast tuberculosis in both sexes were taken between the year of 2015 to 2017 at Sri Ramachandra Medical College. Secondary breast tuberculosis with primary focus elsewhere was excluded. A total of 40 patients were diagnosed with breast tuberculosis. There was a varied

presentation of breast lump, mastitis, mastalgia, axillary lump and breast abscess.

Most of the patients were treated as outpatient. All the patients were subjected to Imaging (Ultrasonagram or Mammogram) and fine needle aspiration cytology (FNAC). When FNAC was inconclusive, core needle biopsy was done. Mantoux test was done. Chest x-ray was done to rule out pulmonary tuberculosis. When none of the investigations were contributive, patient was subjected to excision biopsy. The tissue was sent for histopathological examination, gene xpert, AFB culture and sensitivity.

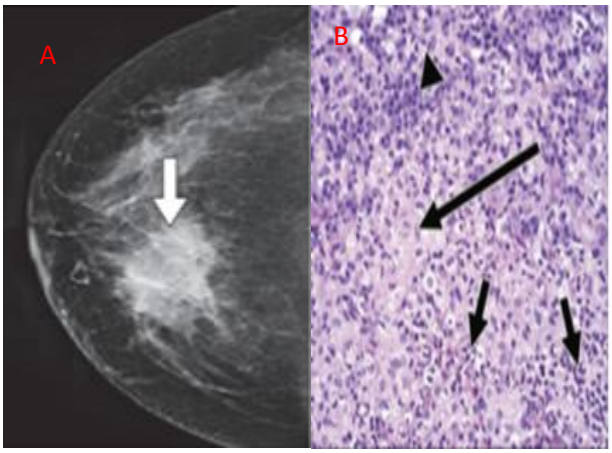

Figure 1: A) Mammogram showing an ill-defined mass (arrow), B) Histopathological picture showing granulomatous inflammation with epithelioid histiocytes with neutrophils and lymphocytes .

RESULTS

39 patients were female and one patient was male. Breast lump was the commonest presentation (55%). Other presentations Mastitis (20%), Mastalgia (15%) with vague lump, Axillary swelling (5%) and breast abscess (5%). Most of the patients were in the age group to 30 to 40 years. The mean age was 35 years. All the patients were subjected to Imaging ultrasonogram if less than 35 years and mammogram if more than 35 years. All patients were subjected to FNAC and for patients presenting with vague lump ultrasonagram guided FNAC was done. FNAC was conclusive of tuberculous origin with presence of epitheloid cell granulomas and necrosis in 12 patients. For remaining patients ultrasonasound guided core needle biopsy was done. The histopathology report was confirmatory of tuberculous breast lesion with presence of epitheloid cell granulomas and caseous necrosis in 10 patients. Excison Biopsy of the breast lump (Axillary node in 1 patient) was done for 16 patients. The histopathology report was confirmatory of tuberculous breast lesion. Tissue was also sent for GeneXpert and culture (mycobacterial growth indicator tube-MGIT).

For the breast abscess patient, Non-dependant aspiration was done for one patient and sent for cytology and culture which was confirmatory of tuberculosis. For the other breast abscess patient non-dependent open drainage was done and tissue was sent for histopathological examination which was confirmatory of tuberculosis.

Table 1: Presentations.

Presentations	No. of Patients	%
Breast lump	22	55
Mastitis - focal	8	20
Mastalgia with vague lump	6	15
Axillary lump	2	5
Breast abscess	2	5

Table 2: Diagnostic methods.

Investigations	No of patients	
FNAC	40	Positive 12 Inconclusive 28
Core Needle Biopsy	12	All were USG - guided
Excision Biopsy	16	Breast lump 15 Axillary node 1

All patients were started on anti-tuberculous therapy (ATT) as per the Revised National Tuberculosis Control Program of India (RNTCP) guidelines for extra pulmonary tuberculosis. As per RNTCP guidelines Category III regimen (2HRZ/4HR) for less severe forms of extra pulmonary tuberculosis and Category I (2EHRZ/4HR) for more severe forms of extra pulmonary tuberculosis. The first line of drugs being Ethambutol 1200mg (E), Streptomycin 750mg (S), Rifampicin 450mg (R), Isoniazid 600mg (H) and Pyrazinamide 1500mg (Z). The drugs are administered thrice weekly. The overall prognosis is good. For all patient's lesion resolved completely.

DISCUSSION

The World Health Organization (WHO) estimated that there were 8.7 million cases of tuberculosis in the world in 2011, a rate of 125 cases per 100,000 people. Breast tuberculosis was first defined by Sir Astley Cooper in 1829 who called it 'scrofulous swelling of the bosom' is a rare form of extrapulmonary tuberculosis.[4] Breast tuberculosis is a very rare disease and constitutes only 0.025-1.04% of all breast diseases. Its prevalence has been estimated to be 0.1% of breast lesions examined histologically, and it constitutes about 3-4.5% of surgically-treated breast diseases in developing countries.[5] The breast may become infected in a variety of ways e.g., (i) haematogenous, (ii) lymphatic, (iii) spread from contiguous structures, (iv) direct inoculation, and (v) ductal infection. Despite the high prevalence of tuberculosis, mammary cells offer great resistance to the survival and multiplication of mycobacterium tuberculosis.

Breast tuberculosis was first classified into five different types by Mckeown and Wilkinson: 1) Nodular tubercular mastitis, 2) Disseminated or confluent tubercular mastitis, 3) Sclerosing tubercular mastitis, 4) Tuberculous mastitis obliterans, and 5) Acute miliary tubercular mastitis. Later on, breast tuberculosis was reclassified as nodular, disseminated and abscess varieties. The sclerosing type, mastitis obliterans and miliary variety are of historical importance only.[6,7]

Diagnosis of breast tuberculosis. Required high index of suspicion on clinical examination. Pathological or microbiological examination confirms the diagnosis of breast tuberculosis is suspected lesions. Breast tuberculosis can be diagnosed on FNAC when both epitheloid cell granulomas and necrosis are present. Histopathology of the specimen-Histological findings include epitheloid cell granulomas with caseous necrosis in the specimen. Culture methods like BACTEC, mycobacterial growth indicator tube (MGIT) helps in rapid detection of early mycobacterial growth (5-14 days as compared to 2-8 weeks with conventional methods). The mammogram in breast tuberculosis is of limited value as the findings are often indistinguishable from carcinoma breast. The mammographic picture of nodular tuberculosis is usually of a dense round area with indistinct margins seen without the classic halo sign found in fibroadenoma. The mammographic size of the tuberculous lesion correlates well with its clinical size, unlike that of a carcinoma. Disseminated variety mimics inflammatory carcinoma and the radiographs show dense breast with thickened skin. Sclerosing tubercular mastitis reveals a homogenous dense mass with fibrous septa and nipple retraction.[8-10]. Treatment: The treatment of breast tuberculosis consists of anti – tubercular chemotherapy (ATT) and surgery with specific indications.[11]

CONCLUSION

Breast tuberculosis is often mistaken for carcinoma breast. Clinical examination often fails to differentiate carcinoma breast from tuberculosis and a high index of suspicion is necessary. Factors predictive but not diagnostic of breast tuberculosis include constitutional symptoms, mobile breast lump, multiple sinuses, and an intact nipple and areola in young, multiparous or lactating females. Nipple retraction, peau d'orange, and involvement of axillary lymph nodes are more common in malignancy than in tuberculosis. Mammography is not of much help as the findings in carcinoma in advanced stage are similar to that of tubercular lesion.

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