

**Case Report**

## **A RARE CASE OF BREAST TUBERCULOSIS - REPORT AND LITERATURE REVIEW**

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### **ABSTRACT**

Isolated Tuberculosis of Breast is uncommon, even in developing countries where pulmonary and other extrapulmonary manifestations are endemic. The significance of Breast tuberculosis is due to rare occurrence and mistaken identity with breast cancer and pyogenic breast abscess. Breast Tuberculosis has no defined clinical features. Radiological imaging is not diagnostic. The main sign and symptoms of this patient included a painful tender lump in the breast. The diagnosis was confirmed by Fine Needle Aspiration Cytology. Anti Tubercular Treatment was the therapeutic main stay. Surgical intervention was reserved for aspiration of cold abscess and excision of residual sinuses and masses.

### **INTRODUCTION**

Tuberculosis of Breast is seen rarely. Over the years since the first description of tubercular mastitis in 1929, the incidence, clinical presentation, diagnostic and treatment methodology of Breast tuberculosis has gradually changed. Breast Tuberculosis is rare in western countries. Incidence being less than 0.1% of the Breast lesions examined histologically. But, with global spread of AIDS, mammary tuberculosis may no longer be uncommon in developed world.<sup>1</sup> The incidence of Tuberculosis in general is still quite high in India and so is expected of the breast tuberculosis. But the disease is often overlooked.<sup>1</sup> Extra-pulmonary TB can be effectively treated with short-course chemotherapy, often with fewer drugs than in the case of pulmonary TB. Except for meningitis, all other forms of extra-pulmonary TB can be successfully treated with 6-month regimens.

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### **CASE REPORT**

A 23 year old woman presented with complaints of lump in her right breast which appeared since one month and gradually increased in size. Her medical history was unremarkable. On inspection there was no visible discrete swelling in the right breast and no erythema was present. Physical examination revealed a lump of 4x2 cms, firm with restricted mobility in the upper outer quadrant. It was tender. Nipple retraction and nipple discharge was not seen. On examination there was no axillary lymphadenopathy. A diagnosis of pyogenic abscess was made initially and was treated with empirical with Amoxicillin with clavulanic acid for 7 days. Mammogram was not done initially as it was very painful mass. After one week, patient reported with FNAC report confirming diagnosis of tuberculosis of breast. She was started on a course of Antitubercular Therapy.

On the follow up clinical examination after two months of treatment the lump in the breast had regressed in size. The diagnosis of Tuberculosis of Breast was based on strong suspicion of tuberculosis on both clinical and histological grounds, together with a prompt response to anti-tuberculous treatment.

She was continued with Anti-tubercular Therapy for remaining 4 months on category 1 regimen and reviewed in OPD regularly

**Laboratory** findings were within normal limits except leucocytosis. Hb%-11 gms/dl, Total WBC Count-11,900cells/cmm, Differential count-Neutrophils-79%, Lymphocytes - 18%, Eosinophils - 02% Monocytes - 01%, Basophils - 00%, ESR - 62mm/hr.

Chest x ray showed no evidence of active or healed tuberculous lesion in the lungs.

**Mantoux Test** – after 48 hrs Induration-present, 20x28mm positive **ZN stain of the smear** was negative and **Acid fast bacilli** (AFB) culture was also negative. **Gram Stain** of the material did not reveal any micro-organisms, aerobic and anaerobic culture of the caseous material did not yield any pyogenic micro-organisms after 10 days incubation.

**Serology:** HIV- Negative, HBsAg - Negative

**Ultrasonography** shows multiple ill-defined hypo echoic areas noted in the outer periaareolar area measuring around 30x16mm. The lesion involved the subcutaneous area and fatty tissues. No calcifications seen. No obvious increase in vascularity noted. No obvious clear collection noted.

Rest of the right breast parenchyma appeared normal. Axillary tail appeared normal. No obvious axillary lymph nodes seen. Left Breast: Left breast parenchyma appeared normal. Final impression: Features are suggestive of focal necrotic changes in right breast.

**Fine needle aspiration cytology** revealed epitheloid cells granulomata, with caseous necrosis. Impression– cold abscess.

## DISCUSSION

First case of Tuberculosis Breast was first described by Sir Asley Cooper in 1829 as scrufulous swelling of the bosom.<sup>1</sup> Tuberculous involvement of the breast is rare and mostly from extramammary tuberculous

lesion. Since its first description in 1829<sup>3</sup>, over 700 cases have been reported.<sup>5</sup>

Breast tuberculosis is a rare disease although its incidence ranges between 0.1% to 0.52%, it increases in endemic regions.<sup>2</sup> Tuberculosis of breast is classified as primary if there is no other organ involved and secondary when a source outside breast can be identified. The mode of spread to the breast may be haematogenous, lymphatic, direct extension from chest wall (pleura or ribs) or the axillary nodes and by inoculation of broken skin or duct opening by infected sputum.<sup>3</sup> In our case breast tuberculosis was considered to be the primary form because another tuberculosis infection focus was not detected by physical examination or radiological examination and there was no prior history. However, Vassilakos stated that primary breast tuberculosis was probably quite rare and was diagnosed because the clinician was unable to detect the true focus of the disease. Later on, breast tuberculosis was considered invariably secondary to a lesion elsewhere in the body.

Tuberculosis of breast commonly affects women in their reproductive age group between 21yrs- 30yrs, which is also seen in this case. This may be because the female breast undergoes frequent changes during the period of activity and is more liable to trauma and infection.<sup>1</sup>

Breast tuberculosis most commonly presents as a lump in the central or upper outer quadrant of the breast. It is probably due to frequent extension of tuberculosis from axillary nodes to the breast. Multiple lumps are less frequent.<sup>1</sup> According to the Cooper's theory, communication between the axillary glands and the breast results in secondary involvement of the breast by retrograde lymphatic extension. Supporting this hypothesis was the fact that axillary node involvement was shown to occur in 50 to 75 per cent of cases of tubercular mastitis<sup>1</sup>. In our case ipsilateral axillary nodal involvement was not present on clinical and radiological evaluation.

It can also present as breast abscess, especially in young women. In a review of benign breast diseases in India, Shukla and Kumar found Tubercular breast

abscess to be a common presentation of breast tuberculosis.<sup>1</sup>

Breast Tuberculosis is most misdiagnosed and patient is often subjected to numerous investigations before definitive diagnosis is made.

**Mantoux test** usually is positive in adults in endemic area for tuberculosis. It is of no diagnostic value for breast tuberculosis. **Chest x ray** may show evidence of active or healed tubercular lesion of lungs, in few cases may reveal clustered calcification in axilla suggesting the possibility of lymph node tuberculosis.<sup>1</sup>

**Mammogram** in breast tuberculosis is of limited value. However Breast tuberculosis is found in young women of 20-40years of age, dense breast makes interpretation of mammogram difficult. Moreover this facility may not be available in less developed world where disease is common. **Ultrasonography** of breast is cheap, easily accessible and helps in characterizing the lesion better (especially cystic from solid lesion) without exposure of radiation.<sup>1</sup>

**C T scan** seldom adds to diagnostic yield other than in defining the involvement of thoracic wall MRI of Breast again finding are nonspecific. **Fine needle aspiration cytology** from breast lesion continues to remain an important diagnostic tool of Breast tuberculosis. Approximately 73% cases of Breast tuberculosis can be diagnosed on FNAC when both epitheloid cell granuloma and necrosis are present. Biopsy of the abscess wall and demonstration of characteristic histological features or culture are essential to confirm the diagnosis of Breast tuberculosis.

Though **Mycobacterial culture** remains the gold standard for diagnosis of tuberculosis, the time required and frequent negative results in paucibaccillary specimens are important limitations. Moreover, culture is not always helpful in the diagnosis of Breast tuberculosis. **Polymerase chain reaction** mostly used as a tool to distinguish tubercular mastitis from other granulomatous mastitis. PCR is by no means absolute in diagnosing tubercular infection and false negative reports are still a possibilities.<sup>1</sup>

**Histopathology of specimen** finding include epitheloid cell granuloma with caseous necrosis in

the specimen. Breast tuberculosis and carcinoma occasionally co-exist hence high index of suspicion is necessary.<sup>1</sup>

ATT is the backbone of treatment of Breast tuberculosis. The treatment of breast tuberculosis consists of anti-tubercular chemotherapy (ATT) and surgery with specific indications. No specific guidelines are available for the chemotherapy of breast tuberculosis *per se*. The regimen generally followed in the treatment of breast tuberculosis is similar to that used in pulmonary tuberculosis.



A picture of breast after completion of ATT

The Revised National Tuberculosis Control Programme (RNTCP) of India recommends category III regimen (2HRZ/4HR) for less serious forms of extra-pulmonary tuberculosis. The World Health Organization has recommended a 4-drug intensive phase (2EHRZ) in category III regimen as well.<sup>1</sup>

Mutilating surgery like simple mastectomy for breast tuberculosis was in vogue in the past with the belief that the lesion tends to persist and reappear with Conservative treatment even with chemotherapy.<sup>7</sup> Residual lump following ATT may require surgical removal. Simple mastectomy with or without axillary clearance is rarely required.<sup>1</sup>

## CONCLUSION

Extra-pulmonary tuberculosis occurring in the breast is extremely rare. It warrants a high index of suspicion on clinical examination and pathological or Microbiological confirmation of all suspected lesion. Breast tuberculosis is uncommon even in countries where the incidence of pulmonary and extra-pulmonary tuberculosis is high. In the absence

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of well-defined clinical features, the true nature of the disease remains obscure and it is often mistaken for carcinoma or pyogenic breast abscess. It also presents a diagnostic problem on radiological and microbiological investigations and thus high index of suspicion acquires an important position. The disease is eminently curable with the modern anti-tubercular chemotherapeutic drugs with surgery playing a role in the background only.

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