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## CASE STUDY

### A CASE REPORT OF TUBERCULOUS MASTITIS

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#### ABSTRACT

Tuberculosis is an infectious disease caused by acid fast bacilli *Mycobacterium Tuberculosis*. It primarily affects the lungs and causes pulmonary tuberculosis, but can affect any organ of the body and is then called secondary tuberculosis. Tuberculosis is the most widespread and persistent human infection in the world. The infection can involve any organ and mimic other illnesses, hence called 'the great mimicker'. The incidence of tubercular mastitis although decreasing in the West, could show resurgence with the global pandemic of AIDS. Tuberculous mastitis is a rare clinical entity and usually affects women from the Indian sub-continent and Africa. It often mimics breast carcinoma and pyogenic breast abscess clinically and radiologically, may both co-exist. Fine needle aspiration cytology (FNAC) / biopsy are essential for diagnosis and tuberculosis culture when positive may be very useful to guide antimicrobial therapy. Antitubercular drugs in combination with aspiration or surgical drainage are usually associated with an excellent outcome.

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## INTRODUCTION

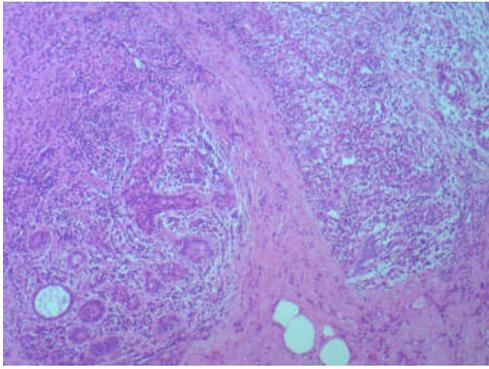
A 24 year old married female presented with swelling in the right breast since 2-3 days associated with throbbing pain. No positive history of constitutional symptoms. No other medical disorder or surgical history. On examination, there was a solitary lump in the upper outer quadrant of the right breast. Tenderness was present, the swelling was well defined and firm. Nipple and areola was not involved. Axillary and cervical lymph nodes, including supraclavicular lymph nodes, were not enlarged. Her hemogram revealed leucocytosis and neutrophilia. ESR at the end of one hour was 94. Chest radiograph was normal. Ultrasound findings were suggestive of a large breast abscess with extension into the axillary tail. Based on these findings, the patient was taken up for surgery where drainage of the abscess was done. The pus drained was sent for Gram stain and culture and AFB stain and culture. Specimen was also sent for histopathological examination. Secondary suturing was done 7 days later and a corrugated drainage tube was left in situ. However due to poor wound healing and continuous excessive discharge from the wound, patient underwent incision & drainage.

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Gram stain and culture showed no presence of growth. Z-N staining also did not show presence of acid fast bacilli. Culture reports for the same are awaited. Her histopathologic examination showed multiple caseating and non caseating granulomas in breast stroma. Inflammatory cells, neutrophils and plasma cells were also seen suggestive of tuberculous mastitis (Figure 1). She was started on Anti-Koch's Treatment, Category 1. Following 3 weeks of treatment, the wound is non-discharging and is showing good signs of healing.

## DISCUSSION

The first case of mammary tuberculosis was recorded by Sir Astley Cooper in 1829 who called it 'scrofulous swelling of the bosom' (Cooper, 1829) Tuberculosis of the mammary gland is a rare disorder often mistaken for other benign and malignant lesions of the breast. In India, the incidence of tuberculous mastitis has been reported to be between 1 - 4.5%. (Khanna et al., 2002; Aggarwal and Bhargava, 2008) Tuberculous mastitis is more commonly seen in females of reproductive age group, however, especially during the lactation period, when they are more susceptible since the lactating breast is more vascular and predisposed to trauma. (Tewari and Shukla, 2005; Banerjee, 1987) It is uncommon in prepubescent females and elderly women.



**Figure 1. Histopathological slides showing caseating granulomas**

Breast tuberculosis is rare in males (Jaideep *et al.*, 1997) and is reported in about 4 per cent of cases (Morgan, 1931). Bilateral involvement is uncommon (3%) (Banerjee, 1987). The most common symptom is a lump in the breast. Multiple lumps are less frequent. The classical presentation with multiple sinuses, ulcers, matted nodes and a breast mass is unfortunately less common, making clinical diagnosis difficult at times. Such a presentation is seen in less than 50% of all cases. Other uncommon presentations include; a typical undermined tuberculous ulcer, purulent discharge from the nipple or with a fluctuant swelling which, if inadvertently incised, produces a discharging ulcer. (Banerjee, 1987; Al Soub and Chacko, 1996)

**Table 1. Classification of breast tuberculosis**

Old classification by Mckeown and Wilkinson	New classification
❖ Nodular tubercular mastitis	❖ Nodulocaseous tubercular mastitis
❖ Disseminated/ confluent tubercular mastitis	❖ Disseminated/confluent tubercular mastitis
❖ Sclerosing tubercular mastitis	❖ Tubercular breast abscess
❖ Tuberculous mastitis obliterans	
❖ Acute miliary tubercular mastitis	

The lump in the breast in tuberculous mastitis is usually ill-defined, irregular, occasionally hard and indistinguishable from a carcinoma. Pain in the lesion is present more frequently than a carcinoma, often being a dull constant, nondescript ache. Also in tuberculosis, the breast is not fixed, freely mobile and the skin can be pinched above the lump. Mammography is of limited use since the findings are often indistinguishable from a malignancy (Al Soub and Chacko, 1996). Breast tuberculosis is always present secondary to a primary focus, the spread usually being by haematogenous route and direct spread from contiguous structures (Banerjee, 1987). Breast tuberculosis was first classified into five different types by Mckeown and Wilkinson. (Mckeown and Wilkinson, 1952) However with the changing patterns of presentation of cases the new classification was devised. (Table 1) Breast tuberculosis is mostly misdiagnosed and the patient is often subjected to numerous investigations before a definitive diagnosis is made. It warrants a high index of suspicion on clinical examination and pathological or microbiological confirmation of all suspected lesions.

#### The following can aid in the diagnosis

i. Radiological investigations:

A chest X-ray may show evidence of active or healed lesion of tuberculosis in a few cases (Mukerjee *et al.*, 1999)

Ultrasonography of the breast is cheap, easily accessible and helps in characterizing the lesion better (especially cystic from solid lesions) without exposure to radiation<sup>14</sup>

ii. Fine Needle Aspiration Cytology:

In tubercular breast abscess, FNAC may be inconclusive and the FNA picture may be dominated by acute inflammatory exudates. AFB negative breast abscess that fail to heal despite adequate drainage and antibiotic therapy, and those with persistent discharging sinuses should raise suspicion of underlying tuberculosis. Biopsy of the abscess wall and demonstration of characteristic histological features or culture are essential to confirm the diagnosis of breast tuberculosis (Kakkar *et al.*, 2000; Sharma *et al.*, 1991) Ultrasound-guided fine needle aspiration decreases the failure rate and obviates the need for multiple punctures.

iii. Culture:

Though mycobacterial culture remains the gold standard for diagnosis of tuberculosis, the time required and frequent negative results (Kalac *et al.*, 2002) in paucibacillary specimens are important limitations.

iv. Histopathology of the specimen:

Histological findings include epithelioid cell granulomas with caseous necrosis in the specimen. Core needle biopsy yields a good sample often yielding a positive result. However, open biopsy (incision or excision) of breast lump, ulcer, sinus or from the wall of a suspected tubercular breast abscess cavity almost always confirms breast tuberculosis. (Kakkar *et al.*, 2000)

Anti-tuberculous treatment is the main line of therapy accompanied by mild surgical intervention.

#### Conclusion

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. 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. It also presents a diagnostic problem on radiological and microbiological investigations and thus high index of suspicion acquires an important position. Caseating epithelioid cell granulomas in the tissue samples are diagnostic of tuberculosis. The disease is eminently curable with the modern antitubercular chemotherapeutic drugs with surgery playing a role in the background only.

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