



**PRIMARY TUBERCULAR MASTITIS MIMICKING CARCINOMA BREAST-A CASE REPORT
WITH REVIEW OF LITERATURE**

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ABSTRACT

Primary breast tuberculosis is an uncommon form of entity. A 60 year-old female, presented with a lump in lower outer quadrant of breast. She had also a history of intermittent yellowish discharge from nipple. No co-morbid condition or any family history. Primary breast tuberculosis was diagnosed on fine needle aspiration cytology wherein ZN stain for acid fast bacilli was positive. The patient received antitubercular drugs and at one month follow up the swelling had resolved and the patient was asymptomatic. Breast tuberculosis is a rare disease with non-specific clinical, radiological, and histological findings. Misdiagnosis is common as biopsy specimens are pauci-bacillary and investigations such as microscopy and culture are frequently negative.

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INTRODUCTION

The prevalence of extra-pulmonary tuberculosis in India accounts for 8.3% to 13.1%.¹ Primary Breast tuberculosis is a rare form of extra-pulmonary tuberculosis (EPTB) with an incidence of less than 0.1% and 4% of all breast lesions in western and Tuberculosis (TB) endemic countries respectively.^{2,3,4,5} This disease is often missed and diagnosed as carcinoma or abscess of the breast.¹ The other common sites and incidence of EPTB are lymph glands(35%), genito-urinary tract(46%), pleural membrane (3-25%), meninges(7-12%), bones and joints (1-3%), bowel and/or peritoneum(10-12%) and skin(2%).⁶ Breast TB is mainly classified as primary or secondary. The primary form is less common in comparison to secondary (17.4% to 62.5%). The diagnosis is difficult because of nonspecific clinical and radiological findings.⁷ Breast TB should be considered as a differential diagnosis in cases of breast cancer since the disease can usually be treated conservatively with anti-tubercular drugs. We report a rare case of primary breast tuberculosis mimicking as carcinoma that showed a good clinical response with anti-tubercular treatment (ATT).

Case Summary

A sixty yearold multiparous postmenopausal female presented to the Department of Radiation Oncology with a palpable lump in right breast which had been gradually increasing in size for last one month.

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It was associated with non radiating intermittent mild pain relieved with oral paracetamol. She had also a history of intermittent yellowish discharge from nipple. There was no history of decreased appetite, weight loss, fever, cough, breathlessness or any bone pain. No co-morbid conditions (Diabetes Mellitus and Hypertension) or any family history (breast or ovarian cancer) was present.

On clinical examination, a palpable lump in the lower-outer quadrant of the right breast, measuring 4x3 cm, firm, not fixed to skin or underlying structure with normal nipple-areola complex was found. There was no peripheral lymphadenopathy especially in axillary region.

The blood counts and chest radiograph were within normal limits. Initial Mammography was reported as BIRADS-Category V lesion which suggests >95% chances of malignancy. FNAC (Fine needle aspiration cytology) of breast lump showed evidence of granulomatous mastitis with smear cytology positive for acid fast bacilli, confirming the diagnosis of tubercular mastitis.

In view of negative FNAC report for malignancy, the case was reviewed in tumor board and opinion was seek from two Radiologists. The reviewed report showed diffusely increased density of breast parenchyma and mild thickening of skin and subcutaneous tissue. No obvious mass/nodule, architectural distortion or micro calcification was seen. On complementary ultrasonography, there was an increased echogenicity in lower outer quadrant of right breast in the region of palpable abnormality. However no definite mass/cyst or collection was noted on ultrasound. The Mammography report was revised by

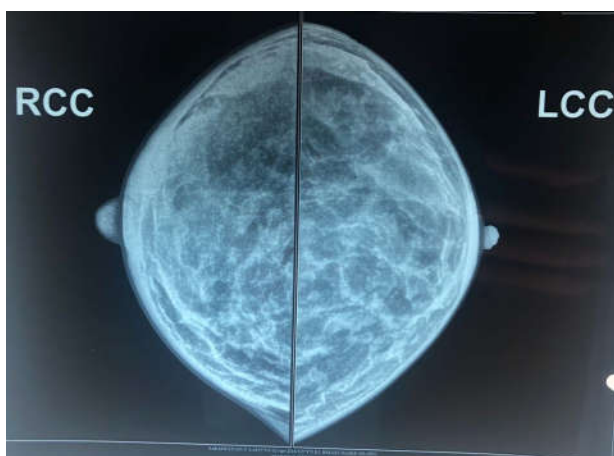
Radiologists as BIRADS category III/IVa, in view of above findings.

The patient was finally diagnosed as a case of primary TB. She was planned ATT (rifampicin 400 mg, isoniazid 200mg, ethambutol 600mg and pyrazinamide 1200mg) in consultation with pulmonary medicine. The lump in the right breast showed a dramatic clinical response within one month of ATT.

DISCUSSION

Breast tuberculosis is a rare form of EPTB.³ Breast tuberculosis is more commonly seen in women of reproductive age group, between 21-30 years, especially during the lactation period with presenting symptoms varying from few months to several years.⁸⁻¹⁰ This may be because in pregnant and lactating women, the breast is more vascular with dilated ducts, predisposed to trauma making it more susceptible to tubercular infection.¹¹ It is rare in prepubescent and elderly females.¹² Our patient is a sixty-year-old lady with duration of symptoms less than one month which is an uncommon clinical presentation.

probably occurs via infection through skin abrasions or through openings of the lactiferous ducts at the nipple. On the contrary the secondary variety is more common and develops by either direct extension, retrograde lymphatic dissemination from the affected axillary and cervical lymph nodes resulting in presentation of lump in upper outer or central quadrant.¹³

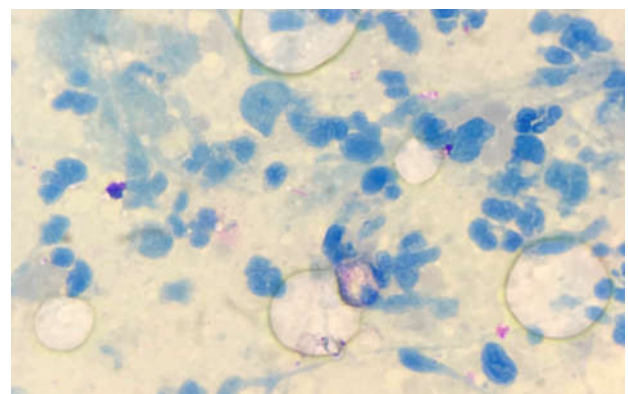


Mammogram showing diffusely increased density of breast parenchyma and mild thickening of skin and subcutaneous tissue.

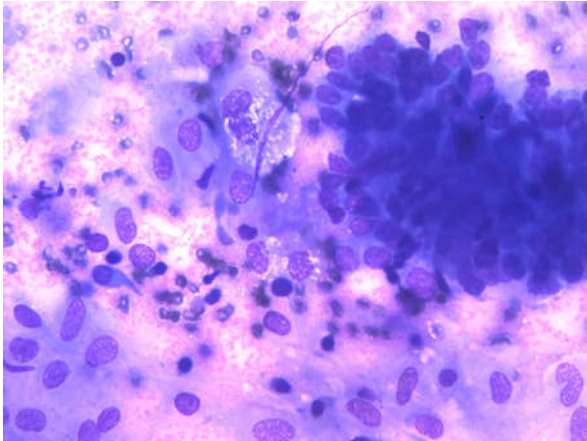
Breast tuberculosis commonly presents as a lump in upper outer or central quadrant of breast due to frequent extension of tuberculosis from axillary nodes to the breast and is usually painful. In our patient, the lump was present in the lower outer quadrant. The atypical presentation for the quadrant may be related to the etiology of primary breast TB which states that it



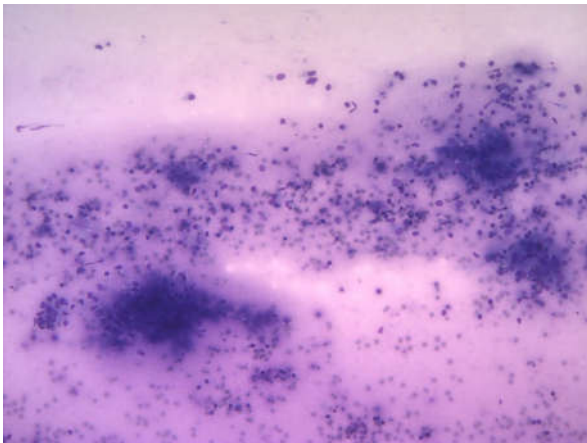
Picture showing palpable lump in the lower-outer quadrant of the right breast, measuring 4x3 cm, firm, not fixed to skin or underlying structure with normal nipple-areola complex Fine needle aspiration cytology from right breast lump



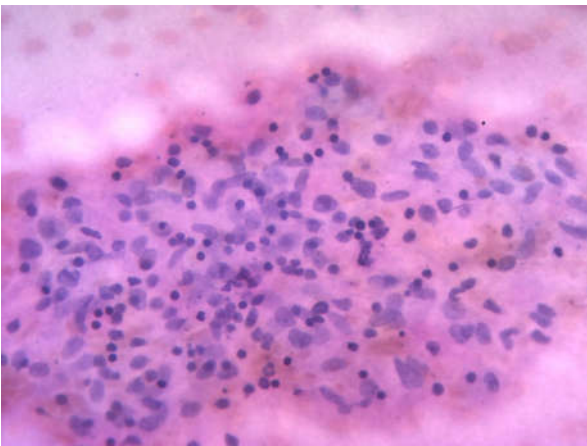
ZN stained smear: Positive for M. tuberculosis



Cluster of ductal epithelial cells with epithelioid cells: high power



Smears reveal numerous epithelioid granulomas on necroinflammatory background. MGG stain . low power



Epithelioid cell granuloma. Pap stain. High power

The primary form of the disease is rare. In the present case, no focus of tuberculosis anywhere else in the body was detected on clinical (no history of decrease appetite, weight loss, fever, cough, breathlessness and bone pain), microbiological (sputum AFB -ve) and radiological evaluation (chest X ray-NAD). Thus the diagnosis of primary breast tuberculosis was confirmed.

Breast tuberculosis was initially classified into five different types by Mckeown *et al* (nodular, disseminated, sclerosing, obliterans and military).¹¹ There are hardly any reports in the sclerosing, obliterans and miliary type of breast tuberculosis for last two decades¹⁴. Thus, presently, it has been reclassified

as nodular, disseminated and abscess types by Tewari *et al*.⁹ The nodular form is the most common variety and usually presents as a localized slowly growing mass that progresses to involve skin, may ulcerate, and can form sinuses. Histologically, this form is characterized by extensive caseation and little fibrosis.^{15,16} Our patient revealed the nodular type, as extensive caseation and little fibrosis was seen cytopathologically.

Diagnosis of breast tuberculosis requires high degree of clinical suspicion followed by pathological or microbiological confirmation. Mammography or ultrasonography are not reliable in distinguishing breast tuberculosis from carcinoma because of variable patterns of presentation of such inflammatory lesions like coarse stromal texture with or without an ill-defined breast mass and skin thickening which all are non-specific enough to aid in diagnosis.¹⁷ This unreliability was seen in the present case where the mammography was revised from BIRADS category V to Category III/Iva. The Mantoux test was not performed as it is usually positive in endemic area for tuberculosis like India and is of no use for its diagnosis.¹⁸

FNAC from breast lesion is an important diagnostic tool.³ About three-fourth of cases of breast tuberculosis can be diagnosed on FNAC with both appearance of epithelioid cell granulomas and necrosis³. The demonstration of acid-fast bacilli (AFB) on FNAC is not mandatory to confirm the diagnosis, since for positive AFB smear; their number must be 10^4 - 10^5 /ml of material.¹⁹ In a country like India, the diagnosis of Idiopathic granulomatous mastitis should be made with caution, even in the absence of AFB and sufficient trial of anti-tuberculosis treatment should be given before considering it.²⁰ In our case, this characteristic Fine-needle aspiration cytology picture of epithelioid granulomas with positive AFB smear was seen. Other type of biopsy such as core needle or surgical biopsy can be of higher accuracy value in diagnosis.²¹ The biopsy was not done in present case since cytopathological report and AFB were positive.

The gold standard for the diagnosis of TB of the breast is detection of *M. tuberculosis* by Ziehl-Neelsen staining or by culture, but culture of *M. tuberculosis* has limitations due to the delay of 6-8 weeks in obtaining the final result and the possibility of false-negative results in paucibacillary samples are important limitation²². Polymerase chain reaction in the diagnosis of breast tuberculosis is by no means absolute because of false negative reports.²³ In view of possibly delayed culture for TB and having a positive cytology and AFB report, the culture for *M. Tuberculosis* was deferred.

The patient was started on Anti-tubercular treatment (ATT) in consultation with Pulmonary Medicine. The consideration of diagnosis of primary breast TB was confirmed as the breast lump almost disappeared after one month of ATT.

CONCLUSION

Primary breast tuberculosis is a rare entity. It should be considered in differential diagnosis of breast cancer as the management and prognosis is far better. Greater awareness of this uncommon entity of a common disease along with early institution of medical management with ATT may avoid unnecessary surgery to the patient.

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