

Primary Breast Tuberculosis mimicking malignancy

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Abstract

Breast tuberculosis is an uncommon form of entity, usually presenting as abscess or lump rarely it presents as hard lump mimicking malignancy. A 40-year-old female, presented with a lump in the right breast in sub areolar region. Clinically lump was hard, more in favour of malignancy. There was no axillary lymphadenopathy. She was having off and on fever without any other complaints. There was no history of tuberculosis in past. There was no history of Koch's contact. Routine investigations were normal. X-ray chest was normal. Mammography was s/o BIRAD IV lesion i.e. suspicious pathology. Primary breast tuberculosis was diagnosed on trucut biopsy. The patient received antitubercular drugs and at 1 month follow up the swelling had decrease in size but not resolved hence excisional biopsy done. Histopathological examination suggestive of breast tuberculosis. 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. Tuberculosis should be included in the differential diagnosis of breast lesions, like breast carcinoma, persistent breast abscess and infectious patterns with fistulizations, especially for patients from high risk populations and endemic regions.

Keywords: Abscess, Breast, Extra-pulmonary, malignancy, Lump, Tuberculosis.

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INTRODUCTION

Tuberculosis mostly affects the lungs as it is an airborne infectious disease, but any organ can be affected as a result of hematogenous spread. It has been suggested that some organs and tissues like the mammary gland tissue and spleen offer resistance to the survival and multiplication of tuberculosis bacillus.¹ Breast TB can mimic breast carcinoma or breast abscess, clinically and radiologically. Concomitant axillary lymph nodes were found in one-third of the patients with breast TB.² Breast tuberculosis (TB) is classified as either primary or secondary TB. In 1829, Sir Astley Cooper described TB mastitis as "scrofulous swelling" in the bosom of young women.³ It typically affects young lactating multiparous

women and can present either as an abscess or as a painless breast mass. Primary breast TB is a rare form of extra-pulmonary TB. Although over one billion people suffer from TB worldwide, mammary TB is a relatively rare condition.⁴ Its prevalence has been estimated to be 0.1% of breast lesions examined histologically.⁵ Moreover, the diagnosis is not straightforward because of its similarity to carcinoma and bacterial abscesses. Breast TB is paucibacillary and consequently tests such as microscopy, culture and nucleic acid amplification tests such as polymerase chain reaction techniques do not have the same diagnostic utility as they do in pulmonary tuberculosis.⁶ Thus, it is not uncommon for breast TB to be misdiagnosed either as non-specific abscess or carcinoma.⁷ This paper presents a case to argue that breast TB should be included in the differential diagnosis of breast lesions, like breast carcinoma, persistent breast abscess and infectious patterns with fistulizations, especially for patients from high risk populations and endemic regions.

CASE REPORT

A 40-year-old female presented with a painless lump in her right breast for 3 month duration. No nipple discharge. She gave history of low grade fever off and on

for the last 2 weeks. There was no history of tuberculosis in past. There were no other complaints like weight loss, loss of appetite, and any cough. She was married and there was no positive family history of tuberculosis. On local examination, a non-tender hard lump of size 3 × 4 cm was felt in subareolar quadrant of the breast. It was freely mobile and no axillary nodes were present. Her systemic examination was non-contributory. On routine blood investigations, haemoglobin was 14.4, total leucocyte count was 8,800 mm³ and erythrocyte sedimentation rate (ESR) was 60 mm at the end of 1 h, and HIV test was negative. Her fasting blood sugar and blood urea levels were normal. Chest X-ray was normal. Her mammography was s/o ill defined heterogenous lesion in peri areolar region right breast stage III – IV BIRAD'S STAGING.

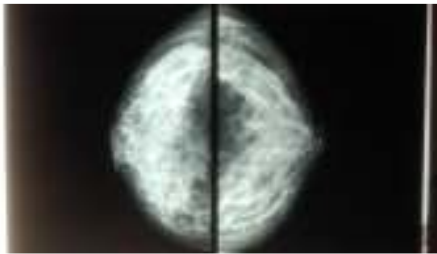


Figure 1: Mammography was s/o ill defined heterogenous lesion in peri areolar region right breast stage IV BIRAD'S classification

Tru cut biopsy of the breast lump showed severe chronic mastitis with tubercles comprised of epithelioid cells, langhans gaint cells and mentle of lymphocytes, no malignancy seen. Mountex test was not done as on tru cut biopsy diagnosis already was made. Final diagnosis made as primary breast TB.

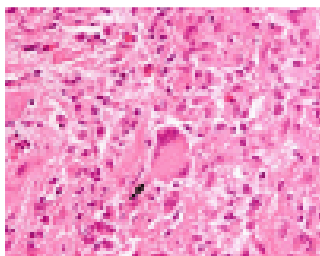


Figure 2: Hematoxylin and eosin stain of breast tissue, showing foreign body giant cell

She was put on a 1-month course of anti-tubercular therapy with one month intensive phase of rifampicin, isoniazid, ethambutol, and pyrazinamide. The lump size was not decreased after 1 month of initiation of AKT. Hence to rule out malignancy excisional biopsy was done. histopathological examination showed severe chronic mastitis with tubercles comprised of epithelioid cells, langhans gaint cells and mentle of lymphocytes, no malignancy seen. Wound healed in 10 days. She was

advised to continue anti-tubercular therapy with a 2 month intensive phase of rifampicin, isoniazid, ethambutol, and pyrazinamide followed by a consolidation phase of rifampicin and isoniazid for another 4 months. on routine follow up upto one year there was no relapse or recurrence of swelling noted.

DISCUSSION

In 1829, Sir Astley Cooper defined breast tuberculosis as the 'scrofulous swelling of the bosom'.⁶ Breast TB is an uncommon disease, with an incidence of less than 0.1% of all breast lesions in Western countries and 4% of all breast lesions in TB endemic countries.⁴ It is uncommon because the mammary gland tissue, like the spleen and skeletal muscle, offers resistance to the survival and multiplication of the tubercle bacillus. Granulomatous mastitis can occur between 0.025% and 3% of all the breast diseases treated surgically.⁵ Breast TB may be primary, when no demonstrable tuberculous focus exists elsewhere in the body or secondary to a pre-existing lesion located elsewhere in the body. It can spread by three routes – (a) hematogenous, (b) lymphatic, (c) direct spread. Breast infection is seen more frequently secondary to a tubercular focus from the lungs, pleura or lymph nodes which may not be detected on radiology or clinically. Tewari and Shukla⁴ recently classified mammary TB into three categories (a) nodulocaseous tubercular mastitis, (b) disseminated/confluent tubercular mastitis, and (c) tubercular breast abscess. Our case falls in the first category with primary breast TB because there was no evidence of another focus on physical or radiological examination nor there was prior history of tuberculosis. It is not always possible to detect acid-fast bacilli in histological sections of the breast tissue.⁵ The nodular form is the most common and can be mistaken for fibro-adenoma or carcinoma.⁴ Lesions due to TB have no specific ultrasonographic findings. They may be heterogeneous, hypoechoic, irregularly bordered mass with internal echoes or thick-walled cystic lesions on ultrasonography. In some cases, there may be fistula formation and thickening of Cooper's ligaments and subcutaneous tissues. The most reliable and definitive diagnostic studies include aspirate culture, polymerase chain reaction for mycobacterium, and histological examination of the tissue sample. If in doubt, computed tomography scanning may be useful for the differentiation of primary and secondary lesions by detecting continuity with the thoracic wall or pleura, and associated lesions of the lungs.⁸ TB breast abscess can be diagnosed on mammography as a dense sinus tract connecting an ill-defined breast mass with a localized skin thickening but Khanna reported these findings in less number of cases.² FNAC or trucut biopsy from the breast

lesion can diagnose breast TB in as many as three quarters of cases when both epitheloid cell granulomas and necrosis are present. However failure to demonstrate necrosis on FNAC does not exclude TB as often a spectrum of histological abnormalities can be found in breast TB specimens.⁹ At MR **imaging**; parenchymal asymmetry with enhancement, microabscesses, and peripherally enhanced masses can be seen. Treatment of breast TB with standard antituberculosis therapy for 6 months usually results in good clinical response.¹⁰ The regimen consists of a 2 month intensive phase (isoniazid, rifampicin, pyrazinamide, and ethambutol) followed by a 4 month continuation phase (isoniazid and rifampicin). Surgical intervention is reserved for draining cold abscesses or excision of residual lumps. In our case, disease was successfully treated with anti-tubercular therapy. In country like India, where TB is endemic, caseous necrosis with epitheloid cell granulomas even in absence of AFB should alert one to the diagnosis of TB. Only after sufficient trial of anti-tuberculous treatment has been given without expected response, should an alternative diagnosis be suggested.

CONCLUSION

The significance of breast tuberculosis is due to its rare entity and mistaken identity with breast cancer and pyogenic breast abscess. Caseating epitheloid cell granulomas in the tissue samples are diagnostic of tuberculosis. If there is a high clinical suspicion of TB,

then a trial of anti-tubercular therapy with regular clinical assessment is warranted.

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