

Primary Tuberculosis of Breast in 22 Year Old Female – A Rare Case Report

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Abstract: Mammary (breast) tuberculosis is a rare extra-pulmonary manifestation of tuberculosis which accounts for less than 0.1% of breast conditions in developed countries, but reaches 3–4% in regions where the disease presents with high incidence (India, Africa). It appears mostly in women of reproductive age group with high incidence in multiparous and lactating women. The clinical presentation is usually of a solitary, ill defined, unilateral hard lump situated in the upper outer quadrant of the breast.

The significance of breast tuberculosis is due to rare occurrence and close differentials of breast cancer and pyogenic breast abscess. Breast tuberculosis has no defined clinical features. So clinical suspicion of breast tuberculosis is difficult. Radiological imaging is not diagnostic. Diagnosis is based on identification of typical histological features or the tubercular bacilli under microscopy or on culture. Revised National Tuberculosis Control Program (RNTCP) recommends category I antitubercular therapy for 6 months for breast tuberculosis. We report a case of breast tuberculosis in a 22 year old female presenting with chief complaints of progressive slow growing lump in left breast. Histopathological examination and Ziehl–Neelsen staining of resected lump confirmed the diagnosis of tuberculosis.

Conclusion – In developing countries like India, where tuberculosis is endemic, it should be kept in mind as a differential diagnosis of breast lump.

Keywords: breast, epitheloid granuloma, lump, tuberculosis.

I. Introduction

The earliest modern clinical report of tuberculosis of the breast is attributed to Sir Astley Cooper in 1829.¹ A review of scrofulous (i.e., tuberculous) mastitis in 1898 provided a detailed description of the lesions.² Tuberculosis of the breast remains a serious condition worldwide.³

Tuberculosis of the breast is an extremely rare disease, only 500 cases of mammary tuberculosis have been documented, most of which are from relatively older literature³. Tuberculosis has been named, “the great masquerader” in recognition of its multifaceted presentation, and thus, the clinician may confuse tuberculous mastitis with either carcinoma or breast abscess.

In younger patients, the lesion presents as an abscess, whereas in older women tuberculous infection tends to simulate carcinoma. Unilateral tuberculous mastitis is much more common than involvement of both breasts.⁴

Mammary tuberculosis were found in 6 of 1152 (0.52%) consecutive mammographic examinations performed at a university hospital in Saudi Arabia.⁵

II. Case study

We present a case of 22 year old female who visited to surgery OPD with a one year history of progressive slow growing left breast lump which later became associated with pain and ulcer.

Physical examination revealed a palpable lump in the upper-outer quadrant of the left breast, 2 cm away from nipple measuring about 4 x3cm, accompanied by reddening and thickening of the adjacent skin.

There were no clinical manifestations of the disease to the nipple- areolar area, or signs of nipple discharge. The patient was afebrile, with normal blood pressure and vital parameters. On the clinical ground provisional diagnosis of mastitis was made.

Laboratory Work-Up Revealed:

Microcytic hypochromic anaemia (Hb, 11 g/dl), lymphocytosis (52%), increase Erythrocyte Sedimentation Rate (ESR) 70 mm/ at one hour. Other haematological parameters like platelet, bleeding time, clotting time were normal. Liver and kidney functions were normal.

Urine analysis revealed no pathology. No history of pulmonary disease was reported.

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No previous history of pulmonary tuberculosis or extra-pulmonary tuberculosis was present. Abdominal sonography did not report any significant pathology

Mammography was performed and indicated benign calcification in the left breast. Right breast was normal.

Ultrasonography of the left breast showed a solid, hypoechoic, 4 cm lesion, with ill-defined borders posteriorly, located in the upper-outer quadrant.

FNAC of the left breast lesion showed clusters of round to elongated cells with slipper shaped nuclei and vesicular chromatin (epitheloid cells) with lymphocytes in haemorrhagic background (figure-1). FNAC findings were suggestive of epitheloid granuloma.

She underwent left breast lumpectomy and the sample was sent for histopathological examination.

Pathologic finding:

Gross – 4- 5 fragmented irregular indurated greyish white soft tissue pieces, collectively measured 4x3x2 cm in size were received. Cut surface was grey, white.

Microscopic finding:

The histopathological evaluation of the mammary gland revealed epitheloid cells with Langhans' giant cells surrounded by lymphocytes (figure-2,3).

Epitheloid cells are round to oval with elongated spindle shaped nucleus with vesicular chromatin. Langhans' giant cells have multiple nuclei which are arranged in a horseshoe shape (Figure-3, 4). Necrosis was absent. In surrounding breast tissue lymphocytic infiltration seen (Figure-5).

On Ziehl-Neelsen stain Acid fast bacilli was 20% acid positive which confirmed the Mycobacterium tuberculosis. On the basis of clinical, FNAC, histopathology and Z-N staining diagnosis of primary breast tuberculosis was made.

The patient was treated with oral anti-tubercular therapy for 6 months postoperatively.

III. Figures

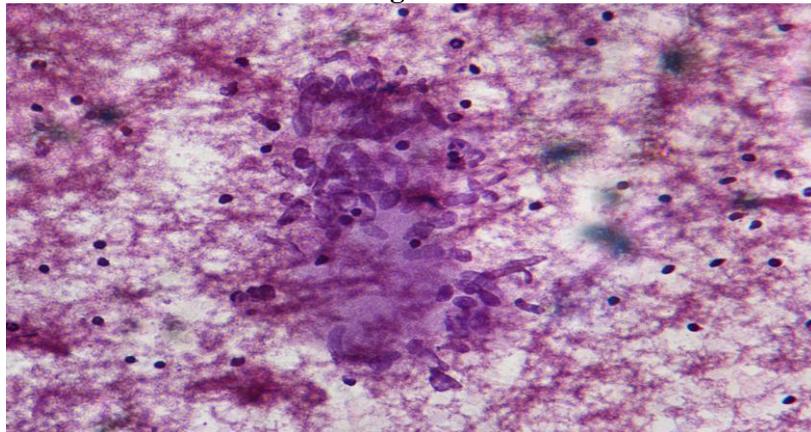


Figure -1 FNAC of breast Lump Shows epitheloid cells in clusters with lymphocytes around it (40x).

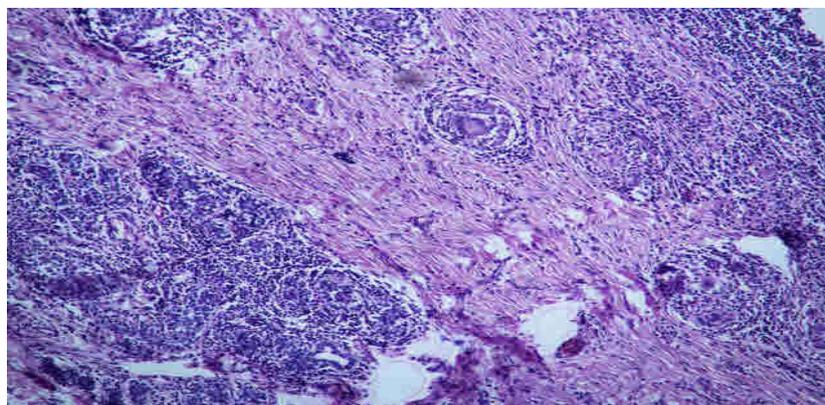


Figure 2- Section Shows Epitheloid Granulomas (4x).

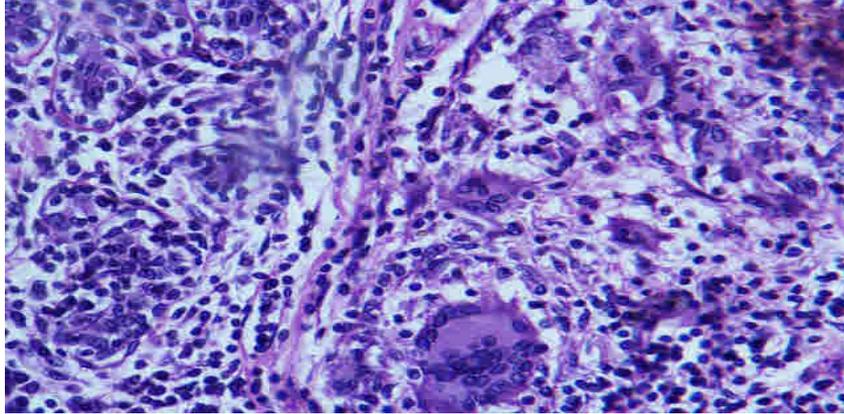


Figure 3- Section shows Langhans' giant cells, Histiocyte and Lymphocytes within the breast parenchyma (40x).

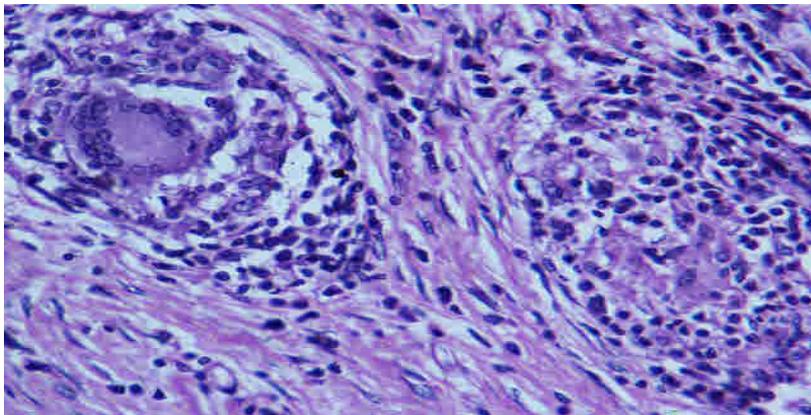


Figure 4- Shows Langhans' giant cells and Lymphocytes, which are infiltrated in stroma (40X).

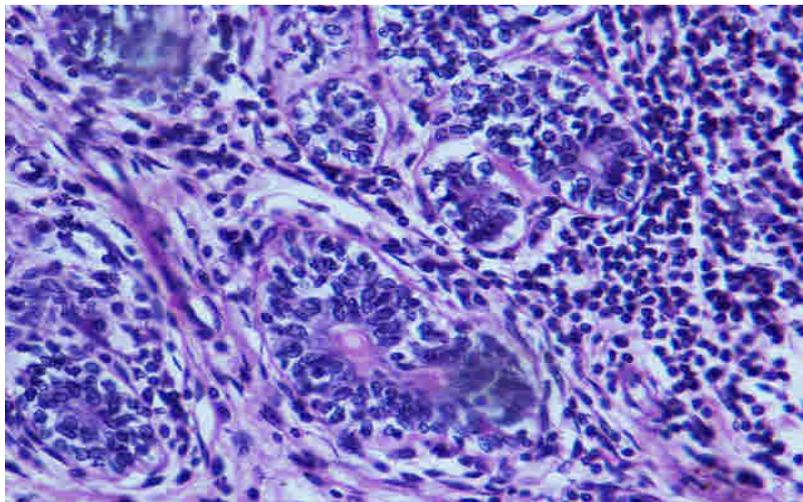


Figure -5 shows breast ducts infiltrated by lymphocytes at places.

IV. Discussion

Infection of the breast may be the primary manifestation of tuberculosis, but this is uncommon. The breasts are infected secondarily in most patients, even when the presumed primary focus remains clinically inapparent. The majority of patients also have ipsilateral axillary granulomatous lymphadenitis. Retrograde lymphatic flow from the thorax to the axilla could be a mechanism for spread from an inconspicuous primary thoracic focus of mycobacterial infection.

Another route of spread from the lungs is via tracheobronchial and paratracheal lymph nodes to internal mammary lymph nodes and then to the subareolar lymphatic plexus. Retrograde spread from infected cervical lymph nodes is also possible. Hematogenous dissemination is also a source of mammary infection. This manner

of spread has been observed in patients with AIDS who develop disseminated tuberculosis that includes the breast. Finally, the breast may be involved by extension from primary lung lesions that involve the chest wall or from tuberculous infection originating in bone, cartilage, or the retromammary region of the chest wall.

Direct inoculation of the nipple via lactiferous ducts, which dilate during lactation, may account for some pregnancy-associated infections.

The diagnosis of tuberculous mastitis is difficult, since the disease has multiple patterns of clinical presentation.²

The most common form is nodular mastitis, in which the patient develops a slowly growing, solitary mass. The lesion is generally painless, but may be tender. The mammographic and clinical appearance of such lesions resembles carcinoma.⁶

Microcalcifications are usually absent. Ultrasound and MR imaging typically reveal a solid, heterogeneous mass, but cystic encapsulated lesions have been described.

Advanced nodular lesions become fixed to the skin and may develop draining sinuses. The combination of a mass in the breast with a sinus tract extending to a superficial bulge and thickened skin was noted as a distinctive feature of mammary tuberculosis in one study. A diffuse type of tuberculous mastitis is characterized by the acute development of multiple painful nodules throughout the breast, producing a pattern that can be mistaken for inflammatory carcinoma.⁶

The third, sclerosing variety of infections occur predominantly in elderly women, resulting in diffuse induration of the breast and increased density on mammography.⁶

Nipple discharge is most common in the nodular and diffuse forms of the disease. Acid-fast bacilli may be found in the nipple discharge.⁷

The clinical distinction between tuberculous mastitis and mammary carcinoma is further complicated by the occasional coexistence of the lesions in the same breast or in opposite breasts. This association is coincidental. Some of these cases may be examples of carcinoma with sarcoid-like granulomas, since tubercle bacilli are not always identified in histological sections or cultured.⁸

Grossly, tuberculous mastitis consists of nodular, indurated gray or tan tissue with yellow to white foci of caseous necrosis. Confluent nodular lesions with central cavitation grossly resemble necrotic carcinoma or a suppurative abscess.

Granulomatous lesions in tuberculous mastitis feature caseous necrosis. In chronic cases, fibrosis may be prominent acid-fast bacteria are not detected histologically in most cases.⁶

The aspiration cytology specimen consists of epithelioid cells, histiocytes, Langhans giant cells, neutrophils, eosinophils, lymphocytes, and plasma cells. Aspirates can be evaluated by Z-N staining. Molecular analysis of material obtained by aspiration or surgical biopsy can be used for the detection of mycobacterial DNA.

Mastectomy may be necessary for advanced lesions with extensive sinus formation, but most patients respond to the antibiotic regimen after excisional biopsy. Failure to control the lesion has been reported in patients who receive antibiotic therapy without excision of the lesion.

The principal differential diagnosis is that of breast carcinoma. Other diseases of the breast such as fat necrosis, plasma cell mastitis, periareolar abscess, idiopathic granulomatous mastitis and infections like actinomycosis and blastomycosis are to be considered.^{9,10,11}

V. Conclusion

In developing countries like India, where tuberculosis is endemic, it should be kept in mind as a differential diagnosis of a breast lump. Tuberculosis of the breast is very difficult to diagnose on clinical assessment. So FNAC or/and biopsy of a breast lump with Z-N staining should always be performed to confirm the diagnosis of breast tuberculosis.

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