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Breast Tuberculosis in 37 years old Female, A Case Report

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Abstract

Breast tuberculosis (TB) is a rare manifestation of extra pulmonary TB, causing granulomatous inflammation in the mammary gland. Diagnosis is challenging due to the absence of specific clinical or radiological features, and definitive confirmation often relies on microbiological or histopathological examination of biopsy specimens. Treatment involves anti-tubercular therapy, typically a combination of rifampicin, isoniazid, pyrazinamide, and ethambutol. Surgical intervention may be considered for draining abscesses or excising non-resolving masses. Breast TB should be considered in differential diagnosis of breast lesions, especially in regions with high TB prevalence. Increased awareness among clinicians and the use of appropriate diagnostic tools are essential for timely and accurate management, preventing unnecessary surgical interventions and ensuring favourable outcomes. Further research is needed to enhance our understanding of the epidemiology, diagnostic approaches, and optimal management strategies for breast TB. This case had multiple treatments at different time with miss diagnosis but lastly diagnosed with biopsy and took anti-tuberculosis treatments and currently cured of the disease and also she had no breast compliant after completing the treatment.

Key words: breast tuberculosis (TB); diagnosis ; microbiological ; histopathological

Abbreviations:

AFB	**:**	**Acid fast bacteria**
ATT	**:**	**Anti tuberculosis treatment**
AIDS	**:**	**Acquired immune deficiency syndrome**
AFB	**:**	**Acid fast bacteria**
CBC	**:**	**Complete blood cell count**
IGM	**:**	**Immunoglobulin M**
FNAC	**:**	**Fine needle aspirations cytology**
TB	**:**	**Tuberculosis**

Introduction

Despite the advances in treatment, Tuberculosis (TB) is still a global health problem, responsible for 1.3 million deaths in 2012 (1). Tuberculosis of the breast is a rare entity, in spite of over one billion people suffering from tuberculosis

worldwide (2). Only 28 cases of mammary tuberculosis were reported in Japan over a 15-year period. The overall incidence of tuberculous mastitis is reported to be 0.1% of all breast lesions, while in developing countries it constituted approximately 3.0% - 4.5% of surgically treated breast disease (3). Diagnosis of breast tuberculosis is difficult and from time to time it is misdiagnosed, as in one patient in the present series. Its diagnosis continues to be a challenge in both clinical examination and imaging. Tuberculin test is usually positive in endemic areas for pulmonary tuberculosis, but it has no diagnostic value for breast tuberculosis. Acid-fast bacilli may be seen in some cases. Although mycobacterial culture is the gold standard for the diagnosis of tuberculosis, it is not always helpful in the diagnosis of breast tuberculosis. Polymerase chain reaction may show mycobacterium DNA, but is not used routinely because of its high cost. Khanna et al., Breast tuberculosis, 2002 (4)

Case Report

This is 37 years old lady who had three children and the last one is 1 year old and size breastfeeding 6 month back. Her complaint is recurrent breast swelling with pain. Associated to this she also complained of color change of breast skin and intermittent discharge from the site of the swelling. She visited for the previous compliant different health centers but only short-term improvements after oral medications.in one of the private clinic incision and drainage was done but the swelling and other complaints recurring. On physical examination hard mass which measures 5 by 4 cm and surrounding fluctuant mass and erythematous skin with imminent rupture. CBC is normal, ultrasound came with breast abscess and FNAC done and inconclusive so I drained the abscess and sample takin from the mass and sent for pathology. The histopathology report came with left breast chronic granulomatous mastitis with diagnosis suggestion for breast tuberculosis.

After counselling her, linked to the internist and initiated on anti-tuberculosis treatment. She currently cured after completing the anti-tuberculosis for six months.

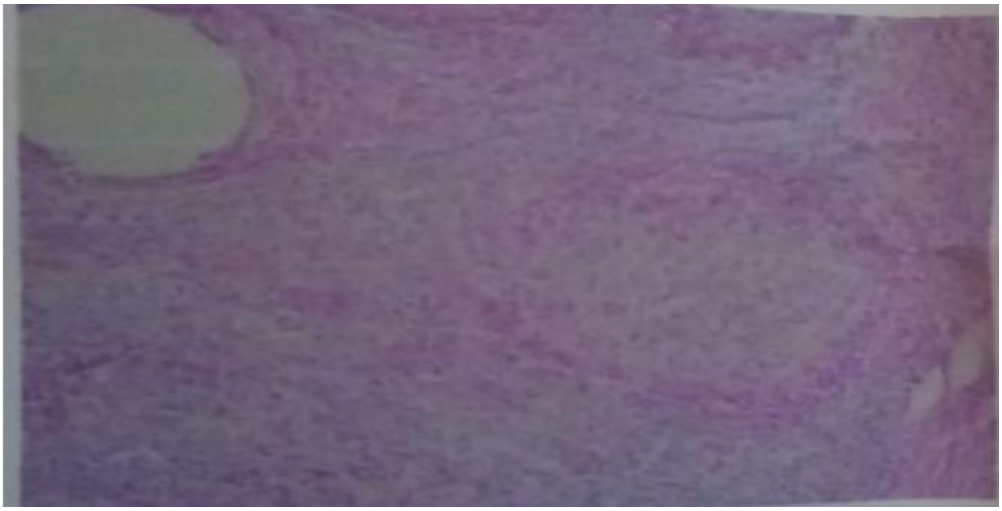

***Figure 1**: The pathology smear slide showed the granuloma lesion which was done for our presented case.*

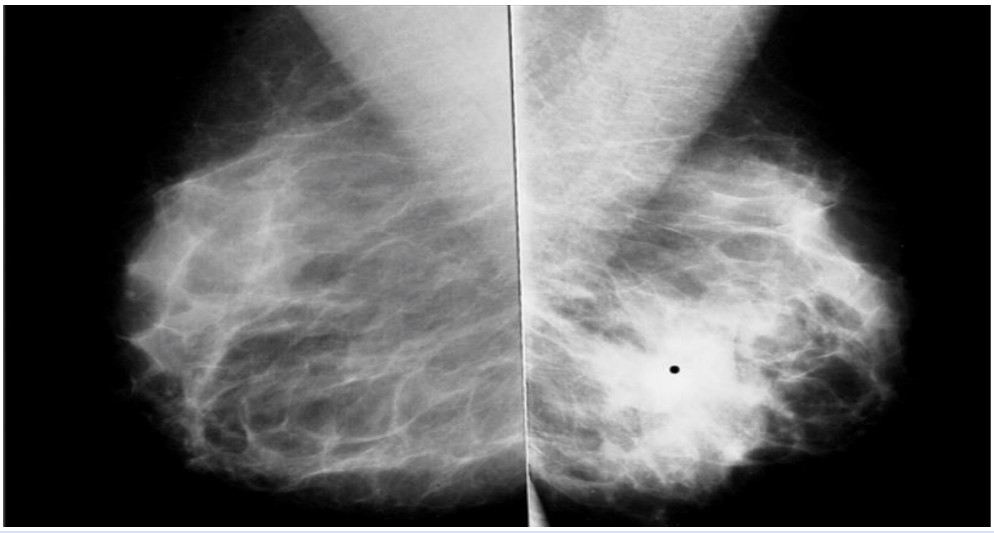

***Figure 2**: Bilateral Medio-lateral oblique mammograms showing focal asymmetrical density with architectural distortion area (•) in the lower portion of the left breast.*

Discussion

Breast tuberculosis disease: The significance of breast tuberculosis is due to rare occurrence and mistaken identity with breast cancer and pyogenic breast abscess (5). Breast tuberculosis was scarcely reported even from endemic areas until lately when several reports have come up from South Africa and India .The incidence of tubercular mastitis although decreasing in the West could show a resurgence with the global pandemic of AIDS. Breast tuberculosis has no defined clinical features. Radiological imaging is not diagnostic. Diagnosis is based on identification of typical histological features or the tubercle bacilli under microscopy or culture. Antitubercular therapy for 6 months with or without minimal surgical intervention forms the mainstay of treatment today (6).

The breast may become infected in a variety of means like haematogenous, lymphatic, spread from contiguous structures are common ways. Of these, the most accepted view for the spread of infection is centripetal lymphatic spread. The path of spread of the disease from lungs to breast tissue was traced via tracheobronchial, Para tracheal, mediastinal lymph trunk and internal mammary nodes. According to Cooper's theory, communication between the axillary glands and the breast results in secondary involvement of the breast by retrograde lymphatic extension (7).

Clinical presentation of Breast Tuberclosis:

The history of the presenting symptoms in breast tuberculosis is usually less than a year but varies from a few months to several years. Breast tuberculosis commonly affects women in their reproductive age group, between 21-30 years, similar to the highest incidence of pulmonary tuberculosis reported in the same age group of females. This may be because the female breast undergoes frequent changes during the period of activity and is more liable to trauma and infection. In pregnant and lactating women, the breast is vascular with dilated ducts, predisposed to trauma making it more susceptible to tubercular infection. It is uncommon in prepubescent females and elderly women. Breast tuberculosis is rare in males and is reported in about 4 percent of cases. Bilateral involvement is uncommon (3%) (8).

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. The lump is often indistinguishable from carcinoma breast being irregular, hard and at times, fixed to either skin or muscle or even chest wall. But the lump is usually painful. The breast remains mobile unless involvement is secondary to tuberculosis of the underlying chest wall (9) .

Breast tuberculosis is a rare form of tuberculosis (6). Of all the breast diseases treated surgically, tuberculosis is seen in the range between 0.025% and 0.1%. This ratio is higher in undeveloped countries (7). Their ages were between 20 and 63 years. All of them had children and were breastfeeding. The cause of admission to the hospital was swelling in four of them and pain in the remainder. All of the lesions were unilateral. One case had received antituberculosis treatment for pulmonary tuberculosis 10 years ago. AFB was not detected in sputum, breast discharge, urine and tissue culture in all the cases. The diagnosis was made histopathologically from the excisional biopsy material. Caseating granulomatosis was also found in axillary lymph nodes in three cases. Antituberculosis therapy was started as 2HRZE/4HR for all of the cases. Three of them completed the therapy without any complaints. One case left the hospital without permission. The last one showed resistant tuberculosis treatment for pulmonary disease without any complaint of her breast. In conclusion, although tuberculosis of breast is extremely rare, it should be kept in mind particularly in developing and undeveloped countries (10).

FNAC was found to be a sensitive diagnostic technique in 74.60% of patients. ATT continued to be the cornerstone of care, supplemented by surgery when needed. Once verified, the results of medical treatment are frequently favorable. (11).

Only aspiration of cold abscesses and excision of any remaining masses and sinuses were to be treated surgically. Male breast TB is not legally recognized and is an uncommon kind of tuberculosis. Here, we report on a man who had clinically diagnosed as having breast cancer despite having tuberculosis. (9, 10, 12).

Idiopathic lobular granulomatous mastitis (ILGM):

Is a rare chronic inflammatory disease of the breast that can clinically mimic breast carcinoma. Patients usually present with progressive onset of a breast lump. In cases of idiopathic lobular granulomatous mastitis, patients present with a firm, discrete lump, often accompanied by skin inflammation.(13). The diagnosis of ILGM requires that other granulomatous lesions in the breast be excluded. (Table1)

Infectious	
a.	Mycobacterium tuberculosis
b.	Blast mycosis
c.	Cryptococcosis
d.	Histoplasmosis
e.	Actinomycosis
Autoimmune process	

f.	Wegner granulomatosis
g.	Giant cell arteritis
h.	Foreign body reaction
Duct ectasia	
i.	Plasma cell mastitis
j.	Sub areolar granuloma
k.	Periductal mastitis
4.	Diabetic myelitis
5.	Sarcoidosis
6.	Fat necrosis
7.	Idiopathic

***Table 1**: Ethological differential diagnosis for granulomatous lesion of breast*

Granulomatous mastitis (GM):

Granulomatous mastitis is a rare disease primarily affecting premenopausal women, often linked to breastfeeding and oral contraceptives. It presents with symptoms like galactorrhea, inflammation, breast mass, tumorous indurations, and skin ulcerations. Histopathology diagnoses often mimic breast cancer, involving chronic inflammation. (14, 15).

GM treatment involves surgical excision, steroid therapy, anti-inflammatory drugs, and immunosuppressive therapy to prevent recurrence and ensure complete remission. (14, 16). Breast tuberculosis in eastern Anatolia differs from literature due to late symptom onset, large breast masses, and a higher rate of sinus formation. Treatment involves anti-tuberculous drug regimens, with surgery for diagnostic procedures. The low socioeconomic level and difficulties in diagnosis contribute to these differences. Treatment focuses on drug regimens, drainage, and excision of residual mass and sinuses (9, 14) .

The findings confirmed that breast TB in Iran should be considered as a differential diagnosis of breast masses (13, 17). All patients in our study received the daily and 'Directly Observed Treatment Short-course' (DOTS) regimens. Anti-tubercular therapy for six months with or without minimal surgical intervention currently is the main treatment (18-21).Six Month anti-tuberculosis drugs HERZ/HR for two months and four months respectively(6) (22).

Conclusion:

Particularly in underdeveloped countries, breast tuberculosis is a useful differential diagnosis for women who present with breast discomfort and lumps. (4, 23). This shortens the time between diagnosis and care. In our scenario, tissue histopathology examination is the most effective diagnostic technique. Surgical methods for draining cold abscesses and fistula excision are among the available treatments. HERZ/HR anti-tuberculosis medications for two and four months, respectively, are the definitive treatment. (24, 25). Our client cured of the disease after completing the anti-tuberculosis medications.

Conflict of Interest

No financial or interest of conflict to disclose.declare/ No any financial interest or any conflict of interest exists.

Author's Contributions

Author A

1: Conception of the work AND Design of the work AND Acquisition of data

2: Drafting the work AND Revising the work critically for important intellectual content

3: Final approval of the version to be published

4: Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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References:

1. Ghalleb M, Seghaier S, Adouni O, Bouaziz H, Bouida A, Hassouna J Ben, et al. Breast tuberculosis: a case series. J Med Case Rep. 2021; 15:1–6.
2. Quaglio G, Pizzol D, Putoto G. Breast Tuberculosis. In: Tuberculosis: Integrated Studies for a Complex Disease. Springer; 2023. p. 719–34.
3. Thimmappa D, Mallikarjuna MN, Vijayakumar A. Breast tuberculosis. Indian Journal of Surgery. 2015; 77:1378–84.
4. Tewari M, Shukla HS. Breast tuberculosis: diagnosis, clinical features & management. Indian Journal of Medical Research. 2005; 122(2):103.
5. Yadav S. Primary tubercular breast abscess in an Indian female: a rare case. Cureus. 2023; 15(7).
6. Tewari M, Shukla HS. Breast tuberculosis: diagnosis, clinical features & management. Indian Journal of Medical Research. 2005; 122(2):103.
7. Arega B, Mersha A, Minda A, Getachew Y, Sitotaw A, Gebeyehu T, et al. Epidemiology and the diagnostic challenge of extra-pulmonary tuberculosis in a

teaching hospital in Ethiopia. PLoS One. 2020; 15(12):e0243945.

8. Quaglio G, Pizzol D, Isaakidis P, Bortolani A, Tognon F, Marotta C, et al. Breast tuberculosis in women: a systematic review. Am J Trop Med Hyg. 2019; 101(1):12.
9. Hammami F, Koubaa M, Hentati Y, Chakroun A, Rekik K, Marrakchi C, et al. Breast tuberculosis: a diagnosis not to be forgotten. J Turk Ger Gynecol Assoc. 2021; 22(2):107.
10. Swagata. B., Shashwati N., Padma, VK Ramnani, Dr Vaishali, Bhagat5, Anubha. Pandey DRK. BREAST TUBERCULOSIS-A RARE PRESENTATION OF COMMON DISEASE WITH DIAGNOSTIC AND THERAPEUTIC CHALLENGE.
11. Mehta G, Mittal A, Verma S. Breast Tuberculosis-Clinical Spectrum and Management. Indian Journal of Surgery. 2010; 72(6).
12. Khan R, Charokar K. Primary tuberculosis of the breast: a diagnostic dilemma. International Surgery Journal. 2019;6(4):1392–4.
13. Khan HM, Stobaugh-Stevenson C, Joste N, Bocklage T, Russell JC. Idiopathic lobular granulomatous mastitis: An institutional experience. Ann Surg Oncol. 2011;18.
14. Bentzon T, Theut AM, Kiær H, Bentzon N. Granulomatous mastitis. Vol. 183, Ugeskrift for laeger. 2021.
15. Parperis K, Achilleos S, Costi E, Vardas M. Granulomatous mastitis, erythema nodosum and arthritis syndrome: case-based review. Vol. 41, Rheumatology International. 2021.
16. Bacon DR, Ngeve SM, Jordan SG. Granulomatous mastitis: An underdiagnosed inflammatory disease afflicting minority women. Radiol Case Rep. 2021;16(12).
17. Raivoherivony ZI, Nomenjanahary L, Rakotondrainibe FN, Randrianjafisamindrakotroka NS. Primary Breast Tuberculosis Mimicking Carcinomatous Mastitis: A Case Report. Open Journal of Pathology. 2021;11(3):79–83.
18. Asjad BZ, Ali MA, Naeem BK, Khan M, Abbasi UA, Nehal Z, et al. Breast Abcess and Tuberculosis and its Diagnostic Challenges: A Two-Year Prospective Study in Karachi, Pakistan. Cureus. 2019;11(10).
19. Rizzo G, Colli F, De Marco P, La Brocca A, Militello G, Gulotta G. An unusual presentation of breast tuberculosis: A case report. Clin Case Rep. 2021;9(1):210–2.
20. Talib S, Aziz Slaoui DIB, Benayada M, Kharbach PA. Primary Breast Tuberculosis.
21. Tazzioli G, Macolino A, Combi F, Palma E, Papi S, Codeluppi M, et al. Breast tuberculosis: A case report of primary type mammary tuberculosis. Clin Case Rep. 2019; 7(12):2346–8.
22. Arega B, Mersha A, Minda A, Getachew Y, Sitotaw A, Gebeyehu T, et al. Epidemiology and the diagnostic challenge of extra-pulmonary tuberculosis in a teaching hospital in Ethiopia. PLoS One. 2020; 15(12):e0243945.
23. Sen M, Gorpelioglu C, Bozer M. Isolated primary breast tuberculosis: report of three cases and review of the literature. Clinics. 2009; 64:607–10.
24. Thimmappa D, Mallikarjuna MN, Vijayakumar A. Breast tuberculosis. Indian Journal of Surgery. 2015; 77:1378–84.
25. Yadav S. Primary tubercular breast abscess in an Indian female: a rare case. Cureus. 2023; 15(7).