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CASE REPORT

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TUBERCULAR MASTITIS-An Uncommon Manifestation of a Common Disease

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KEYWORDS

TB Mastitis
Rare Extrapulmonary Form
Solitary Mass

ABSTRACT

Tubercular mastitis is a great masquerader. It is a sporadic form of extrapulmonary tuberculosis presenting as a solitary breast mass. It mimics breast carcinoma as it is solitary, hard and often associated with axillary lymphadenopathy. We present here a case of a young lady who presented with a unilateral breast mass and axillary lymphadenopathy initially suspected to be breast malignancy. USG breast showed a hypoechoic lesion along the ducts in the left breast with a few axillary lymph nodes. Fine needle aspiration cytology (FNAC) of the lesion was done, which showed epithelioid granulomas with caseation necrosis, suggestive of tuberculosis. She was treated with antitubercular drugs for ten months. She was monitored clinically and radiologically with serial ultrasound scans. There was complete resolution of the lesion after completing ten months of antitubercular therapy. There are only few reports of breast tuberculosis in the literature, and hence we decided to review the latest diagnostic techniques and management of this rare illness.

INTRODUCTION

Tubercular mastitis is a rare extrapulmonary form of tuberculosis. Extrapulmonary tuberculosis usually occurs via hematogenous dissemination. Sometimes the infection directly extends from an adjacent organ. TB mastitis mimics breast carcinoma as it often presents as a solitary breast lump and is associated with axillary lymphadenopathy. The nonspecific clinical and imaging findings and the lack of awareness among physicians about this rare entity lead to misdiagnosis as carcinoma or pyogenic abscess of the breast [1]. There are only limited reports of breast tuberculosis in the literature. The incidence of TB mastitis is 0.1% of all breast lesions in the Western community. At the same time, in developing countries like India, it constitutes approximately 3% of surgically treated breast disease [2]. The diagnosis and treatment becomes more complicated when breast carcinoma and tuberculosis co-exist as has been reported by Alzaraa et al [3]. The diagnosis can be missed even after FNAC/Biopsy and hence high index of suspicion by the clinician is required.

CASE REPORT

A healthy 30-year-old lady consulted the surgical oncologist with painful swelling in the left breast. The illness became apparent approximately 10 days before the consultation. She had no history of fever, weight loss, or loss of appetite. There was no family history of breast carcinoma. There was no previous history of tuberculosis or contact with patients who had been diagnosed with tuberculosis. On examination, she had a small mobile tender lump in the left breast in the upper inner quadrant and a small palpable axillary lymph node. The rest of the systemic examination was normal. An

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ultrasound of the breast revealed a focal hypoechoic lesion along the ducts at the 11 o'clock position (upper inner quadrant) in the left breast with increased vascularity and surrounding inflammatory changes. There were a few reactive enlarged lymph nodes in the left axilla. We had a clinical suspicion the swelling being a malignancy, hence FNAC of the breast lesion was done by surgical oncologist. This, in turn, revealed multiple granulomas composed of epithelioid cell clusters interspersed with mature lymphocytes, fibroblasts, multinucleated giant cells, and foci of caseous necrosis, consistent with a tuberculosis lesion. However, the AFB stain was negative.

FNAC of Breast Lesion (Showing Granulomas)

FNAC 1 (Figure 1).

FNAC 2 (Figure 2).

Other routine blood investigations done were normal. Chest X-ray revealed no foci of tuberculosis. The patient was diagnosed to have a nodular type of primary breast tuberculosis, and she was initiated on antitubercular therapy. She was started on HRZE for 2 months, according to NTEP guidelines, followed by HRE, which was extended for 8 months. She was followed up regularly in outpatient visits, which included clinical examinations and relevant laboratory parameters. After 2 months of antitubercular drug therapy, she developed purulent discharge from the lesion in the left breast. On examination, there was an ulcer with purulent discharge in the left breast in the periareolar region. A repeat ultrasound showed a hypoechoic sinus tract for a length of 1.8 cm from the persistent periductal lesion to the surface of the skin. She was treated with local cleansing and dressing and continued on antitubercular therapy. The sinus discharge resolved with regular dressings and medical management. She complained of recurrent headaches in her routine op visits; hence, brain imaging was done to rule out CNS tuberculosis, which was found to be normal. A six-month follow-up ultrasound scan of the left breast showed a persistent hypoechoic lesion of the same size with a sinus tract, but there was no sinus discharge. After completing 10 months of antitubercular therapy, an ultrasound was done, which showed resolution of the hypoechoic lesion and the sinus tract. We reviewed the literature regarding treatment of Tubercular mastitis. Multiple case reports suggest six to twelve months of antitubercular therapy. NTEP guidelines suggest a treatment duration of 9–12 months for extrapulmonary tuberculosis [4]. We treated her with Antitubercular therapy for 10 months and stopped it after confirmation of complete resolution of the lesion by ultrasound. A follow-up scan performed six months later revealed no recurrence of the lesion.

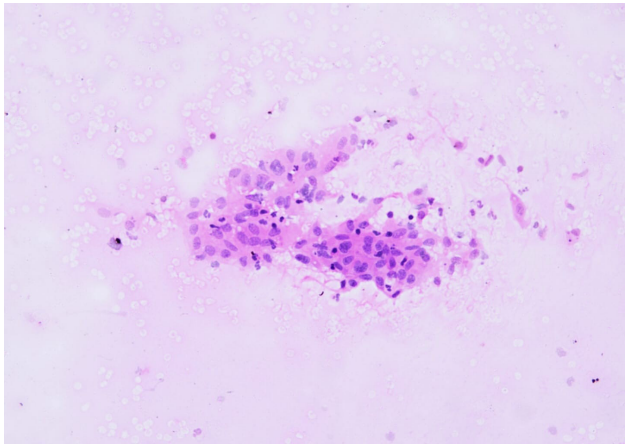

Figure 1. Epitheliod granulomas.

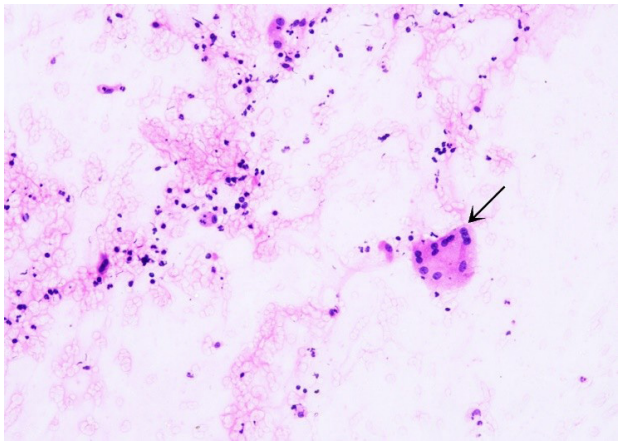

Figure 2. Arrow showing giant cell.

DISCUSSION

Tuberculosis of the breast is a rare occurrence, primarily because tissues such as the breast, skeletal muscle, and spleen are generally resistant to tuberculosis infection. It is usually secondary to pulmonary disease and less commonly primary when no other source can be found. The routes of transmission are hematogenous, lymphatic, direct inoculation through traumatised skin or ducts, and by direct extension from the thoracic wall [5]. It is usually observed in young, multiparous, and lactating mothers, as they exhibit increased vascularity in the breasts. One interesting hypothesis from an Indian series correlates a prevalence of tuberculosis in the faucial tonsils of suckling infants with a higher incidence of tuberculosis of the breast in lactating women [6]. It is extremely rare in men. Other predisposing factors include trauma to the chest wall and immunodeficiency states such as HIV. It presents as a unilateral lump in the central or upper quadrant of the breast, which can be complex, irregular and associated with axillary nodes, hence mimicking breast carcinoma. There can be local complications such as sinus or fistula

formation, skin ulceration or abscess. Systemic symptoms are uncommon. Based on radiological and clinical findings, the disease can be described in three forms: Nodular, Diffuse and Sclerosing. Nodular TB mastitis is the most common type. It presents as a well-defined, slowly growing, painless, hypoechoic mass that mimics a fibroadenoma in the early stages. Later, local complications may occur, such as a fistula in the nipple-areolar complex. Sclerosing mastitis is more common in older women and can mimic inflammatory carcinoma. There is extensive fibrosis in this type associated with nipple retraction. Ill-defined hypoechoic masses characterise diffuse mastitis and may be related to small fluid collections and sinus tracts. Ultrasound is the first radiological investigation used in diagnosis as it can evaluate the breast lesions and axillary lymph nodes. Unilateral axillary lymphadenopathy is seen in 20–69% of cases. There can be conglomerate lymph node masses, abscess or fistula. Other imaging modalities are CT, MRI and Mammography. Mammography is of limited use, as the findings are indistinguishable from those of malignancy [7]. The three methods used for Histopathological diagnosis are FNAC, core needle biopsy and open biopsy. There is necrotising granulomatous inflammation on HPE in 73% of cases. The gold standard for diagnosis is demonstration of acid-fast bacilli by Ziehl-Neelsen stain and culture. These are often negative owing to the paucibacillary nature of breast tuberculosis. Incorporating newer and highly sensitive techniques, like the Polymerase chain reaction, can be helpful in early diagnosis. In a 2015 study by Nalini Gupta et al. regarding the role of TB PCR in diagnosis of TB mastitis, 54 cases of breast lesions were examined. PCR helped identify 13/26 (50%) cases reported as only granulomatous inflammation on cytology, increasing the sensitivity by 50%. FNAC was an efficient method for collecting material for PCR [8]. The differential diagnosis for tuberculosis of the breast is sarcoidosis, granulomatous mastitis, actinomycosis, plasma cell mastitis and traumatic fat necrosis.

The treatment of TB Mastitis is the same as any form of extrapulmonary tuberculosis, involving 9–12 months of anti-tubercular therapy. Surgery may be considered when there is no response to medical treatment or when an abscess requires drainage. Follow-up scans are sufficient for those who respond well to antitubercular therapy.

Our patient had a nodular type of primary tubercular mastitis with complications of an ulcer and sinus tract formation. The FNAC of the lesion on histopathology showed epithelioid cell granulomas, multinucleated giant cells and caseous necrosis, favouring the diagnosis of breast tuberculosis. She responded well to antitubercular drug therapy. In a retrospective analysis of our case and after reviewing the literature, the TB PCR of the tissue obtained by FNAC may have contributed to the diagnosis.

CONCLUSION

The diagnosis of Tubercular mastitis requires a high index of suspicion. The clinical and radiological features are nonspecific and mimic those of other benign and malignant breast diseases. This results in delayed diagnosis and treatment. The histopathological findings of epithelioid granulomas, multinucleated giant cells and caseation necrosis, along with response to antitubercular therapy, confirm the diagnosis. Newer techniques, such as TB PCR, can increase the sensitivity of diagnosis.

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