Case Report

Breast Lump: A Rare Presentation of Tuberculosis

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Abstract

Tuberculosis presenting as breast lump is a rare disease. This condition usually occurs in females who are in the reproductive age group. Diagnosis is quite difficult unless prompt investigations are meticulously done. They are often mistaken for malignancy. We report a 19-year-old girl with tubercular breast abscess. The abscess was incised and drained based on fine-needle aspiration cytology and ultrasonography revealed it as pyogenic abscess. Ziehl–Neelsen stain (ZN stain) of the pus sample showed acid-fast bacilli. Now, she has been started on antitubercular treatment.

Keywords: *Abscess, breast, tuberculosis*

Introduction

Tuberculosis presenting as breast lump is a rare form of tuberculosis. It can be divided into primary and secondary forms. Primary form is rare.[1] Breast tuberculosis is a rare disease, with an incidence of <0.1% of all breast lesions in Western countries and 3%–4% in tuberculosis-endemic regions, such as India and Africa.[2] Tuberculosis of the breast has been labeled a "great masquerade" in recognition of its multifaceted presentation.[3] The clinical signs of mammary tuberculosis can be insidious and nonspecific and often simulate signs of breast carcinoma.[4]

The aim of this report is to detail our experience of the difficulty in diagnosing breast tuberculosis mainly relying on clinical, radiological, and pathological findings and emphasizing on diagnosis by Ziehl–Neelsen (ZN) stain.

Case Report

A 19-year-old girl presented with a history of pain and lump in the left breast for 20 days. Furthermore, she presented with a history of on and off fever for 2 months. The girl is a known case of congenital cataract. There was a significant history of tuberculosis in the family. Her brother had tuberculosis 2 years back and had completed treatment. She was pale, poorly built, and malnourished.

Local examination revealed swelling in the breast measuring 4 cm × 5 cm, present over the upper inner quadrant, variable in consistency. There was rise in temperature at the site, tender, fluctuation test positive, and no axillary lymphadenopathy seen.

Ultrasonography of swelling reported as mastitis with abscess formation. Fine-needle aspiration cytology (FNAC) revealed abundant acute inflammatory cells, mainly neutrophils, few lymphocytes, and absence of granulomatous lesion. Hemoglobin was 8.1 g%, and white blood cell counts were 6200/cumm with polymorphonuclear cells 50 and lymphocytes 44. Erythrocyte sedimentation rate was found to be 60mm/hr at the end of 1 h.

Chest X-ray did not reveal any lesions. With these findings, the surgeon incised and drained the pus and sent for microbiology laboratory [Figure 1]. Gram's stain showed that there were plenty of pus cells and no organisms were found. In routine bacteriological culture, there was no growth. ZN stain revealed acid-fast bacilli [Figure 2]. Reinforcing our microscopic finding, the specimen was further confirmed as *M. tuberculosis* complex by cartridge-based nucleic acid amplification test (CBNAAT)/GeneXpert and was sensitive to rifampicin. The patient was referred to Revised National Tuberculosis Programme (RNTCP) for antitubercular therapy.

Discussion

Tuberculosis of breast is a relatively rare condition when compared with the

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Figure 1: Breast lump Incised and drained

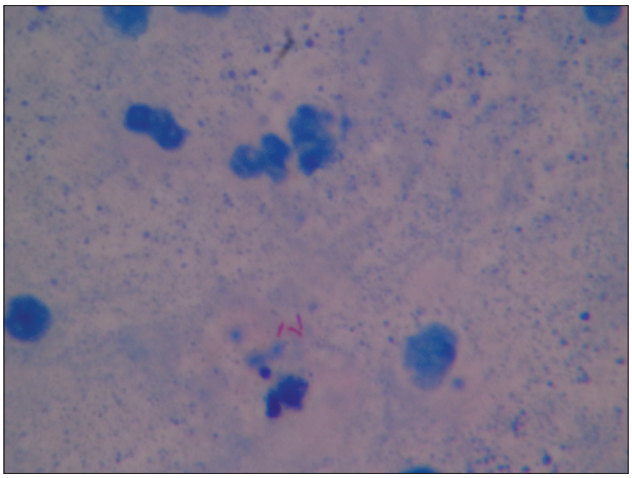

Figure 2: Ziehl–Neelsen stain: Acid-fast bacilli

frequency of tuberculous infection in other organs of the human body; yet, it is not so uncommon among the disease of the breast.[5] The most common symptom is a lump in the breast. Multiple lumps are less frequent. The classical presentation with multiple sinuses, ulcers, matted nodes, and a breast mass is unfortunately less common, making clinical diagnosis difficult at times. The lump in the breast in tuberculous mastitis is usually ill-defined, irregular, occasionally hard, and indistinguishable from a carcinoma. Pain in the lesion is present more frequently than a carcinoma, often being a dull constant, nondescript ache.[6] Primary manifestation of TB is mostly seen in premenopausal age; however, it is possible in young women between 20 and 40. FNAC can be diagnostic in about three-fourth of patients with appearance of epithelioid granulomas or Langhan's giant cells.[1]

Our patient did not have any focus of tuberculosis outside the breast, both on physical and on radiological examination, and it may be considered to be primary form.

The gold standard for the diagnosis of breast tuberculosis is detection of *Mycobacterium tuberculosis* by culture. However, histochemistry is not practical and culture of *M. tuberculosis* has limitations due to the delay in obtaining the final result and the possibility of false-negative results in paucibacillary samples. FNAC may not be able to detect the responsible pathogen itself but is detecting the presence of epithelioid cell granulomas and necrosis, leading to definitive diagnosis in up to 73% of cases.[2] CBNAAT is a recently introduced polymerase chain reaction (PCR)-based method for detection of TB. It also detects rifampicin resistance as it targets the rpoB gene of mycobacteria. CBNAAT is a *M. tuberculosis*-specific automated, cartridge-based nucleic acid amplification assay, having fully integrated and automated amplification and detection using real-time PCR, providing results within 100 min. It is a highly specific test as it uses three specific primers and five unique molecular probes to target the rpoB gene of *M. tuberculosis*, which is the critical gene associated with rifampicin resistance. No cross-reactions have been observed with many other bacterial species tested, including a comprehensive panel of mycobacteria, thereby excluding nontubercular mycobacteria.[7] Although ZN staining is not confirmatory and has low sensitivity, it can be used as screening test for all pus sample which is routine culture negative, and moreover, we have also confirmed by CBNAAT/GeneXpert (Molecular diagnosis) which is the test recommended for all extrapulmonary specimens under RNTCP guidelines. As mentioned above, we have confirmed the isolate as *M. tuberculosis* by CBNAAT/GeneXpert test, which detects only *M. tuberculosis* complex and does not detect atypical mycobacteria. Hence, we strongly recommend to perform ZN stain of any swelling in extrapulmonary site along with FNAC and confirm by CBNAAT/GeneXpert.

Conclusion

Breast tuberculosis is a rare disease. Any lump in the breast has to be sent for fine-needle aspiration as well as for ZN stain because the diagnosis of tuberculosis will be confirmatory by demonstration of acid-fast bacilli. Starting of antitubercular therapy early will be effective in such cases.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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