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Primary Breast Tuberculosis Diagnosed on Cytology of Nipple Discharge – A Case Report

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Abstract **Case Report**

Due to the inherent resistance of breast tissue to tuberculous infection, breast tuberculosis is rarely reported. One such case in a thirty-one year old non-lactating female patient is reported here. The uniqueness of this case is that it is only the second reported case in literature to the best of our knowledge which was diagnosed on cytological study of nipple discharge unlike other cases where diagnosis was made with the help of Fine Needle Aspiration Cytology or Biopsy.

Keywords: Tuberculosis, nipple discharge, fine needle aspiration cytology, AFB.

INTRODUCTION

Breast Tuberculosis is a rare clinical entity with reported incidence between 3 and 4.5% in developing countries such as India [1]. Diagnosis is generally made with help of Fine Needle Aspiration Cytology (FNAC) or biopsy [2, 3]. Diagnosis of breast tuberculosis based on analysis of nipple discharge has been very rarely reported in literature. We came across one such report in literature [4]. Here we report a case of breast tuberculosis in a thirty-one year old female patient.

CASE REPORT

A thirty-one year old non-lactating female patient reported in April 2019 to Cytology Section, Deptt. of Pathology of a tertiary care centre with history of pain and nipple discharge in her right breast. There was no history of cough, fever or weight loss. General Physical Examination was normal. Examination of chest was normal. Local examination of right breast revealed mild tenderness in the right periareolar region. Local lymph nodes were not palpable. Pressure on the lump resulted in few drops of grayish discharge from the nipple. Sample of the nipple discharge was taken for cytological and microbiological study. Microscopic examination of smear showed numerous inflammatory cells seen as intact and degenerated neutrophils, lymphocytes alongside scattered histiocytes and an occasional giant cell in a background of amorphous, granular necrotic material. No malignant cells were identified (Fig-1). Zeihl Neelsen stain for Acid Fast Bacilli (AFB) was positive (Fig-2). A diagnosis of tubercular inflammation with superadded suppuration in right breast was made. Routine investigations revealed elevated ESR and Mantoux test was positive. Investigations to diagnose evidence of tuberculosis elsewhere in the body were negative. Ultrasound of the breast revealed no abnormality. She was started on antitubercular therapy and is responding well to her treatment on regular follow up.

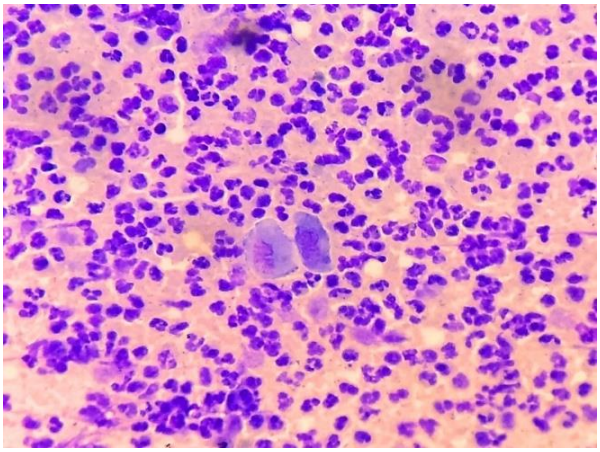

Fig-1: Giemsa stained smears (40X) shows histiocytes, polymorphs and amorphous necrotic material in the background

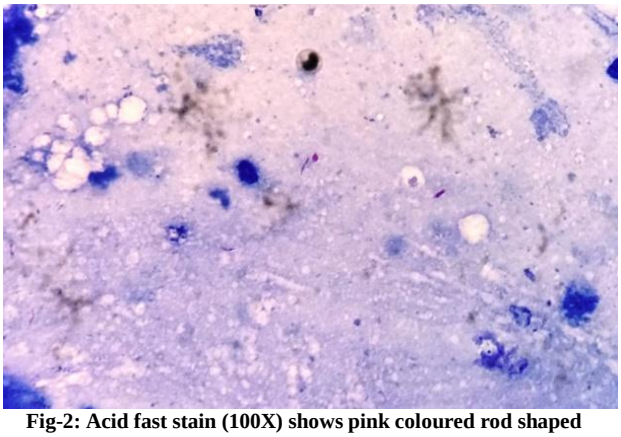

Fig-2: Acid fast stain (100X) shows pink coloured rod shaped mycobacterium tuberculosis

DISCUSSION

Breast tuberculosis is a rare clinical entity often mistaken for other benign and malignant lesions of the breast like breast abscess, granulomatous mastitis, and carcinoma breast [5]. Mammary tuberculosis was first described by Sir Astley Cooper in 1829 [6]. The first Indian case was reported by Chaudhary M in 1957 [7]. It is more commonly seen in females of reproductive age group [8]. It is very rare in males [9].

Mckeon *et al*., classified breast tuberculosis into the following categories: (a) acute miliary type (b) nodular type (c) disseminated type (d) sclerosing type and (e) tuberculous mastitis obliterans [10]. Tewari *et al*., reclassified breast tuberculosis into 3 categories, namely nodular, disseminated and abscess varieties [8]. The patient described in this case report fits the abscess variety of the second classification.

Tuberculosis of the breast is considered primary when no other demonstrable focus exists and may be considered secondary when a pre-existing lesion is located elsewhere. Primary infection of the breast is possible through the duct openings on the nipple [5]. Systemic symptoms like fever, malaise, night sweats and weight loss are present in less than 20% of cases [11]. Our patient also did not demonstrate any systemic symptoms.

The gold standard for the diagnosis of breast tuberculosis is detection of Mycobacterium tuberculosis by Ziehl Neelsen staining as demonstrated in this case report. Demonstration of mycobacterium tuberculosis on culture is difficult due to possibility of false-negative results in paucibacillary samples [12].

CONCLUSION

Extrapulmonary tuberculosis is a becoming increasingly frequent world over. The diagnosis can be made confidently only after visualising the organism or by isolating it by culture. The importance of doing AFB stain in nipple discharge smears is emphasized in this case report.

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