



## Case Study

### Breast tuberculosis in an immunocompetent adult male

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#### A B S T R A C T

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Tuberculosis of breast remains a rare clinical entity despite the fact that one third of world's population is infected with tubercle bacilli. Its incidence although decreasing in the West, could show a resurgence with existing pandemic of HIV infection. Demonstration of acid fast bacilli under microscopy and culture remain gold standard though histopathology can definitely provide strong inputs for further Mycobacterial work up. It is rare in males and infrequent amongst the tubercular breast pathologies. It is greatly significant on account of being mistaken for malignancy or pyogenic breast abscess. In this report here a case of breast tuberculosis in an adult immunocompetent male and to the best of our knowledge, this must be one of the few cases reported so far in India.

## Introduction

*Mycobacterium tuberculosis* can attack any organ system of the body but involvement of extra pulmonary sites like breast, spleen, skeletal muscles etc is very rare. Though its incidence is quite high in India, an incidence between 0.64 and 3.59 % of tuberculous mastitis has been reported from several studies in India.<sup>1</sup>

Breast tissue does not provide environment conducive to the survival and multiplication of tubercle bacilli and shows remarkable degree of resistance to this infection. The probable mechanisms contributing include (i) spread from contiguous structures, (ii)

lymphatic, (iii) hematogenous, (iv) direct inoculation and (v) ductal infection. Of these, the most accepted view for spread of infection is through lymphatic route.<sup>2</sup>

Mc Keown and Wilkinson classified it into five different types ie (i) nodular tubercular mastitis, (ii) disseminated or confluent tubercular mastitis, (iii) sclerosing tubercular mastitis, (iv) tuberculous mastitis and (v) acute military tubercular mastitis.<sup>3</sup> This was being followed over the years though the clinical scenario of breast tuberculosis has gradually changed. Hence a new classification was proposed which

classified it into three categories (i) nodulocaseous tubercular mastitis, (ii) disseminated/confluent tubercular mastitis and (iii) tubercular breast abscess.<sup>1</sup>

Tubercular breast abscess is the most common mode of presentation and commonly affects women in their reproductive age group between 20-30 years.<sup>4</sup> It is extremely rare in males and an incidence of only about 4 % of the breast tuberculosis cases has been reported.<sup>5</sup> We report here a case of breast tuberculosis in an immunocompetent adult male.

### **Case Report**

A twenty year old male presented to the surgery outpatient department with complaint of painful lump in the left breast of three months duration. He was non diabetic and did not give past history nor family history of TB. Except malaise and pain localized to the lump, there were no constitutional symptoms suggestive of tuberculosis.

The lump started as a diffuse swelling in the upper outer quadrant which gradually increased to the size of about 5-6 cm with which the patient had reported to the hospital. He was prescribed doxycycline and later on amoxicillin-clavulanic acid by a private practitioner but the lesion remained relentless. He also informed about taking ibuprofen for pain in the lump.

On examination, a lump of about 6cm×4 cm in the upper outer quadrant was seen. It was irregular, mobile, mildly tender and fluctuant. Nipple and areola appeared normal. A single node was palpable in the left axilla, it was discrete, non mobile and non tender.

On the basis of history and clinical

examination, breast abscess or malignancy were entertained in the differential diagnosis. Hemogram values were within reference range except ESR which was raised to 28 mm/first hour in Westergren method. X Ray chest was normal. Ultrasonography of the lesion showed an abscess of about 5 cm size following which needle aspiration of the abscess was undertaken which yielded about 30 ml of thick pus. This pus sample was received in the department of Microbiology. The sample was subjected to Gram stain, Ziehl Neelsen(ZN) stain, and aerobic culture on blood agar, mac conkey agar, chocolate agar was put up. No organisms were seen in Gram stain and there was no growth on the plates after 48 hours of incubation. Acid fast bacilli(afb) were seen in ZN stain.

After the sample was positive for afb in ZN stain, a part of the sample was submitted with Mycobacteriology Division of National Centre For Disease Control(ncdc), where the sample was cultured on to conventional LJ medium as well as Rapid BACTEC system. There was growth of M. tuberculosis after a period of about one week in the BACTEC system and in three weeks period on LJ medium (figure 1). The patient was started on category 1 schedule of DOTS treatment strategy. The patient responded remarkably well and at follow up after 2 months period his lesion had almost disappeared.

### **Discussion**

Though the incidence of TB is quite high in India, only few hundred cases of breast TB are reported. Lack of awareness about the manifestation of disease, misdiagnosis, lack of laboratory facilities to handle *Mycobacterium tuberculosis* could be some of the probable factors responsible for under diagnosis of this clinical entity.

It usually affects women between 21-30 years of age. This age group could be more prone because female breast undergoes frequent changes and is more liable to trauma and infection during this period. Breast tuberculosis is extremely rare in males and is reported only in about 4% of total cases of breast tuberculosis.<sup>4,5</sup>

Primary involvement of breast with tubercle bacilli can follow only if there is evidence of direct inoculation of bacilli into the breast and is extremely rare. The most common routes of infection include direct extension from underlying lesion or lymphatic spread.<sup>6</sup> In this particular case, lymphatic spread appeared to be the probable mechanism since there was a node palpable in the axilla. But fine needle aspiration cytology( FNAC) on the lymph node could not be undertaken because the patient did not agree to it. Also efforts to locate primary focus elsewhere were unsuccessful but in all probability it appeared to be a case of post primary tuberculosis.

Tuberculosis in male breast is mostly misdiagnosed and picking up correct diagnosis warrants a high index of suspicion in clinical examination and microbiological confirmation of all suspected cases. Culture remains the gold standard but has certain inbuilt limitations like lack of culture facilities for this organism in most of the laboratories coupled with the fact that even microscopy and culture results may be negative in cases where the number of bacilli in the lesions is very small.<sup>7</sup> Also since conventional culture techniques are time consuming, it is high time that an effort is made to establish rapid culture and sensitivity systems which can provide early results.

Also the diagnostic capacity of the microbiology laboratory should be

strengthened in the areas of molecular techniques like gene amplification methods which can provide added advantage of rapid identification of *Mycobacterium* upto the species level and also elaboration of sensitivity profile of the isolates.

Anti-tubercular therapy(ATT) is the main stay of treatment and may also require minimal surgical intervention like incision drainage or needle aspiration.<sup>8</sup> In our case, needle aspiration was undertaken and on the basis of ZN stain and culture results , patient was put on ATT. The patient showed remarkable response and on his follow up at two month period his lesion had almost disappeared.

Breast tuberculosis appears uncommon even in countries where incidence of tuberculosis is reasonably high and this pathology affecting males is extremely rare. Since the clinical features are not well defined, this condition is often mistaken as pyogenic abscess or malignancy. So it is essential that all the breast abscesses are subjected to detailed microbiological work up including *Mycobacteria*. A basic microbiological investigation like acid fast staining with strict internal quality control can go a long way in picking up loose ends in the chain of diagnosis for *M. tuberculosis* pathologies.

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