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Case Report

Microbiology Section

Breast Abscess Due to Mycobacterium Fortuitum: A Case Report

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ABSTRACT

Mycobacterium fortuitum (M.fortuitum) is a rapidly growing atypical mycobacterium and is usually associated with infection in immunocompromised host. Here we report a case of breast abscess with M. fortuitum infection, in an immunocompetent young woman.

Key Words: M.fortuitum, Atypical Mycobacteria, Breast abscess

INTRODUCTION

Rapidly growing mycobacteria (RGM) are a heterogeneous group of organisms, capable of growing on culture, within 7 days of incubation at 37ºC and 25ºC. Chromogenic rapid growers are mostly saprophytic. The medically important species are Non-Chromogenic, such as, Mycobacterium fortuitum and Mycobacterium chelonae. Both of them can cause pyogenic infection in human beings and are more common in immunocompromised patients. Some workers reported Mycobacterium breast infection, associated with reconstructive surgery and nipple piercing [1- 3].

We present here a case of breast abscess due to M. fortuitum infection in an immunocompetent woman of reproductive age group.

CASE PRESENTATION

A 32-years, non-lactating female patient presented in surgery outdoor with complaint of swelling and tenderness of right breast for 1 month, for which incision and drainage was done outside this institution. She had 2 children; the youngest being 10 years old. She was a non-smoker with no significant medical history. On clinical examination, the patient was afebrile and pale. Her weight was 45 kgs. There was no lymphadenopathy.

On local examination, right breast showed redness, induration and ulcers. There were total 4 ulcers, 2 at upper inner quadrant and 2 at lower inner quadrant. The ulcers were approximately 4×3×1 centimeters, covered with purulent discharge. There was no nipple discharge.

Ultrasound revealed scattered vascularity and diffused infiltrative lesions in both the breasts. Her haemoglobin was 9.9 gm/dl and erythrocyte sedimentation rate was 110mm/hr. Her platelet count was 350×103/µl, total leukocyte count 10800/cu mm and polymorphs 73%. Her liver function, renal function and serum protein level were within normal range. Her HIV status was non reactive and HBSAg negative.

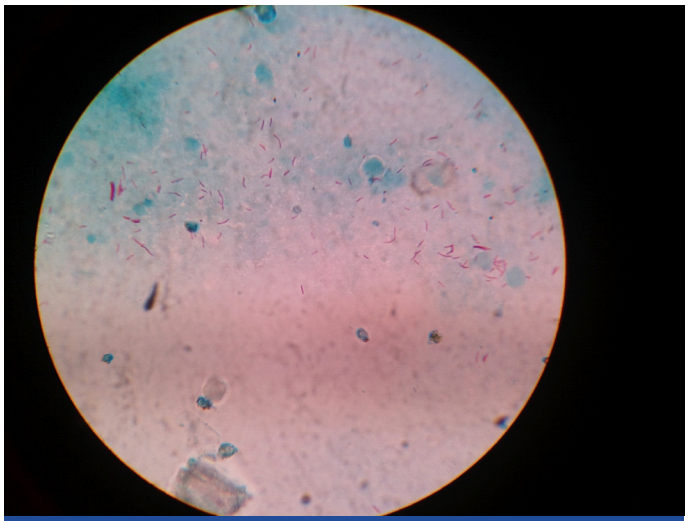
Fine needle aspiration of the left breast showed inflammatory changes. Biopsy specimen of right breast lump revealed keratinized stratified squamous epithelium and sub epithelial tissue with diffuse infiltration of acute inflammatory cells. Infiltrates were mainly polymorphs, along with lymphocytes and occasional multinucleated giant cells. Few ducts were seen, lined by cuboidal epithelial cells. There was no evidence of micro calcification, ductal carcinoma in situ, or invasive malignancy.

Pus discharge from the lesion of right breast was processed in the microbiology laboratory. On gram staining, many pus cells were seen. Routine culture was done on blood agar and MacConkey's agar and found to be sterile after 18–24 hrs incubation. On Ziehl Neelsen staining, many acid fast bacilli were seen [Table/Fig-1].

Culture was done on 3 bottles of Lowenstein Jensen media and incubated at 25ºC, 37ºC and 45ºC. On 5th day of incubation, cream coloured, non pigmented colony was seen in both the tubes, incubated at 25ºC and 37ºC [Table/Fig-2].

The culture isolate was identified by a battery of tests, such as, growth within 7 days, growth at 25ºC and 37ºC, no pigment production in dark and light both, negative niacin production, strongly positive catalase test, positive Urease production and positive nitrate reduction [4]. The isolate was susceptible to polymyxin B. Subsequent submitted specimens were also showed growth of M. fortuitum.

The patient was treated with augmentin b.d, flucloxacillin (500 mg q.i.d) and AKT. After 2 weeks, the patient's condition was improved and she was discharged on request with an instruction for follow up visit.



[Table/Fig-1]: Acid fast bacilli on gram staining of pus samples

[Table/Fig-2]: Growth of M. fortuitum on Lowenstein Jensen medium

DISCUSSION

M. fortuitum is included in the Runyon group four, rapidly growing mycobacteria [5]. The designation "M. fortuitum" was given by Da Costa Cruz to a strain of RGM (ATCC 6841) [6]. The first case was reported in 1990 by Sack, who isolated M. fortuitum from a patient of AIDS, with a history of i.v drug abuse [7].

Its distribution is worldwide. It is found in natural and processed water sources as well as sewage and soil. It may contaminate the lesion following trauma or surgery and medical device implantation. Sometimes it may cause injection site abscess. Disseminated infection with M. fortuitum was also seen among immunocompromised [8-10]. It has been reported that only 4 – 6/ million people get infected with M. fortuitum every year [11].

The treatment for M. fortuitum infection is drainage of pus, surgical debridement, removal of implant, if any, and antibacterial therapy [1, 12]. Antibiotics used for rapid growers are different from those used for slow growing mycobacteria [13] No standard duration of therapy is reported so far. Treatment may last upto 6 months or more [14].

Till date very few cases of M. fortuitum infection in immunocompetent patients have been reported to occur [1]. In our case, direct inoculation of contaminated material might had been a source of infection at the time of initial incision and drainage of the breast abscess from outside. This emphasizes the importance of proper sterilization and hygienic practices to prevent this type of infection [15]. Our patient responded well with the treatment.

When there is adequate sampling of a breast abscess which shows no growth on initial bacterial culture and there is no improvement of breast infection, despite standard antibiotic therapy, atypical mycobacterial infection needs to be considered [2,8]. Without routine acid fast staining and culture, diagnosis might have been missed. Therefore; we recommend the testing of any drained pus for acid fast bacilli, if no growth is visualized on routine culture.

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