Fusarium solani breast abscess

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Abstract

An unusual manifestation of breast fusariosis was encountered in a 55-year-old female diabetic patient. Two fine needle aspirates (FNA) from the abscess were done at three days interval and they showed hyaline, septate, branched, fungal hyphae in 10% potassium hydroxide mount. Fungal infection was confirmed by demonstrating the fungal hyphae in the midst of lymphocytes, macrophages and neutrophils in Leishman stained smears. Culture of both FNAs yielded a heavy and pure growth of Fusarium solani. The patient responded to oral ketoconazole 200 mg once daily for 3 weeks. The breast fusariosis reported here is presumably the first case in India.

Key words: Fusariosis, breast abscess, Fusarium solani

Case Report

Fusarium is a well known plant pathogen, a common contaminant and is widely distributed in plants and in the soil. Infections due to Fusarium are collectively referred to as fusariosis. The most virulent Fusarium species is Fusarium solani. Fusariosis commonly occurs in humans with low defense levels or following a traumatic episode and causes diseases such keratitis, onychomycosis, arthritis and mycetoma. Cutaneous mycosis due to Fusarium solani, especially in patients with burns wound has been reported. Fusarium is one of the emerging causes of opportunistic mycotic infections. A rare case of fusariosis of breast abscess in a diabetic female patient is being repeated here with the clinical, histopathological and mycological findings.

Case Report

A 55 year old lady presented with a tender 4 x 3 x 2 cm swelling, on the medial side of the right breast of 45 days duration. She was diagnosed to have breast abscess by a local practitioner for which an incision and drainage was performed. Serous purulent(2-3 mL) material was drained. She was started on oral cloxacillin 500 mg twice daily for 5 days. A local dressing of the drainage site was done with betadine solution. The treatment was continued with injection gentamicin as she did not respond to the oral antibiotic. As the patient did not show any response to cloxacillin / gentamicin she was referred to the surgical unit of Raja Muthiah Medical College and hospital. On clinical examination, a freely mobile, ulcerated 4 x 3 x 2 cm swelling with serous discharge was seen on the medial aspect of the right breast (Figure A) with axillary adenitis. Two fine needle aspirations (FNAs) were performed at 72 hours interval which yielded 3-5 mL of serous purulent material on each occasion. The specimens were subjected to histopathological and microbiological examinations.

The patient was a known case of diabetes mellitus and was on irregular antidiabetic therapy for six years. Her laboratory investigations revealed haemoglobin 9.8gm%, blood sugar (fasting) was 289 mg/dL, post prandial blood sugar was 440 mg/dL, blood urea – 29 mg/dL, serum creatinine – 0.7 mg/dL, total cell count was 8600, with differential count of polymorphs 39, lymphocyte 55, and eosinophils 6%. Erythrocyte sedimentation rate measured 40 mm. after 30 minutes and 84mm. after 60 minutes.

Leishman stained smear of FNA showed large septate branched, fungal hyphae mixed with lymphocytes, polymorphs and macrophages (Figure B).

A wet mount of the FNA and 10% KOH mount of FNA revealed hyaline, septate, branched, fungal hyphae. Gram

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stain, Ziehl Neelsen stained smears of the aspirate revealed numerous pus cells, no bacteria and no acid fast bacilli. The FNA specimens were inoculated onto blood agar, MacConkey’s agar, Lowenstein Jensen medium, thioglycollate broth and Robertson’s cooked meat medium for aerobic, anaerobic and mycobacteria culture. They were also inoculated into two sets of Sabouraud dextrose agar with and without antibiotics, brain heart infusion agar and brain heart infusion blood agar. One set was incubated at 37 °C and the other set at 25 °C. After 2-5 days of incubation, a heavy growth of fungal colonies was seen. The colonies appeared floccose, pink and reverse side of the colony was purple. The lactophenol cotton blue mount of the colony had septate branched hyphae, that produced microcondia and many multiseptate sickle or boat shaped macroconidia (Fig. C). The fungus was identified as Fusarium solani by slide culture.

Discussion

Fusarium is a hyaline, filamentous fungus widely distributed on plants and soil. Fusarium species are very common in the tropical and subtropical areas. Though Fusarium is known to produce infections of the skin, eye, nail, and has not been incriminated as the causative agent of a breast abscess. The diagnosis of fungal breast abscess was suspected because the patient had diabetes and did not respond to the antibacterials given initially. Bacteriology culture yielded no bacteria including anaerobic culture. Ziehl Neelsen stained smears of FNA had no acid fast bacilli. The fungal infection was diagnosed by repeatedly demonstrating the septate branched fungal hyphae in KOH mount of the aspirates from the abscess on two occasions. Leishman’s stained smears of FNA also revealed many septate branched fungal hyphae. The mycological diagnosis of Fusarium solani was confirmed by repeatedly isolating a heavy and pure growth of Fusarium solani from the specimens. Trauma is the major predisposing factor for the development of cutaneous infections with Fusarium strains. This patient with breast abscess could not recall any traumatic episode. However, she was a farmer’s wife and worked in the paddy field and carried hay bundles between her right arm and her breast. Fusarium solani spores from the hay probably gained entry through minor abrasions sustained while working in the paddy field. This patient with chronic breast abscess responded very well to oral ketoconazole and the abscess regressed and healed by the seventeenth day. This treatment was continued for three weeks and the patient had no recurrence of infection after three months of follow up.

To the best of our knowledge we record here the first report of Fusarium solani breast abscess from India.

References