PHAEOHYPHOMYCOSIS OF SUBCUTANEOUS TISSUE CAUSED BY PHAEOACREMONIUM PARASITICUM

Though *Phaeoacremonium parasiticum* is an unusual cause of human disease, subcutaneous infection, eumycetoma, osteomyelitis, arthritis and even disseminated diseases, such as fungemia and endocarditis have been reported. Here, we report a case of subcutaneous abscess on the forearm due to *P. parasiticum* in a 26-year-old woman. There were no obvious predisposing factors. The patient was treated with surgical debridement followed by intravenous amphotericin B and itraconazole to which she responded well. We report this case, being rare and the first from India.

**Key words:** Phaeoacremonium parasiticum, subcutaneous infection

Human disease caused by *Phaeoacremonium parasiticum* is a rarity. Previously named as *Phialophora parasitica*, it was first reported in 1974 to cause subcutaneous tissue infection in renal transplant recipient.[1] Since then, only a few cases have been reported in world literature but perhaps underreporting occurs due to incomplete or incorrect identification.[2] Also, some of the cases of subcutaneous infection in otherwise healthy patients are nondramatic in nature and definitive identification of the etiological agent is not pursued.[3] The spectrum of disease caused by *P. parasiticum* is variable and ranges from subcutaneous infections to fungemia and disseminated disease.[1,3] Of the many cases reported to date, a majority involve immunocompromised patients.[4] Good outcomes have been
achieved with surgical debridement and use of antifungals like amphotericin B, azoles, and flucytosine (FC). Herein, we report a case of subcutaneous tissue swelling in a young 26-year-old female, whose etiology was traced to P. parasiticum. The therapy was successful with surgical debridement, amphotericin B, and itraconazole.

Case Report

A 26-year-old woman presented with a tender swelling in the left forearm on 6th September, 2007. Initially, a year back, the patient had noted a small swelling. The swelling gradually increased in size to approximately 8–10 cm X 4–5 cm (Fig. 1). There was no history of fever or trauma to the affected part. As the swelling increased there was a feeling of heaviness and cosmetic deformity due to which the patient visited our hospital. The patient was nondiabetic, without any other predisposing factors. There were no obvious lesions in other parts of the body. Tissue biopsy was performed which on Hematoxylin and Eosin staining showed fungal hyphae in fibrocollagenous tissue with minimal inflammatory infiltrate consisting of lymphocyte and eosinophils (Fig. 2). A piece of the biopsy material was cultured on Sabouraud’s Dextrose Agar (SDA) and incubated at 37 °C. Her hematological, renal, and liver function tests were within normal limits. The patient was nonreactive for HIV antibodies.

In the meantime, surgical debridement was performed and the patient was started on intravenous amphotericin B. The debridement tissue showed branched septate hyphae on Gomori’s Methenamine Silver (GMS) staining. Colonies appeared on the SDA which were initially yellowish on the obverse, very slow growing, but within three weeks became gray–black in color (Fig. 3) with blackish pigmentation noted on the reverse, which was limited to the colony and no diffusible pigment in the agar. Slide culture from the colony done on Potato Dextrose Agar (PDA) observed after one week of incubation at room temperature (Fig. 4) showed slender phialides, slightly tapering toward the tip with small...
conidia, which were thin walled, cylindrical to sausage shaped, 3–6 X 1.2 μm, and grouped together forming a ball. There was no constriction at the base of the phialides. Hence, the fungus was identified as *P. parasiticum*. The patient responded well to the combined surgical debridement and amphotericin B treatment regime and was later discharged on oral itraconazole prescribed for two months. The patient had no relapse of symptoms at the last follow up.

**Discussion**

*P. parasiticum* is an unusual cause of human disease. It was first reported in 1974 as *Phialophora parasitica* causing subcutaneous tissue infection.[1] Since the initial description, few cases have been reported in literature. *Phaeoacremonium* species are chiefly found in the environment of woody plants as endophytes or as agents of plant diseases.[2]

In 1996, Crous *et al.*[5] proposed a new hyphomycete genus *Phaeoacremonium* with *P. parasiticum* as its type species. Morphologically, the genus *Phaeoacremonium* is intermediate between the genera *Acremonium* and *Phialophora*. It is distinguished from *Acremonium* by its phaeoid vegetative hyphae and from *Phialophora* by its narrow conidigenous cells and the inconspicuous collarettes. Morphological distinction from a number of other relatively similar *Phaeoacremonium* species has been summarized by Mostrel *et al.*[6] The single most distinct feature of *P. parasiticum* is the absence of constriction at the base of the phialides, which is present in *P. inflatipes*. Phialides of *P. parasiticum* are more spine-like and not constricted at their bases. Other species of *Phaeoacremonium* have broad phialides.[6] The spectrum of disease caused by *P. parasiticum* includes subcutaneous infections,[1,4] eumycetoma,[7] osteomyelitis,[8] arthritis, and disseminated diseases including fungemia and endocarditis.[4] Baddley *et al.*[4] reported two cases of *P. parasiticum*. In the first case reported, a 31-year-old woman with aplastic anemia and prolonged neutropenia, presented with persistent febrile neutropenia despite broad spectrum antibacterial therapy with vancomycin and piperacillin plus tazobactam combination. An amphotericin B preparation (5 mg/kg daily) was added to her regimen upon admission. Multiple blood cultures were obtained upon admission and grew mould. The patient remained febrile and on the 12th day after admission, cultures were obtained upon admission and grew mould. The patient died three weeks after admission, due to causes related to the heart disease.

In our case, the patient had no predisposing factors as history of organ transplantation or neutropenia, which are commonly reported to be associated with *P. parasiticum* infection.

The ideal treatment for *P. parasiticum* is not defined and the paucity of cases does not allow for meaningful comparisons of antifungal agents. Agents commonly used in reported cases include amphotericin B, azoles, terbinafine, and 5-FC. On the basis of limited susceptibility data, amphotericin B and azoles may be effective.[4] Surgical debridement appears to be an important aspect of treatment of localized *P. parasiticum* infection. Among eight reported cases of localized infection in the world literature,[4] seven had surgical intervention. Appropriate treatment is undefined but surgical debridement and use of amphotericin B and extended spectrum triazoles are reported to be associated with relatively good outcomes. In our case, the patient responded well to amphotericin B and surgical debridement.

*P. parasiticum* is found in the environment of woody plants and endophytes or as agents of plant disease. The species have also been isolated from soil. Minute trauma may cause implantation of the pathogen in the body.[6] Surprisingly, our patient did not give history of trauma, probably she might not have noticed minor trauma of the skin.

In summary, *P. parasiticum* is an uncommon cause of fungal infection and its appropriate identification may be difficult. High index of suspicion is required to diagnose the case, so that early treatment can be given to prevent complications, especially among immunocompromised individuals.

**References**

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BILATERAL BREAST ABSCESS: A RARE COMPLICATION OF ENTERIC FEVER

Breast abscess is usually caused by Staphylococcus aureus in pregnant or lactating females. Salmonella spp. is occasionally associated with abscess formation in various organs, but breast abscess is a very rare complication. In enteric fever dissemination to multiple organ systems following bacteraemia can lead to localized abscess. We report a case of bilateral breast abscess due to Salmonella Typhi in an unmarried 35-year-old female without any predisposing conditions. She presented with fever and painful swelling of both the breasts. S. typhi was isolated from both breasts. Such rare cause must be suspected in females without any evident predisposing factors for effective management.

Key words: Breast abscess, complication, enteric fever

Salmonella Typhi is commonly identified as a gastrointestinal pathogen causing septicaemia resulting in enteric fever. This is a multisystem disease with generalized manifestations.[1] Localized pyogenic complications may occur occasionally in organs with pre-existing abnormality. Abscess involving liver, spleen, pancreas, and multiple subcutaneous and injection sites have been reported. [2] Among the known extraintestinal complications of enteric fever, breast abscess is rare.[2-6] This report presents a case of bilateral breast abscess due to S. typhi.

Case Report

An unmarried 35-year-old female was admitted to the surgical ward on 3rd December 2007 with painful swelling of both the breasts and low-grade fever since 15 days. On examination, she was febrile (temperature 101 oF). The breasts were swollen and tender with a soft ßuctuating mass (around 5 X 4 cm² and 4 X 4 cm² in left and right breasts, respectively) located at the left lower quadrant. The skin over the breast was erythematous. The nipple and areola were normal. The axillary lymph nodes were not palpable. There was no history of previous breast disease, diarrhoea, constipation, or urinary complaints. She gave a history of high-grade fever one month back followed by complete recovery after taking treatment from a general physician. Her sister, staying with her, had suffered from enteric fever six-months back. She was diabetic, on oral antidiabetics for last two years without regular follow up for sugar control. Systemic examination was unremarkable except for mild tachycardia (heart rate, 84/min).

The laboratory investigations revealed hemoglobin: 10.2g/dl and total leukocyte count: 14000/mm³ with 87% neutrophils. Her random and fasting blood sugar levels were 280 mg/dl and 190 mg/dl, respectively. Patient was admitted as a case of bilateral breast abscess. Approximately 30 ml of pus was drained after incision on both the sides (Fig. 1) and sent for bacteriological investigations. The patient was administered intravenous cefotaxime (1 gm, 8 hourly) and later switched over to oral amoxyclavulanic acid (625 mg tablet, thrice daily) with good response.

The pus was processed by standard culture methods. 1 Gram-negative bacilli were seen and S. typhi was isolated from both the breast specimen. The biochemical identiﬁcation and antibiotic sensitivity was done on mini APIR (bioMerieux). The isolate agglutinated with salmonella

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