

## Candida-septic arthritis in an immunocompetent male child: Report of a rare occurrence

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### ABSTRACT

Systemic candidiasis is usually associated with immunosuppression. Fungal arthritis due to candidal organism in an immunocompetent patient is rare. We describe one such rare occurrence in a young boy without any predisposing factors, who developed knee arthritis caused by *Candida albicans*.

**Keywords:** *Candida*, child, immunocompetent, septic arthritis

### Introduction


Septic arthritis is a relatively common disease. But those caused by fungi are rare.<sup>[1]</sup> Fungal arthritis is usually associated with predisposing conditions that reduce cellular immunity. In children also candidiasis is usually associated with immunosuppression. Candida arthritis in an immunocompetent child is rare.<sup>[2-5]</sup> We describe one such rare occurrence in an 11-year-old immunocompetent male child.

### Case Report

An 11-year-old male child presented with pain in right knee and distal thigh. He also complained of fever and inability to walk since 5 days. There was no history of injury to the site. On examination, right lower leg was in flexion at knee joint. The right knee joint was swollen and painful. The temperature over distal thigh and knee was raised. X-ray showed evidence of multifocal radiolucent lesion in the distal end of femur involving the metaphyses and epiphyses. These lesions were irregular in outline and surrounded by sclerosis. Similar lesion involves the upper end of tibia.

Magnetic resonance imaging (MRI) showed heterogeneously enhancing lesion in distal femur with involvement of metadiaphysis and extending into the epiphysis with joint effusion [Figure 1].

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A clinical diagnosis of acute osteomyelitis right distal end of femur with septic arthritis right knee was made. Right knee exploration with lavage, debridement, knee arthrotomy, and intramedullary decompression was done. Postoperatively the patient was put on intravenous ceftriaxone and amikacin. But the patient did not show much improvement. Synovial biopsy was done and sent for histopathological examination. Microscopic examination revealed synovial tissue covered by fibrinopurulent exudates containing fungal colonies comprising pseudohyphae and spores of candidal species, which were periodic acid-Schiff (PAS) positive [Figure 2]. Synovial fluid was aspirated and sent for culture studies that confirmed the presence of *Candida albicans* in the joint fluid. Treatment with amphotericin B was initiated, which was changed to fluconazole 3-weeks later.

### Discussion

Fungal arthritis is a rare condition.<sup>[2-5]</sup> It can be caused by any of the invasive types of fungi. These organisms may affect bone or joint tissue. One or more joints may be affected by fungal arthritis and most often the large weight-bearing joints, especially the knee joints are affected. Fungal infections that can cause fungal arthritis include blastomycosis, candidiasis, coccidiomycosis, cryptococcosis, histoplasmosis, and sporotrichosis. The infection sometimes occurs as a result of an infection in another organ such as the lungs and tends to involve joints slowly.

Invasive Candida infections tend to occur in patients who are immunocompromised (e.g. neutropenia and glucocorticoid



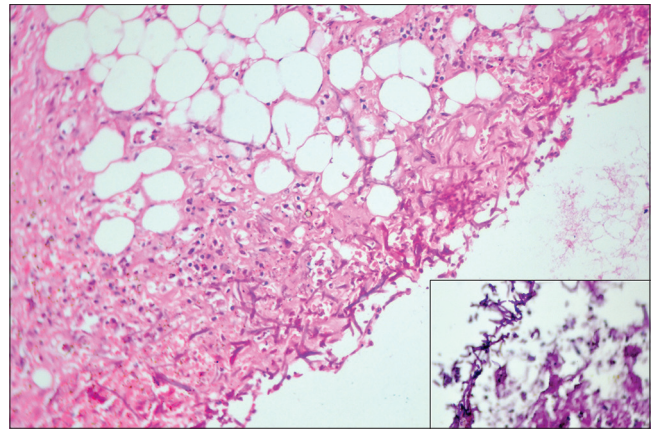
**Figure 1:** MRI showed heterogeneously enhancing lesion in distal femur, extending into the epiphysis with joint effusion. MRI = Magnetic resonance imaging

therapy). Patients who develop septic arthritis with *Candida* usually have predisposing factors such as treatment with broad spectrum antibiotics<sup>[6]</sup> or steroids,<sup>[6]</sup> immunosuppressive therapy,<sup>[6]</sup> malignancy,<sup>[6]</sup> rheumatoid arthritis,<sup>[7]</sup> joint aspiration, or arthroplasty.<sup>[8]</sup>

*C. albicans* is the most common candidal organism causing fungal arthritis. But other species such as *C. glabrata*, *C. parapsilosis*, and *C. tropicalis* can also cause arthritis.<sup>[9]</sup> Romero *et al.*,<sup>[10]</sup> described a case of *Candida*-septic arthritis of the knee in an immunocompetent patient who was not a drug abuser and who had no other predisposing factors. The signs and symptoms of *Candida*-septic arthritis differ from those of other causes of septic arthritis. Pain and swelling are present in all patients but fever, warmth, and erythema are rare in those with *Candida*-septic arthritis. The knee is more frequently involved than the hip or shoulder.<sup>[9]</sup>

The clinical diagnosis of septic arthritis due to *Candida* may be difficult because of the absence of specific signs and symptoms and the unusual nature of the organism. However, the presence of a positive culture for *Candida* in the synovial fluid should not be interpreted as a contaminant,<sup>[7,9]</sup> as this delays diagnosis and treatment.  $\beta$ -D-glucan is a constituent of fungi, and elevated plasma levels are common in patients with mycosis or fungemia. Serological kits with proven clinical application have been developed for the rapid diagnosis of mycoses.

The treatment of *Candida* arthritis has not been established. The response to fluconazole is variable. Successful treatment with amphotericin B has been more reported.



**Figure 2:** Synovial tissue covered by fibrinopurulent exudates containing fungal colonies of *C. albicans* (H and E,  $\times 40$ ), inset shows PAS-positive fungal colonies (PAS stain,  $\times 40$ ). H and E = Hematoxylin and eosin, PAS = Periodic acid-Schiff

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