Scedosporium prolificans Septic Arthritis

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Scedosporium prolificans is an emerging fungal pathogen that can cause significant morbidity, and even mortality, in both immunocompromised and immunocompetent patients. Approximately 10% of patients affected by this rare fungal pathogen present with septic osteomyelitis or arthritis. Overall, the rate of *mortality* is close to 50%, and several patients with orthopedic infections have required amputations.[1]

Our patient is a 59-year-old woman, with a history of rheumatoid arthritis requiring immunosuppressants, who presented with a 5-month history of right wrist pain and swelling. She described an oscillating course of swelling, erythema, and pain involving the dorsal aspect of her wrist that did not show sustained response to antibiotics or a radiocarpal joint steroid injection given by other providers. On initial examination, she was afebrile with dorsal wrist swelling. There was no erythema, but wrist mobility was limited. She had tenderness throughout the wrist, but no fluctuance or drainage. All initial laboratory work was normal. Right wrist X-ray showed severe osteopenia with some mild evidence of cortical erosion.

Despite the normal laboratory values, her presenting findings of swelling, radiographic erosions, and immunocompromised state prompted concern for atypical septic arthritis. The patient subsequently underwent wrist exploration for tissue and culture harvest. In addition to extensive wrist synovectomy, the proximal pole of the scaphoid, lunate, triquetrum, capitate, hamate, and metacarpal bases all showed evidence of necrosis that required debridement. One week later, her fluid aspirate and bone cultures unexpectedly grew an unidentified fungal species, and she was taken back to the operating room for further debridement and placement of a voriconazole-impregnated cement spacer.

The culture grew pan-resistant *Scedosporium prolificans*, and based on recommendations from Rheumatology and Infectious Disease, the patient was started on a 6-week course of intravenous micafungin, and immunosuppressive medications were stopped. She returned to the operating room for debridement and serial treatments with polyhexamethylene biguanide (PHMB) irrigation until intraoperative tissue cultures showed no growth. PHMB is an antiseptic medication that has been described as a local adjunct to the treatment of resistant fungal infections.[2–4] After successful eradication of her infection, she underwent wrist reconstruction and fusion with a double-barrel free fibula osteocutaneous flap. She is now 18 months out from her reconstruction, has healed uneventfully, and has a functional, painless upper extremity (►**Fig. 1**).

Fig. 1 Radiograph 5 months after reconstruction with signs of bony healing.

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Due to the rare nature of this infection, all the information and guidance for treatment comes from case reports or case series. The most comprehensive analysis of cases from the literature compiles data on 162 patients with *Scedosporium prolificans* infection.[1] The overall *mortality* for the 162 patients in the study was 46.9%; however, the vast majority of fatal infections occurred in immunocompromised patients with disseminated disease, and only 10% of patients in this series had osteomyelitis or septic arthritis. All, except one, of the patients with orthopedic infections suffered some form of previous trauma. None of these patients died, but two required amputations for cure.

This case demonstrates the high potential for morbidity associated with *Scedosporium prolificans* septic arthritis and osteomyelitis of the wrist. We describe a successful eradication of this challenging pathogen and a creative solution for reconstruction with a double-barrel free fibula osteocutaneous flap. Hand surgeons should consider this pathogen when evaluating patients for atypical infections, especially if the patient is immunocompromised. Evidence-based treatment guidelines are not currently available, but treatment should generally include adequate debridement, systemic antifungal therapy, and potentially PHMB irrigation.

Note

All identifying details were withheld to protect the privacy of our patient. Informed consent was obtained for photographs and their use for publication.

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Conflict of Interest

None.

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