



Case Report

Post-tsunami primary *Scedosporium apiospermum* osteomyelitis of the knee in an immunocompetent patient



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SUMMARY

Scedosporium apiospermum is a filamentous fungus present in soil and polluted waters that may cause infection by direct inoculation. Osteomyelitis represents a challenge both for diagnosis and treatment. We report a case of post-tsunami primary *S. apiospermum* osteomyelitis of the knee in an immunocompetent patient.

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1. Introduction

Scedosporium apiospermum is a filamentous fungus present in soil and polluted waters that may cause infections in humans.^{1,2} In immunocompetent hosts, these hyaline molds produce localized disease, such as chronic local soft tissue suppurative fungal infections known as maduromycosis (or eumycotic mycetoma, or ‘Madura foot’ after the clinical description of patients with pedal mycetoma near Madura, India), or more rarely septic arthritis/osteomyelitis after a penetrating trauma.³ Near-drowning incidents and recent natural disasters, such as the Indonesian tsunami in 2004, have shown *S. apiospermum* and *Scedosporium aurantiacum* to be the causes of fatal central nervous system infections and pneumonia in immunocompetent victims who have aspirated polluted water,⁴ as well as systemic infections in immunocompromised patients.⁵ To our knowledge, this is the first reported case of post-tsunami primary *S. apiospermum* osteomyelitis of the knee in an immunocompetent patient.

2. Case report

A 27-year-old woman was referred to our institution due to an osteomyelitis caused by *S. apiospermum*. She is a survivor of the

Indonesian tsunami of 2004. During that experience she reported a traumatic rupture of the patellar tendon, the extensor hallucis longus tendon, and the anterior tibial tendon of the left leg. A surgical suture of all three tendons and plastic revision of the skin was performed a month later. During the following 2 years she reported chronic mild pain in the left knee. X-rays of the knee showed no abnormalities. Magnetic resonance imaging (MRI) revealed signal alteration in the medial femoral condyle that seemed to be related to a post-traumatic trabecular contusion (Figure 1, a and b). The patient was followed and treated with rehabilitation.

A new MRI performed 1 year later due to persistence of symptoms showed a liquid cyst adjacent to the patellar tendon (Figure 1, c and d). A surgical excision was performed, and histological analysis showed a chronic inflammatory process; no microorganism was isolated from cultures. Thereafter she was followed annually, with MRI of the left knee showing a progressive signal alteration of bone with ovoid osteolytic areas (Figure 1, e and f).

An open surgical biopsy (2.5 years from the previous surgery) was performed and histological analysis was consistent with chronic osteomyelitis. After curettage and placement of a bioabsorbable hydroxyapatite implant (PerOssal, certified class III medical device; aap Implantate AG, Berlin, Germany) loaded with vancomycin, the patient was treated with teicoplanin 400 mg once a day for 6 weeks, taking into consideration that the most frequent bone osteomyelitis post-tsunami was caused by Gram-negative bacteria.¹ Cultures of the surgical material revealed no

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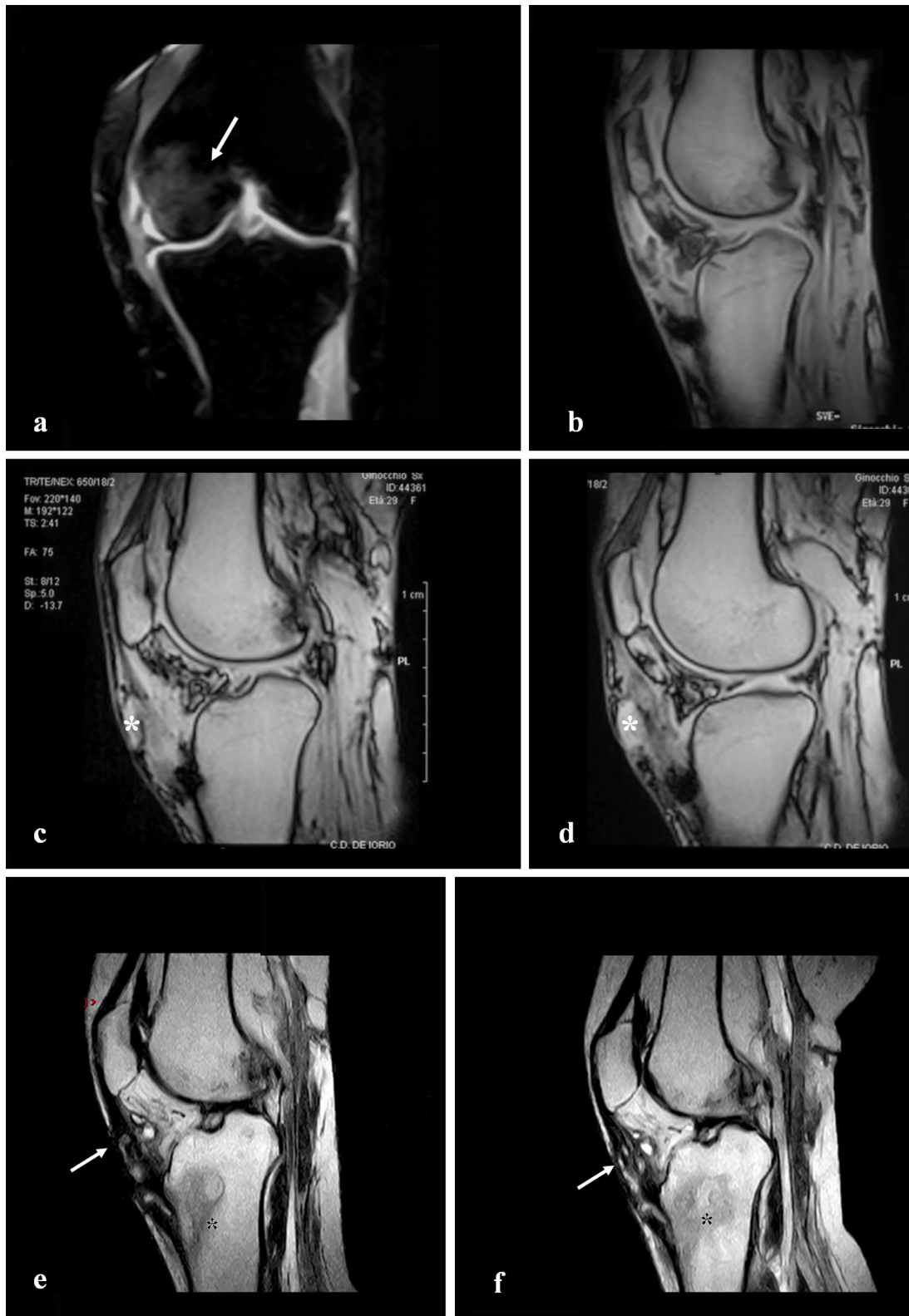


Figure 1. Initial MRI 4 months after the tsunami. Coronal T2-weighted fat-suppressed image showing a medial femoral condyle abnormality (white arrow) (a). Sagittal MRI showing aspecific abnormalities in the anterior part of the knee (b). MRI performed 1 year later showing a liquid cyst adhering to the surface of the patellar tendon (asterisk) (c and d). Sagittal MRI of the left knee performed 4 years (e) and 4.5 years (f) after the trauma showing a progressive signal alteration of the tibial cancellous bone in the meta-epiphyseal region (black asterisk) associated with an abnormal cystic lesion (grains) in the soft tissue (white arrow).

bacteria, however a fungus was recovered which was preliminarily identified as a *Scedosporium* species. Based on morphological (Figure 2) and molecular (the BT2 fragment of the beta-tubulin gene was used for clade identification, as previously reported by

Gilgado et al.²) studies, the fungus was typed as *S. apiospermum* (clade 4).²

In vitro susceptibility testing of the strain was performed following the Clinical and Laboratory Standards Institute (CLSI;

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