Sporotrichosis as an emerging disease in osteomyelitis

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Objectives: Inform the general practitioner and orthopedists of the possibilities of bone infections secondary to sporotrichosis unrelated to the classic finding of contiguous lymphocutaneous ulcers.

Methods: This is a single-center, cross-sectional, retrospective study with patients evaluated and seen from June 2018 to April 2022 at the Mycology Outpatient Clinic of Hospital Universitário Oswaldo Cruz, University of Pernambuco.

All patients were evaluated by the same infectious disease physician throughout the course, from diagnosis to outpatient discharge.

Scrapings and cultures were collected by the institution’s specialized Mycology team. Biopsies were sent to the University Pathology Service (CIAP).

Results: Sporotrichosis is a progressively growing endemic disease in the Northeast region of Brazil. The two main forms of contagion have been through feline scratches (all cases in this study) or through contact with contaminated soil. Infections may be restricted to just one bone (contiguous infection) or may affect several without the need for contiguity (hematogenous spread). Reviewing the literature (PubMed), only 25 cases were described in the literature in the most diverse countries and with different treatments, the vast majority evolving with amputation of the affected bone. Current guidelines do not propose a specific treatment for osteomyelitis, confining themselves to evaluating case by case and without proposals for treatment completion.

During the 4-year period, 231 patients started their treatment for sporotrichosis following clinical, laboratory, and histopathological criteria. Of these, 12 had osteomyelitis (5.2%), and 3 had more than one bone affected.
Biopsy (1) and cultures (6) were the most used methods for diagnosis. The remaining cases (5) were diagnosed by scraping the sick cat and visualization of spores suggestive of Sporothrix or by epidemiological data involving a cat with lesions suggestive of scratching the affected patient.

We used amphotericin B lipid complex 5 mg/kg/day for 4 weeks as induction treatment and itraconazole for maintenance at a dose of 400 mg/day. For patients with more than one bone affected, we performed control with FDG PET SCAN to define cure (SUV ≤ 5.0). Interestingly, all patients had no reaction to the tuberculin skin test (Mantoux), suggesting a deficiency in the Th1 response, but we do not know whether this was the cause or consequence of the invasive fungal infection.

Conclusion: Sporotrichosis osteomyelitis may be much more common than reported in the literature. Sporotrichosis may have a higher bone tropism compared to other species. This is the largest series described in the literature of a single-center reporting 12 cases and the only one with no amputation of the affected bones. Treatment with lipid complex amphotericin (Abelcet) for 4 weeks added to the prolonged use of itraconazole for 6-12 months may have impacted the result since this amphotericin formulation is described in the literature as having greater bone penetration than the others.

Nuclear medicine (FDG PET SCAN and Gallium CTG) has a key role in diagnosis and definition of cure.