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Scedosporium apiospermum EUMYCETOMA SUCCESSFULLY TREATED WITH ORAL VORICONAZOLE: REPORT OF A CASE AND REVIEW OF THE BRAZILIAN REPORTS ON SCEDOSPORIOSIS

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SUMMARY

We describe a case of white-grain eumycetoma caused by *Scedosporium apiospermum* in an immunocompetent host that was successfully treated with oral voriconazole, and we review the Brazilian reports on scedosporiosis.

KEYWORDS: *Scedosporium apiospermum*; *Pseudallescheria boydii*; Scedosporiosis; Eumycetoma, Voriconazole.

INTRODUCTION

The asexual state of the ascomycete *Scedosporium apiospermum* (previously known as *Monosporium apiospermum*) and its sexual state, *Pseudallescheria apiosperma* (previously *Allescheria boydii, Petriellidium boydii* and *Pseudallescheria boydii*), are ubiquitous saprobic fungi commonly found in temperate climates, and have been recovered from water, sewage, soil, swamps, and manure[2,4]. Both sexual forms are frequently seen in human infections (scedosporiosis), both as the cause of systemic disease in immunocompromised patients and eumycetoma in immunocompetent patients[2].

Eumycetoma is a chronic progressive granulomatous infection of the subcutaneous tissue. It may affect muscles, bones, cartilage and joints, most often affecting the lower extremities, usually the foot. The disease is caused by either fungi or bacteria, giving rise to eumycetomas and actinomycetomas, respectively. It has a classic triad of soft tissue swelling, draining sinus tracts, and extrusion of grains. The term mycetoma can also be found in literature incorrectly referring to a fungus ball[21].

We describe a case of white-grain eumycetoma caused by *S. apiospermum* in an immunocompetent host that was successfully treated with oral voriconazole, and we review the Brazilian reports on scedosporiosis.

CLINICAL CASE

A 58-year-old woman from rural southern Brazil presented with a 1-year history of progressive pain and swelling of the left foot. She had injured her foot before while handling a milch cow. Physical examination revealed a tumor-like process of the foot that had several draining sinus tracts (Fig. 1). Foot plain radiography showed widening of joint spaces, periostial reaction, bone destruction, erosive changes and demineralization (Fig. 2). An incisional skin biopsy was taken from the foot over opening draining sinuses. Haematoxilin and eosin stain demonstrated a granulomatous response on the dermis and subcutaneous tissue containing localized abscesses with spherical white-grain eumycetoma. Culture of a sample of the biopsy on Sabouraud glucose agar revealed fungal growth identified as *S. apiospermum*.

Fig. 1 - Swelling at the left foot that discharge grains through sinus tracts.

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Fig. 2 - Standard X-ray shows a swelling of the soft tissue periosteal reaction and osteolytic lesions.

Treatment and evolution. She failed to respond to itraconazole (200 mg/day) in two years of regular use of the drug, and the disease showed clinical evidence of progression. The patient refused surgical resection of the limb. Therapy with oral voriconazole at a dose of 200 mg twice per day was initiated, showing clinical improvement and good tolerance. At follow-up, three years later, her clinical signs had been completely resolved and foot plain radiography demonstrated partial regression of periostial reaction and bone sclerosis that suggested response to treatment (Fig. 3).

Fig. 3 - Foot plain radiography demonstrating partial regression of periosteal reaction and bone sclerosis three years after voriconazole treatment.

Table 1
Demographic characteristics, clinical data, diagnosis, treatment, and outcome for 15 patients with scedosporiosis in Brazil from 1982

Case (Ref.)	Age/Gender	Diagnostic specimen	Associated diseases	Type of infection	Treatment/Outcome
1 (17)	65/M	Lung tissue	Active tuberculosis	Lung fungus ball	None/ Death
2 (3)	38/M	Soft tissue	None	Mycetoma-like infection	None/ Improved
3 (8)	Not done	Lung and brain tissue	Leukemia	Brain and lung abcesses	None/ Death
4 (9)	45/M	Soft tissue	Diabetes and renal transplant recipient	Subcutaneous nodule	Surgical resection and Itraconazole/Cure
5	73/F	Soft tissue	Breast carcinoma	Subcutaneous ulcerated lesion	None/death
6 (18)	66/F	Soft tissue	None	Subcutaneous nodule	Itraconazole/Cure
7 (11)	40/M	Maxillary sinus tissue	Bone marrow transplantation	Sinusitis	Amphotericin B, itraconazole/ Death
8 (19)	41/F	Lung tissue	Cured tuberculosis, Diabetes	Lung fungus ball	Ketoconazole/Death
9 (20)	12/M	Peritoneal effusion	End stage renal disease	Peritonitis	None/Improved
10	45/M	Lung tissue	Cured tuberculosis	Lung fungus ball	Surgery/Cure
11	36/F	Lung tissue	diabetes	Lung fungus ball	Surgery/Cure
12	57/F	Lung tissue	Cured tuberculosis	Lung fungus ball	Surgery/Cure
13 (21)	66/M	Maxillary sinus tissue	None	Maxillary sinus fungus ball	Surgery/Cure
14 (5)	32/M	Spinal fluid	Near drowning	Central nervous system	Fluconazole, amphotericin B/ Death
15	58/F	Soft tissue	None	Eumycetoma	Itraconazole, Voriconazole/Cure

DISCUSSION

S. apiospermum causes infections in both immunocompetent and immunosuppressed individuals. This fungus is commonly associated with eumycetoma but infections in other sites have continued to be reported and consequently their clinical spectrum has been considerably enlarged[4].

Scedosporiosis is reported infrequently. In Brazil, twenty-four cases of the infection were found described in the available literature. MAGALHÃES[12] (RJ) and LINHARES[7] (RJ) each described separately the first case of *S. apiospermum* infection in 1916 and 1917. In 1980, ROCHA *et al.*[16] reported one case of eumycetoma and reviewed the nine similar previous cases and PURCHIO *et al.*[14] reported another case of eumycetoma. All cases reported before 1982 were from subcutaneous infection of immunocompetent hosts which presented as eumycetoma. Table 1 is up to date with the Brazilian literature on scedosporiosis. As shown in the table, the most frequent clinical manifestation of scedosporiosis was fungus ball, especially from cured pulmonary tuberculosis patients (Cases 8, 10, 12). The second clinical presentation was localized invasive infection from immunosuppressed patients (Cases 3, 5, 7). For the first time a central nervous system infection, secondary to near drowning, is reported in Brazil (Case 14).

Before the development of new drugs[2] more effective against *S. apiospermum*, the most successful approach to the control of eumycetoma was surgical, usually amputation[15]. The correct diagnosis of white-grain eumycetoma is important because *S. apiospermum* is resistant to a variety of commonly used antimycotic agents. To our knowledge, this is the second case of *S. apiospermum* eumycetoma successfully treated with voriconazole[13]. This drug has been used in a few cases of eumycetoma[1,6,10], and although expensive it should be considered a first-line antifungal agent for the treatment of eumycetoma caused by *S. apiospermum*. The dose required and the duration of the course for optimum therapy should be investigated.

RESUMO

Eumicetoma por *Scedosporium apiospermum* tratado com sucesso com voriconazol oral: relato de um caso e revisão da literatura brasileira sobre scedosporiose

Relatamos um caso de eumicetoma por grão branco causado por *Scedosporium apiospermum* em um hospedeiro imunocompetente que foi tratado com voriconazol oral e revisamos a literatura brasileira sobre scedosporiose.

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