Rev. Inst. Med. trop. São Paulo
37 (3): 267-270, maio/junho, 1995.

SUBCUTANEOUS HYALOHYPHOMYCOSIS CAUSED BY *ACREMONIUM RECIFEI*: CASE REPORT

Clarisse ZAITZ (1), Edward PORTO (2), Elisabeth Maria HEINS-VACCARI(2), Aya SADAHIRO (2), Ligia Rangel Barbosa RUIZ (1), Helena MÜLLER (1) & Carlos da Silva LACAZ (2)

SUMMARY

We present a case of subcutaneous hyalohyphomycosis due to *Acremonium recifei*, a species whose habitat is probably the soil, first identified in 1934 by Arêa Leão and Lobo in a case of podal eumycetoma with white-yellowish grains and initially named *Cephalosporium recifei*.

A white immunocompetent female patient from the state of Bahia, Brazil, with a history of traumatic injury to the right hand is reported. The lesion was painless, with edema, inflammation and the presence of fistulae. Seropurulent secretion with the absence of grains was present. Histopathological examination of material stained with hematoxylin-eosin showed hyaline septate hyphae. A culture was positive for *Acremonium recifei*. Treatment with itraconazole, 200 mg/day, for two months led to a favorable course and cure of the process.

We report for the first time in the literature a case of subcutaneous hyalohyphomycosis due to *Acremonium recifei* in a immunocompetent woman. Treatment with itraconazole 200 mg/day, for two months, resulted in cure.

KEYWORDS: . Subcutaneous hyalohyphomycosis, *Acremonium recifei*, Itraconazol.

INTRODUCTION

Acremonium recifei was first isolated and identified in 1934 by ARÊA LEÃO & LOBO [3] from a patient from the city of Recife (State of Pernambuco) with white-grain eumycetoma. The organism was first named *Cephalosporium recifei*. In 1971, GAMS [10] switched all the species of the genus *Cephalosporium* to the genus *Acremonium*. In 1943, BARBOSA [4] proposed a revival of the genus *Hyalopus* Corda, 1838 to replace *Cephalosporium*, but this idea was not accepted by taxonomists. In Medical Mycology textbooks, three species of *Acremonium* are considered to be truly pathogenic: *Acremonium falciforme*, *A. recifei*, and *A. kiliense*. MCGINNIS [17] (1980) added *A. potronii* Vullemin, 1910 and *A. roseo-griseum* Gams, 1971. *Cephalosporium serrae* Maffei, 1930 was considered by MCGINNIS [17] (1980) to be the same as *Verticillum serrae*, previously isolated from a patient with eumycetoma in Venezuela by ALBORNOZ [1] (1974). FINCHER et al [9]. (1991) also mention *Acremonium strictum* and *A. alabamensis*, respectively isolated from a patient with pulmonary lesions and affected by a chronic granulomatous disease and from brain lesions of a drug abuser.

(1) Discipline of Dermatology, Department of Medicine, Faculty of Medical Sciences, "Santa Casa" of São Paulo, São Paulo, SP, Brazil
(2) Laboratory of Medical Mycology, Institute of Tropical Medicine of São Paulo and LIM-53 HC, Faculty of Medicine, University of São Paulo, São Paulo, SP, Brazil.
Correspondence to: Dr. Zaitz, R. Tabapuã 1666, apto. 102, 04533-005 São Paulo, SP, Brazil.

Acremonium recifei has also been isolated in India from a patient with white-grain eumycetoma (KOSHI et al [11]., 1979). DROUHET et al [8]. (1965) detected meningocerebral localization of *Acremonium sp.* in a patient with fatal outcome. On the basis of the micromorphologic aspect of a culture slide, we believe this to be *Acremonium kiliense*. BOLTANSKY et al [5]. (1984) reported pulmonary infection caused by *Acremonium strictum* in a patient with chronic granulomatous disease. COWEN et al [7]. (1965) reported cases of mediofacial granuloma caused by *Acremonium sp*, with maxillary, mandibular and palate lesions which were treated with good results using allergens of several fungi, including *Cladosporium sp.*

In the present paper we report a case of hyalohyphomycosis caused by *Acremonium recifei*. To our knowledge, this is the first report of this kind in the literature.

CASE REPORT

A 75-year-old immunocompetent white female patient from the State of Bahia reported a history of traumatic injury to the back of her right hand 3 months before. The lesion was painless, with edema, inflammation and the presence of fistulae (Fig. 1). Secretion consisted of a seropurulent exudate with absence of grains and negative for grains, bacteria or fungi. Histopathological examination of material stained with hematoxylin-eosin showed hyaline septate hyphae and infiltrate composed of histiocytes, plasma cells, lymphocytes and rare epithelioid cells (Fig. 2).

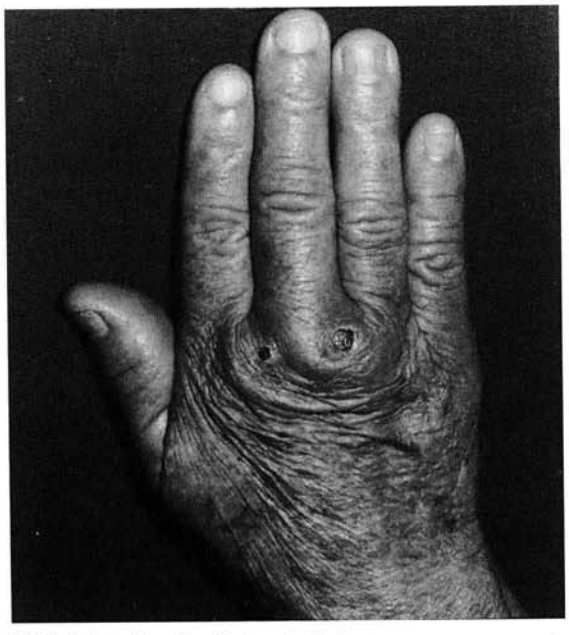

Fig. 1 - Subcutaneous hand lesion of a fistulous nature.

Culture for fungi revealed the slow growth of a colony, and pulverulent samples that were white on one side and violet on the opposite side were isolated three consecutive times. Microscopic examination of the culture showed septate, hyaline mycelium with long conidiophores and nonseptate curved conidia.

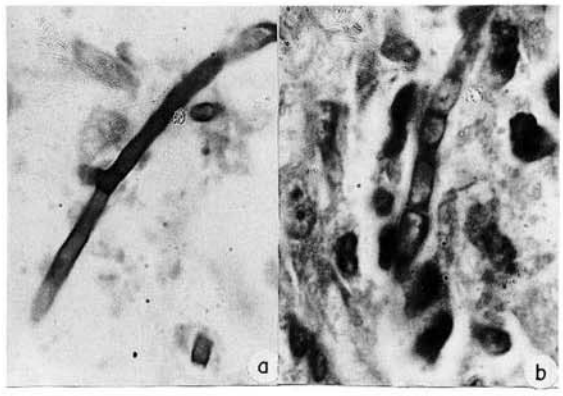

Fig. 2 - Histological sections of hyalohyphomycosis caused by *Acremonium recifei*. a, Material submitted to hematoxylin-eosin staining. A long, septate hypha and two yeast-like cells can be seen (x500). b, Basophilic hypha with several septa stained with hematoxylin-eosin and infiltrate composed of histiocytes, plasma cells, lymphocytes and rare epithelioid cells (x500).

A diagnosis of infection by *Acremonium recifei* was made (Fig. 3). The patient was treated with 200 mg/day itraconazole, with involution of lesions and cure occurring after 2 months.

COMMENT

The three species of *Acremonium* of greatest medical interest are *Acremonium falciforme* (CARRION [6], 1951) GAMS [10] (1971), *A. recifei* (ARÊA LEÃO & LOBO [3], 1934) GAMS [10] (1971), and *A. kiliense* Grutz, 1925. According to GAMS [10] (1971) and RIPPON [19] (1988), these three species are distinguished on the basis of their phialoconidia.

Acremonium falciforme (CARRION [6], 1951) has been isolated from several cases of white-grain eumycetoma (ALMEIDA et al [2]., 1948; MARTINS et al [16]., 1968; LACAZ & FAVA NETO [13], 1949; ZAITZ et al [22].,

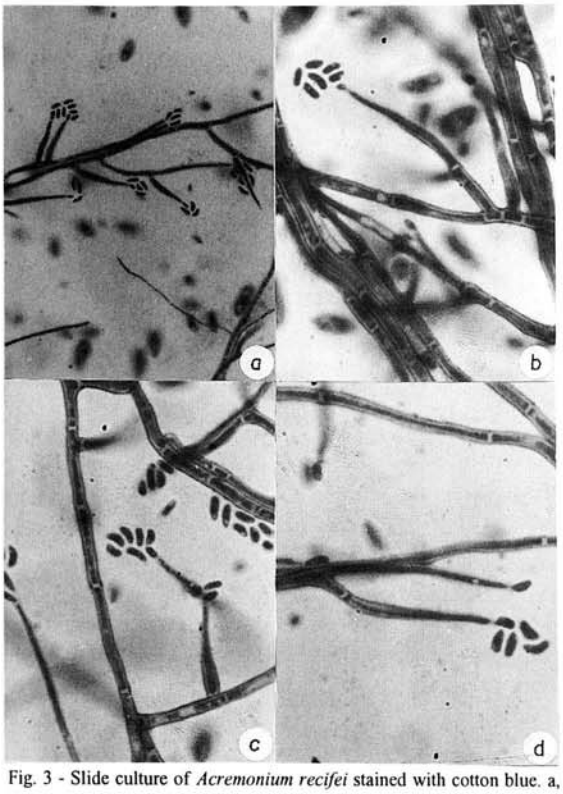

Fig. 3 - Slide culture of *Acremonium recifei* stained with cotton blue. a, Vegetative hyphae with single or branched hyaline conidiophores presenting typically joined conidia on their apices (x250). b, c, d, Vegetative septate hyphae and septate hyaline conidiophores wide at the base and tapering at the apex with curved, nonseptate hyaline conidia joined together by a mucilaginous exudate (x500 and x630).

1988) and from one case of cutaneous acremoniasis (TEDESCO-MARCHESE et al [20]., 1987). According to MACKINNON [18] (1951), the cases reported by ALMEIDA et al. [2] (1948) and MARTINS et al [16]. (1968) are of *Acremonium falciforme*, initially identified as *Cephalosporium sp.*

Acremonium kiliense Grütz 1925 has been isolated from cases of white-grain eumycetoma (LACAZ et al [15]., 1979) under the name of endocarditis *Cephalosporium acremonium*, from a dura mater prosthesis (LACAZ et al [14]., 1981).

Acremonium recifei (ARÊA LEÃO & LOBO [3], 1934) GAMS [10], 1971 has been cultured from cases of white-grain eumycetoma (ARÊA LEÃO & LOBO [3], 1934; KOSHI et al [11]., 1979).

A. falciforme produces hyaline, curved conidia that are sometimes septate (bicellular). *A. kiliense* forms straight, nonseptate hyaline conidia at the end of conidiophores that are kept together by a mucilaginous substance. *A. recifei* has hyaline, septate, curved, sickle-shaped conidia with wider ends.

The case reported here is the first in the literature showing hyalohyphomycotic lesions produced by this deuteromycete.

Particularly interesting is the fact that the process was cured with the use of itraconazole, which was based on the results obtained *in vitro* by FINCHER et al. [9] (1991) in a study of 7 *Acremonium* strains. A fungus of the genus *Acremonium* was isolated from nodules of subcutaneous cell tissue of the forearm of a renal transplant recipient (FINCHER et al [9]., 1991), and from a finger nodule of a patient with myeloblastic leukemia (VAN ETTA et al [21]., 1983).

These fungi are frequently isolated from soil, from plant debris, and are also responsible for cases of keratitis, onychomycosis and other infections. Colonies cultured at room temperature on agar-Sabouraud present a membranous aspect and are cream or ivory colored. Culture on slides reveals septate vegetative hyphae from which isolated or branched conidiophores are born. These are often septate, long, with tapered apices and give origin to hyaline, septate or not, curved or straight conidia (phialoconidia).

The three species are thus differentiated as mentioned earlier. According to KWON-CHUNG & BENNETT [12] (1992), other species of *Acremonium* have been isolated as opportunistic agents from several clinical cases: *A. alabamensis* from a drug abuser, *A. roseogriseum* from patients with onychomycosis and arthritis, and *A. strictum* from a patient with pneumonia and with chronic granulomatous disease.

RESUMO

Hialo-hifomicose subcutânea por *Acremonium recifei*. Registro de um caso

Os autores registram caso de hialo-hifomicose subcutânea por *Acremonium recifei* em paciente branca, imunocompetente, natural da Bahia, com história de traumatismo no dorso da mão direita. A lesão era indolor, com edema, inflamação, presença de fístulas, secreção seropurulenta, e ausência de grãos. O exame histopatológico mostrou hifas septadas hialinas pela hematoxilina-eosina. Cultura positiva para

Acremonium recifei, espécie identificada em 1934, pela primeira vez, por Arêa Leão & Lobo, com o nome de *Cephalosporium recifei*, de um caso de eumicetoma podal por grãos branco-amarelados. Tratamento com itraconazol, 200 mg ao dia, com evolução favorável e cura do processo.

No Brasil, trata-se do primeiro registro de hialohifomicose provocado por esta espécie, cujo habitat deve ser o solo.

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Recebido para publicação em 25/10/1994.
Aceito para publicação em 02/05/1995.