

Disseminated cutaneous sporotrichosis in a patient with AIDS: Report of a case

Esporotricose cutânea disseminada em paciente
com AIDS: Relato de um caso

Miriam Tomoko Mitsuno Carvalho¹, Adriana Pinheiro de Castro¹, Cristiane Baby¹,
Betina Werner², José Filus Neto² and Flávio Queiroz-Telles¹

Abstract We describe a case report of disseminated cutaneous sporotrichosis as the initial presentation of AIDS in a 24-year-old HIV-positive male patient. He presented multiple ulcerated skin lesions distributed over the face, thorax, legs and arms. Biopsy of one of the cutaneous lesions was suggestive of sporotrichosis and culture isolated *Sporothrix schenckii*. Itraconazole was started and the lesions progressively resolved after 15 days of medication. The patient was discharged with this medication but he did not return for follow-up. He died three months later in another hospital. Therapy of sporotrichosis in HIV-infected patients remains unclear and the response to therapy is variable. Itraconazole is highly concentrated in the skin and is one of the options for treatment of disseminated sporotrichosis.

Key-words: Sporotrichosis. AIDS. *Sporothrix schenckii*. Itraconazole.

Resumo Descrevemos um relato de caso de esporotricose cutânea disseminada como apresentação inicial de AIDS em um paciente masculino de 24 anos HIV positivo. Ele apresentava múltiplas lesões cutâneas ulceradas, distribuídas na face, tórax, pernas e braços. A biopsia de uma das lesões cutâneas foi sugestiva de esporotricose e a cultura revelou *Sporothrix schenckii*. Foi iniciado o tratamento com itraconazol e as lesões progressivamente involuíram depois de 15 dias de medicação. O paciente teve alta com tratamento ambulatorial, mas não retornou para seguimento. Ele morreu três meses depois em outro hospital. O tratamento da esporotricose em pacientes HIV positivos ainda não está estabelecido. Por sua boa penetração cutânea, o itraconazol é uma das melhores opções para formas disseminadas de esporotricose.

Palavras-chaves: Esporotricose. SIDA. *Spotothrix schenckii*. Itraconazol.

Sporotrichosis is caused by *Sporothrix schenckii*, a saprobic dimorphic fungus found in soil, vegetation, rotting wood, animal excreta and sphagnum moss. It has a worldwide distribution, but it is found mainly in temperate and tropical areas. Some occupations can predispose individuals to infection, such as gardening, masonry and floral work¹⁰.

The infection is usually limited to the cutaneous and subcutaneous tissues most frequently as a consequence of a traumatic implantation of the etiologic agent onto the skin^{2 10 13}. Occasionally, inhalation of conidia may occur and cause pulmonary and disseminated infection^{2 5 7}.

The most common clinical presentation of sporotrichosis is lymphocutaneous (Table 1), where a primary lesion develops at the site of inoculation and

may progress with nodular lesions along the lymphatic distribution proximal to the initial lesion^{2 7 10 13}. Males and females, usually under 30 years of age, are equally affected¹⁰. The clinical manifestations and radiographic findings of pulmonary sporotrichosis are similar to those of pulmonary tuberculosis and affects middle-aged men generally with chronic obstructive pulmonary disease and alcoholism⁷.

Immunologically intact patients may have hematogenous dissemination and develop osteoarticular lesions¹⁰. However, immunosuppression such as alcoholism, diabetes, chronic obstructive pulmonary disease, malignancies, transplantation, corticosteroid therapy and those infected with HIV increases the probability of disseminated disease^{1 10}.

1. Infectious Diseases Division. 2. Medical Pathology Division of Hospital de Clínicas of Federal University of Paraná, Curitiba, PR, Brazil.
Address to: Dr. Flavio de Queiroz Telles Filho. R. Capitão Souza Franco 529/07. 80730-420 Curitiba, PR. Brazil
e-mail: queiroz.telles@netpar.com.br
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Table 1 - Clinical forms of sporotrichosis.

Forms	Manifestations
Cutaneous	Fixed (verrucous, ulcerated, plaque like, disseminated, others)
Lymphocutaneous	Ascendant, abscessed lymphangitis
Extracutaneous	Pulmonary
	Osteoarticular
	Neurologic
	Disseminated

Fungal infections are among the most common infectious complications in HIV-infected patients¹³, however, disseminated sporotrichosis rarely occurs⁵. The dissemination generally affects skin but other organs such as joints, lung, liver, spleen, intestine and meninges

can also be involved in HIV-patients⁶. Research for dissemination must be considered in HIV-patients with lymphocutaneous sporotrichosis.

This article presents a case report of disseminated cutaneous sporotrichosis as the initial presentation of AIDS.

CASE REPORT

A 24-year-old male, gardener, presented at our service, in November 2000, for evaluation of multiple cutaneous lesions of three months duration, which initially involved the left leg, and spread to face, thorax and arms. Ten days prior to the presentation he had been admitted to another hospital for evaluation of fever and jaundice, and also during this admission HIV infection had been diagnosed. He had a history of syphilis, heavy consumption of alcohol and intravenous drug use.

Physical examination revealed multiple ulcerated painful lesions of many sizes, with raised, indurated margins, and a yellow fetid secretion, distributed over the face, thorax, arms and legs (Figure 1). The results of laboratory investigations included positive Anti-HCV, negative serologic tests for hepatitis A, B, leptospirosis and syphilis, normal serum transaminase activities, bilirubin and creatinine, alkaline phosphatase 175U/L, hemoglobin 10.4 mg/dl, hematocrit 30.5%, white blood cell count 7500 cells/mm³ and 16% band forms, CD4 count 62 cells/mm³. He had a normal radiography of the

thorax and as the patient did not present with any other evidence of disease no further investigation was performed.

The secondary bacterial infection was treated with cefazolin and amikacin. A biopsy of one of the lesions of the right anterior trunk was performed and revealed numerous oval and cigar-shaped conidia, suggesting sporotrichosis (Figure 2). A few days later, culture of the skin biopsy isolated *Sporothrix schenckii*. Itraconazole was started (200mg daily) and the skin lesions progressively resolved after 15 days of medication.

Therapy with zidovudine, didanosine and indinavir was started and also prophylaxis for pulmonary pneumocystosis with thrimethoprim-sulphamethoxazole. The patient was discharged with these medications and although instructed to return for follow-up he did not. Three months later, the patient was admitted to another hospital with multiple organ failure, acute respiratory failure, cardiac arrest and death. No autopsy examination was performed.

DISCUSSION

Since 1983, 43 cases of cutaneous sporotrichosis have already been diagnosed by culture at the Laboratory of Mycology from Hospital de Clínicas in Curitiba, however this was the first case of association with AIDS.

Although HIV-infected patients may develop potentially life-threatening disseminated fungal infections, sporotrichosis is encountered relatively infrequently¹² and is very difficult to eradicate with the applied treatment^{5 8 9}.

To date, a number of cases with various clinical presentations have been reported, with predominance of disseminated cutaneous forms similar to this case. Al-Tawfiq et al reviewed the reported cases until 1997 and found 17 cases of Sporotrichosis occurring in HIV-infected patients. All of them presented with diffuse ulcerated skin lesions, involvement of the CNS in four cases, ocular involvement in two cases, articulations in

four cases, spleen in one case, sinusitis in one case and bone marrow in one case¹. Since 1997, four cases have been reported, all of them with disseminated cutaneous involvement^{3 4 11 12} and two of them with osteoarticular involvement^{3 12}(Table 2).

In this case, considering that the patient was a gardener, it is possible that he was infected by accidental inoculation of the fungus as usually occurs. On the other hand our patient did not present pulmonary involvement and the hematogenous dissemination was not really explained.

Because the clinical features of sporotrichosis in patients with AIDS may be very different from those seen in immunocompetent hosts, biopsy and culture of skin lesions should always be performed in order to make an early diagnosis and initiate appropriate treatment¹². Differential diagnosis of lymphocutaneous form of



Figure 1 - Disseminated cutaneous sporotrichosis in AIDS patient.

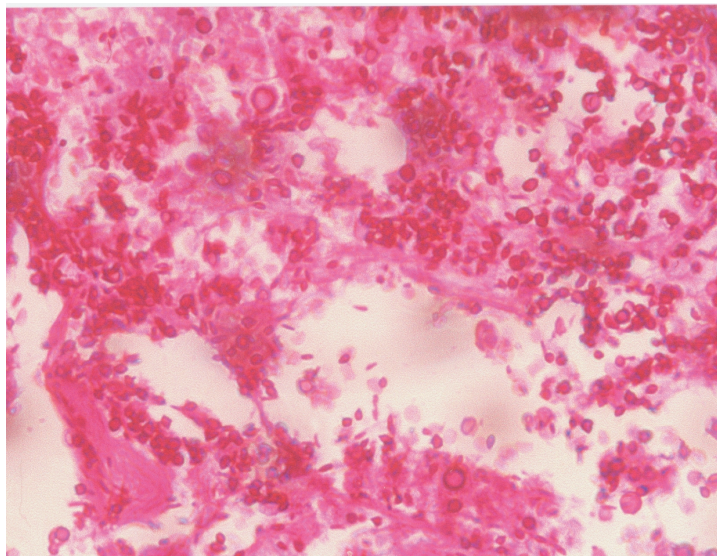


Figure 2 - Skin section. Several round to elongated yeast Sporothrix schenckii yeast cells. PAS, X 1,000.

Table 2 - Summary of data from reported cases of sporotrichosis in HIV-infected patients

Clinical presentation	age/sex	CD4(cells/mm ³)	Initial culture positive sites	Initial therapy	Outcome	Ref
skin lesions, arthritis	34/M	NR	skin, synovial fluid	AmB+5-FC	ag. isolated at autopsy	6
skin lesions	31/M	58	none	Itra	complete response	6
skin lesions, arthritis, cough	71/F	140	skin	AmB	complete response	6
skin lesions, uveitis	30/M	NR	skin	AmB	progression	6
skin lesions	43/M	NR	Skin, sputum	AmB	partial response	6
skin lesions, arthritis	30/M	NR	Skin, synovial fluid	SSKI	partial response	6
skin lesions	49/M	11	skin, sputum, blood, BM	AmB+5-FC	progression, death	6
skin lesions	41/M	NR	skin	AmB	response after initial relapse	6
skin lesions	38/M	NR	synovial fluid	Itra	complete response	6
skin lesions	43/M	56	skin,	AmB	death	6
skin lesions	22/M	17	skin,	Flu	death	6
skin lesions	30/M	63	skin, sputum	Ket	death	6
skin lesions, cough	37/M	345	sputum	NR	NR	6
skin lesions, sinusitis	49/M	19	sinus biopsy	Itra	complete response	6
skin lesions	32/M	10	skin,	AmB	death	6
skin lesions	33/M	NR	skin, lymph node	NR	NR	6
skin lesions	47/M	9	skin, blood	AmB+Itra	complete response	6
skin lesions, arthritis	42/M	10	synovial fluid,	AmB+Itra	recurrence with discontinuation	8
skin lesions	34/F	104	blood			
skin lesions	30/M	81	skin	AmB+Itra	death	10
skin lesions	30/M	81	skin	AmB	complete response	11
skin lesions, arthritis	43/M	NR	skin, synovial fluid, blood	AmB	complete response	12
skin lesions	24/M	62	skin	Itra	complete response	Present report

Note: AmB = amphotericin B, Itra = itraconazole, Flu = fluconazole, Ket = ketoconazole, NR = not reported, SSKI = saturated solution of potassium iodide, 5-FC = 5-fluorocytosine, BM = bone marrow

sporotrichosis include fungal diseases (paracoccidioidomycosis, chromoblastomycosis), mycobacterial infections, syphilis, nocardiosis, and non-infectious diseases as basocellular carcinoma and sarcoidosis⁷.

The histopathologic findings of sporotrichosis in HIV-patients are also unusual, because the inflammatory reaction is reduced and the number of microorganisms may be very large¹². *S. schenckii* is difficult to detect in histologic sections from immunocompetent patients and cultures are more likely to establish the diagnosis³. The biopsy of this patient revealed a great number of oval, cigar-shaped yeasts, consistent with *S. schenckii*^{4,5,7}, which contributed to establish the diagnosis which was confirmed by culture.

Therapy for sporotrichosis in immunocompetent hosts is well established. Itraconazole is the drug of choice for cutaneous, lymphocutaneous and osteoarticular sporotrichosis. While amphotericin B is required for severe pulmonary infection and disseminated sporotrichosis⁹. On the other hand, therapy for disseminated sporotrichosis in HIV-infected patients

remains unclear and the response to therapy is variable¹. The classic therapy with potassium iodine, successfully used to treat the cutaneous and lymphocutaneous forms in immunocompetent patients is not recommended for use in HIV-infected patients or other conditions associated with immunodeficiency¹¹.

On the basis of the favorable response in cases reported, amphotericin B and itraconazole seem to be reasonable choices for initial therapy of sporotrichosis in HIV-patients¹. Amphotericin B has been the treatment of choice for disseminated disease, however its dose is limited by nephrotoxicity and it is being replaced by the use of azole antifungal agents^{8,12}. Itraconazole is highly concentrated in the skin and is generally more effective in the treatment of cutaneous fungal infections than fluconazole¹². Itraconazole was used as initial therapy in 3 of 21 cases reported, and the response was optimal¹. The cutaneous lesions from the present case had a good response to itraconazole. Therapeutic failures have been described in association with potassium iodine, fluconazole and ketoconazole¹.

Liposomal amphotericin B has been recently used for fungal infections when there is any kind of intolerance to the conventional amphotericin B¹¹. Neto et al had good results with this drug in the treatment of disseminated cutaneous sporotrichosis associated with AIDS¹¹. Ware et al also used liposomal amphotericin B resulting in progressive resolution of the cutaneous lesions but with recurrence of the lesions after discontinuation of amphotericin and despite oral administration of itraconazole, fluconazole and terbinafine¹².

For patients who have both HIV infection and sporotrichosis, lifelong maintenance therapy is

recommended and itraconazole is the drug of choice^{17,8}. Five patients receiving itraconazole had no evidence of recurrence of the lesions after 9-12 months¹. Maintenance therapy with fluconazole for previous cryptococcal meningitis was not sufficient to avoid sporotrichosis in a patient with AIDS, and Goldani et al suggest that the therapeutic failure associated with itraconazole could be explained by a possible cross-resistance to azoles⁴. In the present case, it was not possible to evaluate the response to the maintenance therapy with itraconazole since the patient failed to return for follow-up and died due to unconfirmed causes.

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