



Cutaneous and meningeal sporotrichosis in a HIV patient

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Summary

A male patient with HIV and past history of tuberculosis and suspected neurotoxoplasmosis was admitted to the hospital with vomiting and small nodules through all his body. Few of the nodules were found forming chains of enlarged lymphatic vessels, especially on lesions located on the limbs. Some of the nodules were ulcerated with a serosanguineous discharge. Collected samples from ulcerated and the nodular lesions showed the presence of *Sporothrix schenckii* in culture. Although all hemocultures were negative, a spinal fluid collected from this patient and cultures from the cutaneous lesions were both positive for *S. schenckii*. The patient showed improvement after treatment with Amphotericin B. Sadly, he later died of complications not related to the *S. schenckii* infection. This case of disseminated sporotrichosis is a remainder that in patients with immunological disorders exotic forms of this fungal clinical entity could be expected.

Key words

Sporotrichosis, HIV, Amphotericin B, Mycotic meningitis

Esporotricosis cutánea y meníngea en un paciente con VIH

Resumen

Un paciente con VIH e historia de tuberculosis con sospecha de una neurotoxoplasmosis, fue admitido en el hospital con vómitos y con pequeños nódulos en todo el cuerpo. Algunos de los nódulos fueron observados formando cadenas de vasos linfáticos agrandados, especialmente en las extremidades. Muestras colectadas de las lesiones ulceradas y nodulares fueron positivas en cultivo para *Sporothrix schenckii*. Aunque todos los hemocultivos fueron negativos, muestras tomadas de líquido cefalorraquídeo y de las lesiones cutáneas fueron positivas para *S. schenckii*. El paciente respondió al tratamiento con anfotericina B. Sin embargo, murió más tarde por complicaciones no relacionadas con la infección. Este caso de esporotricosis diseminada es un llamada de atención para recordar que en pacientes con desordenes inmunológicos pueden producirse formas exóticas de la enfermedad.

Palabras clave

Esporotricosis, VIH, Anfotericina B, Meningitis micótica

Sporotrichosis is a fungal infection caused by the dimorphic fungal pathogen *Sporothrix schenckii*. The disease is acquired after traumatic inoculation of the pathogen with plant or organic materials containing propagules of this fungus [14]. More rarely, *S. schenckii* can

also be acquired through inhalation [10,14]. The cutaneous disease is characterized by the formation of single or multiple nodules that later become ulcerated and could spread to the nearby tissues with the formation of enlarged lymph nodes in chains. In recent years, the disease has been associated to patients with immunological disorders, including HIV patients, in which disseminated sporotrichosis seems to be a common outcome [1,3,6,9,10,12,16-19]. Herein, we described an unusual cutaneous and disseminated case of sporotrichosis in a HIV patient.

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Clinical Case

A 34 year old Brazilian male, HIV-positive since 1989, with past history of disseminated tuberculosis and a suspected neurotoxoplasmosis, was admitted to the hospital in October 2004 with frequent vomiting, nausea, sleepiness, fever, oral candidiasis, and a count of T-CD4 lymphocytes = 91 cell/mm³. During physical examination numerous skin nodular lesions, some of them ulcerated,



Figure 1. The figure depicts some of the multicentric chains of non-ulcerate nodular lesions found on the patient's arm.



Figure 2. The figure shows an enlargement of a nodular ulcerate lesions in one of the patient's forearm. Note small lesions around the main ulcerate area, a typical feature of the lesions in this patient [arrows].

through out his body, especially on his arms, were noted (Figure 1). The ulcerated nodules were characterized by the secretion of a serosanguineous discharge (Figure 2). The formation of enlarged lymph nodes in chains was also observed, especially on the limbs. Because the clinical aspects of the lesions a tentative diagnosis of bacterial dermatitis was suspected. However, samples collected from multiple nodules and a set of blood cultures sent to the laboratory did not reveal the etiologic agent. One week after admission, a collected biopsy of the infected nodules showed a granulomatous reaction with fibrosis and an intense infiltrate of inflammatory mononuclear and giant cells. Edema and vascular neof ormation was also noted. Despite the use of especial stains for fungi and other etiologic agents (Wade, Giemsa, and Grocott), the detection of the pathogen was not possible. Thus, a clinical diagnosis of atypical mycobacteriosis was presented.

Due to the granulomatous nature of the multicentric (multifocal) nodules new samples, collected from several enlarged lymph nodes, and a spinal fluid were sent to the Mycology section to rule out fungal pathogens. After one week of incubation at room temperature, *S. schenckii* was isolated from the inoculated plates, including those cultures plates inoculated with the patient's spinal fluid.

Amphotericin B (1.0 mg/kg/day) was prescribed to a total dose of 650 mg. The skin lesions and his neurological condition improved one week after treatment. However, two weeks later the patient clinical condition worsened, apparently not related to the sporotrichosis or to the antifungal therapy, and later the patient died. Unfortunately, a necropsy was not possible.

Discussion

Sporothrix schenckii is a dimorphic fungus usually acquired by trauma in immunocompetent hosts. However, in patients with impaired immunosystems the infection could be acquired by either skin trauma or by inhalation [14]. Interestingly, in apparently healthy hosts, sporotrichosis occurs as a single nodule that could ulcerate and disseminated via lymphatic vessels to nearby tissues. In contrast, in immunocompromised hosts, especially those with HIV infections, multicentric skin as well as disseminated [extracutaneous] lesions have been reported [4,5,11,16-19]. It is important to note that some reports of disseminated sporotrichosis were only cases of multicentric cutaneous sporotrichosis with not internal organs involvement [6,12]. It is worthy of note that some HIV patients with central nervous system *S. schenckii* infection reported in the medical literature, were apparently secondary to multifocal cutaneous sporotrichosis [7,16,18,19].

In the case discussed in this report, *S. schenckii* was recovered in culture from both the lymphatic and cutaneous tissues as well as the spinal fluid. This suggests that the fungus had disseminated to the central nervous system from the cutaneous lesions, and that the original diagnosis of neurotoxoplasmosis could be attributable to the presence of *S. schenckii* in the brain. Interestingly, some cases *S. schenckii* infection in HIV patients reported in the medical literature showed central nervous system involvement as well as the presence of multicentric cutaneous lesions [4,17]. However, anomalous cases of sporotrichosis in AIDS patients with osteoarticular tissue, bone marrow, epididymides, eyes, lungs, and pancreas involvement have been also encountered [1,2,5,11].

Treatment of systemic sporotrichosis in AIDS patients usually comprises the use of systemic imidazoles or amphotericin B [5,7,10,13,14]. A failure of disseminated sporotrichosis management with itraconazole was recently reported [18]. However, these investigators attributed the failure to the patient's inconsistency to take the drug. The response to these antifungal could varied between individuals, but it is well know that the systemic management for sporotrichosis with itraconazole or amphotericin B, is very effective in HIV patients with sporotrichosis [13,18]. Initial treatment with amphotericin B followed by a long term itraconazole was reported highly beneficial in this population of individuals [18]. In our case we use amphotericin B with an initial response to the treatment. However, due to his critical clinical condition, by the time of the diagnosis and management the patient passed away. Unfortunately, a necropsy was not performed, thus a final evaluation of his response to treatment was not possible. This report reinforces the concept that *S. schenckii* in HIV patients could lead to multicentric cutaneous and central nervous system *S. schenckii* infection. Thus, the clinicians should be aware of this unusual fungal infection diagnosed in AIDS patient as well as in other individuals with induced immunosuppression [8].

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