

Case Report

Facial Sporotrichosis by *Sporothrix Brasiliensis* in a Pediatric Patient: Case Report

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Citation: Junior DS, et al. Facial Sporotrichosis by *Sporothrix Brasiliensis* in a Pediatric Patient: Case Report. J Dermatol Res. 2023;4(3):1-4.

<https://doi.org/10.46889/JDR.2023.4304>

Received Date: 30-09-2023

Accepted Date: 19-10-2023

Published Date: 27-10-2023



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Abstract

Sporotrichosis is an endemic subcutaneous mycosis in Brazil, which zoonotic transmission through infected cats became responsible for the actual spread of the disease in the country. In this new epidemiological scenario, the species *Sporothrix brasiliensis* became relevant thanks to its greater virulence and adaptation to felines. We reported the case of facial sporotrichosis by *S. brasiliensis* in a 7-year-old child, successfully treated with a saturated potassium iodide solution, proving that this medication is safe and efficient for this age group.

Keywords: Facial Sporotrichosis; *Sporothrix Brasiliensis*; Pediatric Patient; Potassium Iodide

Introduction

Sporotrichosis is a subcutaneous mycosis caused by the thermally dimorphic fungus *Sporothrix spp.*, which has universal distribution more commonly found in tropical and subtropical regions [1]. In Brazil, the *Sporothrix brasiliensis* species became epidemiologically relevant in the decade of 1990, when the disease started to spread through the national territory via zoonotic transmission, having as its epicenter the state of Rio de Janeiro [2,3]. The clinical forms more frequently observed in humans are lymphocutaneous and fixed cutaneous being the lymphocutaneous form most prevalent among children [3-6]. Itraconazole and potassium iodide (KI) are the chosen drugs for the treatment of this mycosis [4,6]. This study presents a case of facial sporotrichosis by *S. brasiliensis* in a seven-year-old child successfully treated with KI in our institution.

Case Report

Male, 7 years old, brown, natural from Embu das Artes (SP), was taken to the General Dermatology Ambulatory from Hospital das Clínicas of the Medical School of the University of São Paulo

reporting nodular lesions in the face for 3 months. Initially in the right suprapalpebral region, the lesions spread to the inferior eyelid and ipsilateral malar, zygomatic and masseter regions. Some of the lesions fistulized and drained purulent secretion. The patient denied fever, adynamia or other complaints.

On physical examination, well delimited, 1 to 1.5 cm, erythematous violaceous nodules of firm consistency were observed, some covered by squamocrusts, arranged in a cord in the right suprapalpebral region and middle third of the same hemiface. The patient had conjunctival erythema and tearing in the right eye (Fig. 1). There were no lesions in the mucous membranes. The child took various antibiotics with no visible improvement. Weeks before the appearance of the lesions, the patient had been scratched by a cat.

Before the clinical epidemiological correlation, the hypothesis of lymphocutaneous sporotrichosis was put forward and purulent material from one of the lesions was collected for culture analysis, in which there was a colony growth typical of *Sporothrix spp.* (Fig. 2). The culture was sent to species-specific PCR assay and the species *Sporothrix brasiliensis* was identified. The patient had

no laboratorial blood alterations, with normal levels of glycemia, urea, creatinine and liver functions. Serology for hepatitis, syphilis and HIV were negative. Treatment with 1 mg/ml potassium iodide solution was initiated, with progressive increase of dosage up to 40 drops twice a day, achieving improvement of skin condition after 12 weeks of this therapeutic scheme, including complete cure of erythema and tearing in the right eye (Fig. 3).



Figure 1: Erythematous violaceous nodules arranged in a chord on the right hemiface.

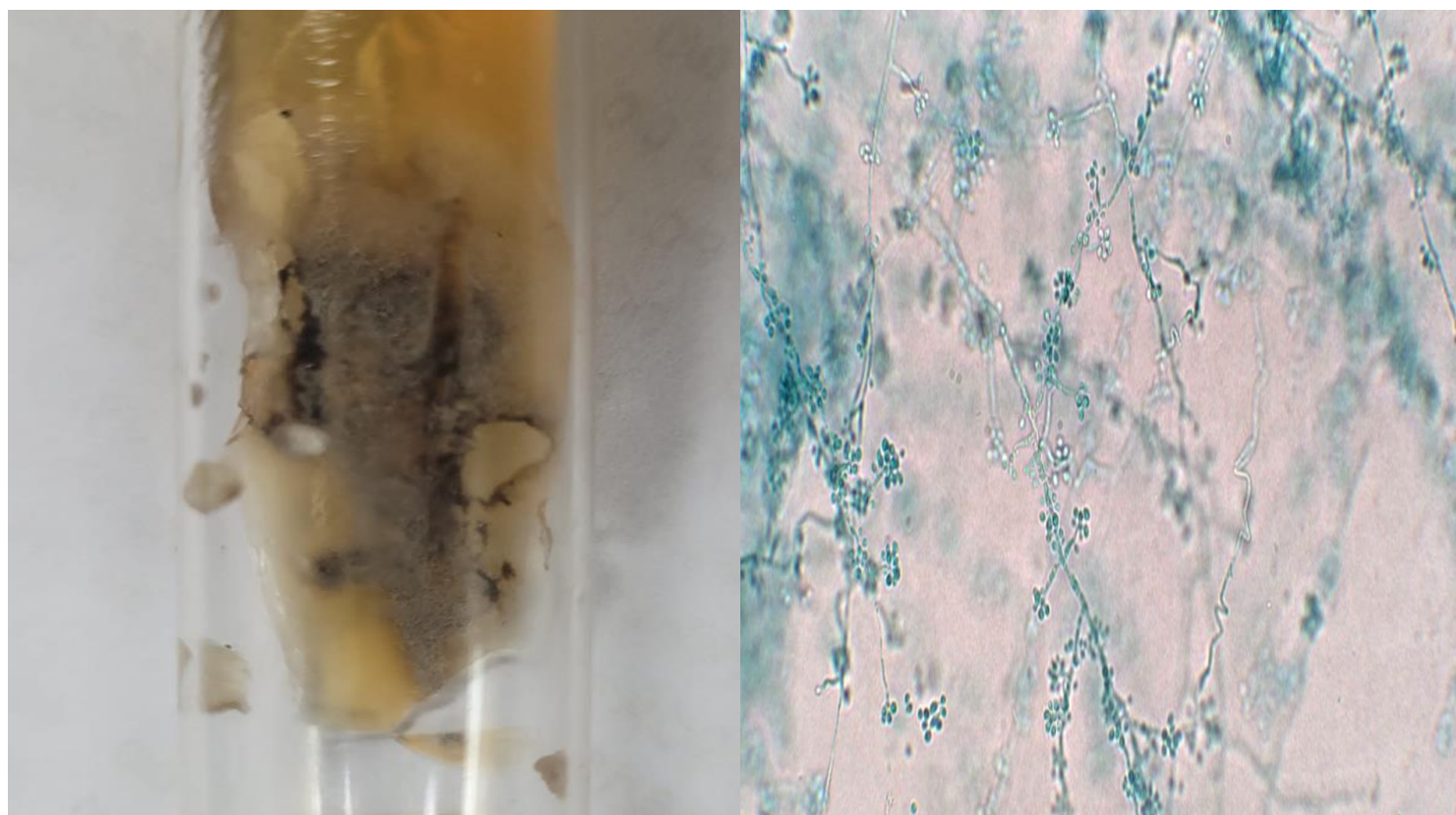


Figure 2: A: Macroculture of *Sporothrix brasiliensis* on Sabouraud agar from purulent disorder collected from one of the lesions; B: Microculture revealing hyaline septate hyphae and multiple conidiophores with conidia at the extremities in a "daisy" arrangement.



Figure 3: Clinical cure after 12 weeks of treatment with SSKI.

Discussion

Sporotrichosis is a subcutaneous mycosis considered endemic in Brazil. The etiological agent is the fungus of the genus *Sporothrix*, which lives saprophytically in nature and its transmission occurs by traumatic inoculation of fragments of hyphae and conidia into the skin, through the soil, thorns and wood splinters, being the species *S. schenckii* the main agent involved in these cases [5,7,8].

In the decade of 1990, the disease started to spread in the national territory by zoonotic transmission, through the contact with contaminated domestic cats, having as its epicenter the state of Rio de Janeiro. In this form of transmission of sporotrichosis, the *S. brasiliensis* gained epidemiological relevance, being responsible for most of the cases transmitted by these animals [2,8,9]. Two retrospective studies conducted in tertiary hospitals in the state of São Paulo, Brazil, revealed that most patients diagnosed with sporotrichosis in the decade of 2010 had been in touch with infected cats. Molecular analysis identified that most isolated specimens were *S. brasiliensis* [3,10]. It can be explained by the greater virulence and adaptability of the fungus to the felines as well as by its capacity of transmission through direct contact with secretion of infected animals [6,8,9]. It is estimated that the prevalence of the species *S. brasiliensis* is around 88% in southeast South America, where Brazil is located [11].

The clinical forms of sporotrichosis are many and its classification was recently updated by Orofino-Costa, et al., in order to facilitate the study and treatment of the disease. In such classification sporotrichosis is divided into cutaneous, mucosal, osteoarticular, systemic and immunoreactive forms [4]. The clinical forms more frequently observed in human beings are lymphocutaneous and fixed cutaneous being the lymphocutaneous most prevalent among children [3-6,12].

There are few studies about sporotrichosis during childhood, although what is observed is that children often develop the skin disease in the face and members due to higher contact with animals [6,12,13]. In a study about human sporotrichosis treatment by *S. brasiliensis* conducted in the south region of Brazil, Poester, et al., described 4 pediatric cases, all of which presented the lymphocutaneous form, being 3 (75%) on the face [1]. These characteristics were also present in our patient.

Despite itraconazole being considered the first-line treatment in adults the Saturated Potassium Iodide Solution (SSKI) remains the chosen treatment for children due to its facility of administration [4]. Our experience with SSKI shows faster clinical cure, with a good safety profile and low recurrence rates. KI has anti-inflammatory and immunomodulatory action besides inhibiting the formation of biofilm in the filamentous and yeast-like phases of the fungus [5,7,14,15]. In our service we prescribe 20 g of KI to be formulated in 20 ml of distilled water, with a dosage of 20 to 40 drops, twice a day. This case report shows that SSKI is a safe and efficient treatment for cutaneous sporotrichosis in children, with low cost and few side effects.

Conflict of Interest

The authors have no conflict of interest to declare.

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