

Limphocutaneous Sporotrichosis Due to *Sporothrix schenckii* var *schenckii*: A Relapsing Case after Treatment with Potassium Iodide in Elderly

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Abstract

Sporotrichosis is a subcutaneous mycosis caused by the *Sporothrix schenckii* complex. It has three classic clinical variants: fixed, lymphangitic, and systemic. Treatment in most cases has been itraconazole or potassium iodide. The aim of this paper is to communicate an unusual relapsing case treated with IK. We report a 73-year-old woman with lymphangitic sporotrichosis, adequate response to treatment with potassium iodide, and recurrence 15 months after. A molecular test was performed through the amplification of a 331 bp fragment of the calmodulin gene. In both infections, the same specie was isolated. The effects of potassium iodide are briefly discussed, and we conclude that the same treatment can be prescribed, if no side effects are observed.

Keywords

Sporotrichosis, Lymphangitic Sporotrichosis, *Sporothrix schenckii*, Recurrence, Potassium Iodide

1. Introduction

Sporotrichosis is a subcutaneous mycosis caused by the *Sporothrix schenckii*

complex, it is generally acquired by traumatic inoculation, and has three classic clinical forms: fixed, lymphangitic, and systemic. The most prevalent pathogenic species are *Sporothrix schenckii sensu stricto*, *S. brasiliensis*, *S. globose*, and *S. mexicana* [1] [2]. The clinical diagnosis must be confirmed by culture, and first-line treatment is usually itraconazol, but in most cases in Latin American countries potassium iodide is used. The aim of this paper is to communicate an unusual relapsing case treated with IK.

2. Clinical Case

A 73-year-old female patient from Zacapoaxtla, Puebla (Mexico), with a previous history of systemic arterial hypertension was treated with losartan at an unspecified dose. She arrived at the Mycology section presenting a two-week evolution dermatosis localized on the upper left extremity affecting the dorsal aspect of the hand, forearm, and arm, characterized by a single ulcerated nodule on the hand and multiple erythematous nodules in various sizes, from 1 mm to 2 cm in diameter, some covered with fine scales and others ulcerated with a central crust. She denies previous traumatic injury (**Figure 1**).

An intradermal sporothricin skin test was performed which was positive, measuring 1 cm in diameter. *Sporothrix* spp was isolated in Sabouraud dextrose agar (Dixon®) (**Figure 2**). The patient received treatment with potassium iodide, 2 grams daily for 4 months with a resolution of the subcutaneous mycosis (**Figure 3**). Fifteen months later, she returned with activity from a nodular lesion near the initial lesion, and with a 4-month history; she denied trauma once again (**Figure 4**). A new culture was taken and *S. schenckii* was isolated, also molecular biology was similar to the previous culture (**Figure 5**). Molecular identification was performed by polymerase chain reaction (PCR) using a set of primers SschF 5-TTTCGAATGCGTTCGGCTGG-3 and Ssch-R 5-CTCCAGATCACCGTGTCA-3 to amplify a 331 bp product of the calmodulin gene, specific to *Sporothrix schenckii* var *schenckii* [3]. As the clinical response of the patient was successful the first time, the same treatment was given for 3 months achieving a clinical cure, and has remained asymptomatic two months after finishing treatment.



Figure 1. Lymphangitic sporotrichosis.

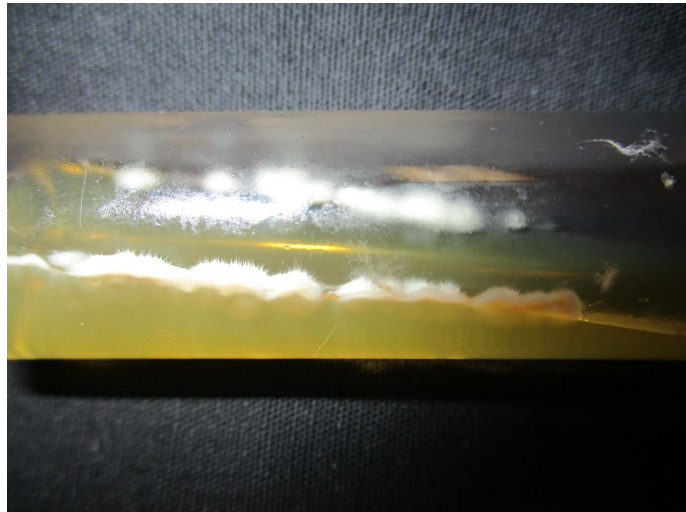


Figure 2. *Sporothrix schenckii* complex.



Figure 3. After treatment with KI.



Figure 4. Recurrence 15 months after clinical resolution.

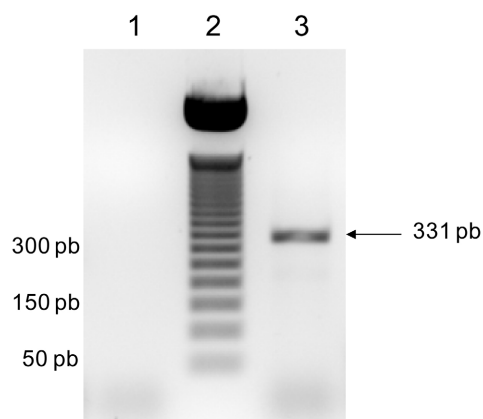


Figure 5. Molecular identification of *Sporothrix schenckii* var *schenckii*.

3. Discussion

Our patient presents the lymphangitic form, the most frequent variant that has been reported in our country, and in this case, *Sporothrix schenckii* var *schenckii* was isolated. She was treated with potassium iodide 2 grams daily with an adequate response and clinical resolution, however, she relapsed fifteen months later. It is not possible to determine if it was a recurrence or reinfection, due to the proximity of the new lesions or maybe exposure to the causal agent.

In the prescription of potassium iodide (KI) we must take into account the common collateral effects such as: gastrointestinal (nausea, vomiting), coryza, rhinorrhea, conjunctivitis, mumps, iodism (headache, sore throat, metallic taste, increased salivation), and acneiform eruptions. Less common are erythema nodosum, iododerma, leukocytoclastic vasculitis, as well as the Wolff-Chaikoff effect which consists of hypothyroidism or thyroid suppression, and in patients treated for thyroid disease, thyrotoxicosis (Jod-Basedow phenomenon) [4] [5].

According to international guidelines, the first-line treatment is itraconazole, but in many developing countries we continue to use KI, due to its low cost and effectiveness in fixed and lymphangitic cutaneous variants. This has also been endorsed by other publications [6] [7].

The variations in the clinical spectrum have been attributed to the method of inoculation, the size of the inoculum, the immunity of the host, and the virulence of the strain. The gold standard for diagnosis is considered to be the culture, however, the different species of the complex cannot be differentiated, which is why molecular biology is necessary, especially PCR. In murine models, *S. brasiliensis*, and *S. schenckii* have been found to be more virulent species compared to *S. globose*, and *S. mexicana*, which have shown little or no virulence. Likewise, *S. brasiliensis* has been linked to disseminated variants. However; the causes of recurrence are not well determined, in our patient's case, it could be attributed to insufficient treatment in terms of dose or administration time [8] [9].

The dose of itraconazole is 100 to 400 mg daily until cured or for 3 to 6 months. The administration of KI for sporotrichosis has no defined parameter in

dosage or time of administration. In general, in common cases, it is administered for three months, as we did in our case, and it is suspended due to clinical resolution.

The mechanism of action of KI is unknown, but it is known to stimulate phagocytosis, the immune system, and inhibit granuloma formation. Therefore, it is considered to have an immunomodulatory effect. In case of toxicity, the dosage should be reduced or suspended. It is contraindicated in patients with thyroid disorders, in pregnant women (category D), and during lactation [1] [4].

4. Conclusion

In conclusion, sporotrichosis must be confirmed by laboratory tests, such as culture, and if possible molecular biology. In this case, we selected KI, for its low cost and easy administration, and we observed a good clinical response. We report this case because relapse is rarely observed after treatment.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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