Tinea corporis on the stump leg with *Trichophyton rubrum* infection

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**A R T I C L E   I N F O**

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**A B S T R A C T**

We report a case of tinea corporis on amputated leg stump caused by *Trichophyton rubrum*. The patient, a 54-year-old male, experienced a serious traffic accident, resulting his right leg amputated 3 years ago. Since then prosthesis was fitted and protective equipment of silicone stocking was worn for the stump. He consulted with circular, patchy and scaly erythemas with itching on his right below knee amputation stump for 2 months. The diagnoses of tinea corporis on the stump was made based on a positive KOH direct microscopic examination, morphologic characteristics and sequencing of the internal transcribed spacers (ITS) 1 and 4, confirmed that the isolate from the scales was *T. rubrum*. The patient was cured with oral terbinafine and topical naftifine-ketoconazole cream following 2% ketoconazole shampoo wash for 3 weeks. Long times using prosthesis together with protective equipment of silicone stocking, leading to the local environment of airtight and humid within the prosthesis favors *T. rubrum* infection of the stump could be considered as the precipitating factors.

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1. Introduction

*Trichophyton rubrum* is an anthropophilic fungus which frequently causes acute or chronic inflammatory tinea corporis, but rarely reported occurring on post-amputation stumps in patients. We present a case of tinea corporis involving *T. rubrum* on the leg stump of a patient using prosthesis together with protective equipment.

2. Case

A 54-year-old male presented to our clinic (day 0) with circular, patchy and scaly erythemas with itching on his right below knee amputation stump, which started at day – 60 (Fig. 1a). Three years ago, his right leg was amputated after a serious traffic accident. Prosthesis was fitted after the amputation and protective equipment was worn for the stump. On physical examination, dot, flaky, and confluent map-shaped scaly erythema with dark red to red color distributed on the knee and lower leg stump, consistent with silicone stocking protect on (Fig. 1b). There are no other significant findings apart from the cutaneous findings as described earlier. Routine blood investigations did not reveal any significant abnormalities. The renal function, liver enzymes, plasma glucose level, and electrolyte levels were all within normal limits.

The direct microscopic examination of 10% KOH preparation of the scales from his lesions showed extremely high numbers of endothrix spores filled in the vellus hair (Fig. 2a). The scales were inoculated on slide with Sabouraud dextrose agar (SDA, Oxoid Ltd, Hampshire, UK) slants, supplemented with cycloheximide (500 mg/l) and chloramphenicol (50 mg/l), incubated at 25 °C. Stunted, white downy colonies grew with a pale yellow-brown reverse pigment (Fig. 2b). Slide culture showed atypical slender clavate microconidia of *T. rubrum* downy type [1] (Fig. 2c). Universal fungal primers, for amplification of the internal transcribed spacers (ITS), ITS1 (5′-TCCGATTTAGATATGC-3′) and ITS4 (5′-TCCTCCTGCTATTGATATGC-3′) (Shanghai Invitrogen Biotech Co., Ltd, China), were used for PCR by using a procedure described previously [2,3]. The sequences were aligned (BIOEDIT, [http://www.mbio.ncsu.edu](http://www.mbio.ncsu.edu)) and deposited in the GenBank with the accession number KC880983. The DNA sequences of nuclear ribosomal ITS region of the fungus was *T. rubrum* strain CBS 288.86 (DDBJ/EMBL/GenBank accession No. AJ270793.1) with homology of 99% by using the Blast 2 Sequences Tool ([http://www.ncbi.nlm.nih.gov/blast/bl2seq/wblast2.cgi](http://www.ncbi.nlm.nih.gov/blast/bl2seq/wblast2.cgi)).

Based on morphological features and molecular identification, the patient’s skin lesions were diagnosed as tinea corporis caused by *T. rubrum*. The patient was treated with oral terbinafine tablet (Lamisil, Beijing Novartis Pharmaceutical Ltd.), 250 mg per day, topical use the cream containing 1% naftifine hydrochloride and 0.25% ketoconazole (Chongqing Hualong Pharmaceutical Co., Ltd.) daily, after wash with 2% ketoconazole shampoo (Triatop, Xian-
Janssen Pharmaceutical Ltd.) once a day. Treatment continues to day +21, the scaly erythema significantly improved (Fig. 1c), and repeat direct microscopic examinations and cultures were both negative post treatment. No side effects be declared.

3. Discussion

As the commonly implicated pathogenic dermatophyte, *T. rubrum* is the most isolated from tinea corporis [4,5], and it may also be occurring as perfolliculitis in patient post-amputation stump [6]. The precipitating factors in our patient of tinea corporis involving *T. rubrum* on the leg stump including long period using a prosthesis together with protective equipment of silicone stocking, that make the local environment of airtight and humid within the prosthesis favors *T. rubrum* infection of the stump [7]. Dark red to red color of the lesions indicated repeated activity and relief happened. Regular changing and cleaning of the silicone stocking is important to prevent infection. Differential diagnosis should be considered such as chronic contact dermatitis or mechanic irritative dermatitis possible to protective equipment of silicone stocking. Fungal infection should be carefully observed when circular pruritic erythematous patches develop on post-amputation stumps. Further microbiological investigations to confirm diagnosis, followed by effective antifungal treatment.

Conflict of interest

There are none.
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