Dermatitis by *Dermatophilus congolensis*

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Original Submission: 23 April 2015; **Revised Submission:** 12 June 2015; **Accepted:** 12 June 2015
Editor: J.-C. Lagier
Article published online: 19 June 2015

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Sir,

A 29-year-old male came to our Emergency Department on his return from a trip to Thailand.

He presented a pruritic skin rash that had appeared 1 week previously, during the trip. The patient did not present fever, was conscious, well oriented and well hydrated.

On physical examination, multiple papules and pustules were observed predominantly on the upper limbs, but there were also some lesions on the trunk and lower limbs.

The Tropical Medicine Service he had consulted before travelling to Thailand did not recommend any prophylactic measures.

During the trip the patient had swum in rivers and lakes, had walked barefoot and had been bitten by insects. Moreover, he had drunk non-bottled water and had had contact with animals (elephant ride).

The skin lesions appeared during his stay in Thailand, where he had received some topical treatment, the name of which he did not remember, and after which no improvement had been observed.

Upon his arrival at the Emergency Department skin samples were taken with cotton swabs in Stuart transport medium, and sent for microbiological study. Oral cefadroxil monohydrate 500 mg twice daily for 6 days, deschlorpheniramine maleate 2 mg three times daily, and topical treatment with betamethanose-gentamicin cream were prescribed.

In the Microbiology Laboratory the samples where cultured on blood agar, MacConkey agar, Schaedler agar and thioglycollate broth. All culture media were incubated at 37°C 5% CO_2, except the Schaedler agar which was incubated in an anaerobic atmosphere.

After 24 h of incubation different colonies had grown on blood agar: several colonies of two types of coagulase-negative staphylococci (identified as *Staphylococcus hominis* and *Staphylococcus saprophyticus*) and a predominant type of wrinkled colonies. These latter colonies underwent Gram staining, which showed Gram-positive rods.

Matrix-assisted laser desorption/ionization–time-of-flight (MALDI-TOF) mass spectrometry identified the microorganism as *Dermatophilus congolensis*, with a 1.8 score, proving to be a valid method for identification as published previously [1]. Biochemical tests such as catalase, urease and gelatinase were positive.

The identification of *D. congolensis* was confirmed by genotypic analysis. A 16S rRNA fragment was amplified and sequenced and the BLAST result was 99% concordant with *D. congolensis*.

The antibiogram showed that the strain had intermediate susceptibility to levofloxacine and was susceptible to all the other drugs tested (penicillin, gentamicin, cotrimoxazole, erythromycin, clindamycin, vancomycin, linezolid and rifampicin).

Dermatophilus congolensis is an aerobic and facultative anaerobic Gram-positive rod. It is classified in the genus *Dermatophilus* of the family *Dermatophilaceae*, order Actinomycetales.

This bacterium is the causative agent of a skin infection known as dermatophilosis, a disease that commonly affects animals, mainly cattle. It has a global distribution and is usually found in humid environments. Humans can be infected after contact with infected animals [2].

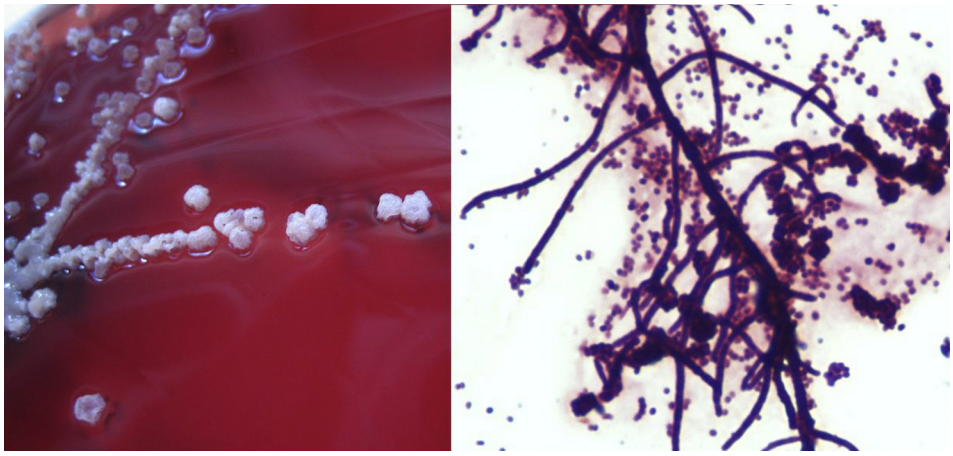
The clinical manifestations are heterogeneous. The most frequent findings are skin lesions including papules, pustules or desquamative eczema. However, some rare cases have also been described, involving the oesophagus and oral mucosa [3].

Dermatophilus congolensis is characterized by its ability to form filamentous structures with transversal and longitudinal segmentation, finally evolving to coccoid forms.

Colonies on blood agar incubated at 37°C in 5% CO_2 are 0.5–1 mm in diameter after 24 h. Colonies are β-haemolytic, greyish white, elevated, wrinkled, hard and adherent. After 2–5 days they sometimes obtain an orange colour.

These microscopic and macroscopic features can lead to the correct diagnosis, but they take time to develop. The correct identification of these bacteria by MALDI-TOF allows a rapid diagnosis, proving once again to be a very useful tool for rapid diagnosis of uncommon microorganisms [4].

http://dx.doi.org/10.1016/j.cmi.2015.06.013



Dermatophilus congolensis is catalase and urease positive and hydrolyses gelatine. This microorganism is susceptible to multiple antibacterial agents *in vitro*, such as penicillin, streptomycin, chloramphenicol, tetracycline, erythromycin, kanamycin, nitrofurantoin and sulphonamides. The most commonly used combination for treatment of dermatophilosis in sheep is penicillin G plus streptomycin. The best treatment for humans has not been established, because of the scarcity of cases and the self-limited nature of the infection.

As suggested in previous studies [5], this infection may be underdiagnosed because of its self-limiting nature, making it a relatively unknown disease among clinicians, who therefore may not suspect the aetiology of these lesions when presented.

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