



Periocular tinea caused by zoonotic *Trichophyton benhamiae*

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A 52-year-old immunocompetent woman was referred to the outpatient dermatology department of the Erasmus University Medical Center (Rotterdam, Netherlands) with a large, sharply demarcated erythematous plaque with yellow crustae around the right eye and on the upper right eyelid, without systemic symptoms and despite previous treatment (figure). Up until the appointment at our department, she was treated with oral valacyclovir (1000 mg three times a day) for 15 days, oral erythromycin (500 mg four times a day) for 6 days, and both fusidic acid cream and acyclovir cream two times a day. These medications were prescribed in another clinic. Before this treatment, she had been treated with oral clarithromycin (500 mg twice a day) for 5 days without any effect. 2 years before presentation, the patient had had itching papules on both arms that spontaneously disappeared after a few months. 1 month before presentation, she recalled having walked through the forest, around which time the periocular lesion and several smaller lesions on her scapulae and right flank region developed. She owned a guinea pig with

which she occasionally had close facial contact. The main differential diagnosis included tinea faciei (ie, fungal infection of the face by a dermatophyte) and eruism, also known as caterpillar dermatitis, a dermatological reaction to hairs of the larvae of oak processionary moths, which could have occurred after the walk in the forest. Skin biopsies showed a widespread granulomatous inflammatory response and growth of *Trichophyton benhamiae*. The patient was prescribed treatment with oral terbinafine (250 mg once a day) for 3 months, after which the lesion showed good clinical resolution (figure).

T benhamiae is a zoophilic dermatophyte that was initially described as *Arthroderma benhamiae*, the sexual reproductive state (teleomorph) of the *Trichophyton mentagrophytes* complex. After a dermatophyte taxonomy update the dermatophyte has been named *Trichophyton benhamiae*, based on ribosomal sequencing, to distinguish it from members of the *T mentagrophytes* complex. Together with the anthropophilic *Trichophyton interdigitale* of the *T mentagrophytes* complex, *T benhamiae* can induce severe pro-inflammatory cytokine responses from keratinocytes in infected humans. Guinea pigs are considered its main animal reservoir, with studies having reported the presence of *T benhamiae* in asymptomatic guinea pigs as well as other small animals. Both immunocompromised and immunocompetent infected humans, but also animals, can develop tinea. Presentation depends on the affected anatomical region and includes tinea corporis, tinea manuum, tinea faciei, and tinea capitis, and there is an association with inflammation and secondary bacterial infections.

In children and immunocompromised individuals, infections with *T benhamiae* can lead to severe symptoms with secondary bacterial infections, dermal scars, and kerion celsi. It is important to treat patients and animals to prevent recurrence. To identify the exact cause, analysis of the site of infection can be combined with laboratory diagnostics, and it is important to be aware that new species names can arise with taxonomic developments. Treatment of tinea depends on the anatomical location and severity of the infection. This case highlights that *T benhamiae* is a zoophilic dermatophyte that can cause tinea in both pet animals and humans, which can be treated with antifungal therapy.

Contributors

GJS and AGV contributed to the microbiological diagnosis. GJS, WSNL, and AGV provided microbiological expertise. EB and HBT contributed to the care of the patient and provided images. EMB provided veterinary expertise. GJS drafted this Clinical Picture. All authors read and approved the final version of this Clinical Picture. Informed consent for publication was obtained from the patient

Declaration of interests

We declare no competing interests.

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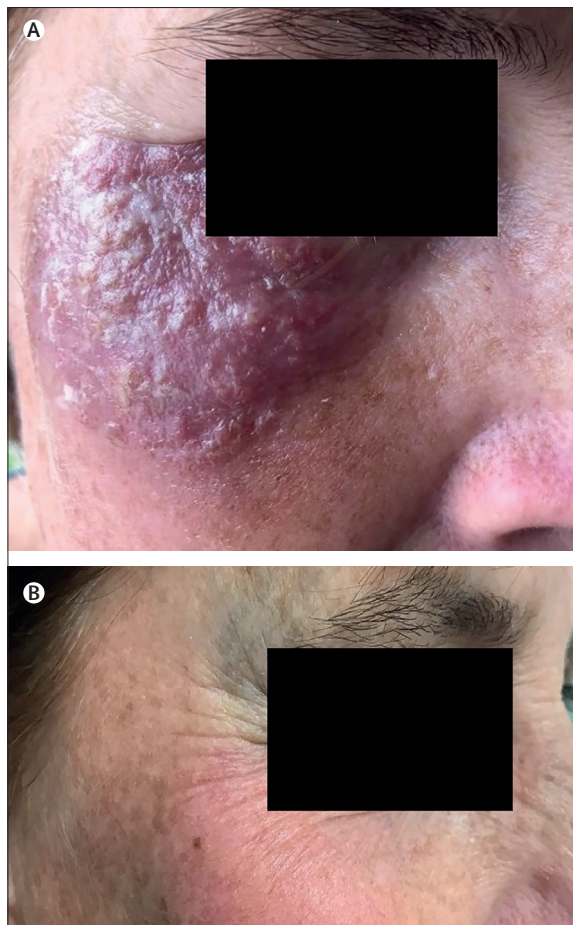


Figure: Periocular tinea caused by zoonotic *Trichophyton benhamiae*

(A) Large, sharply demarcated erythematous plaque with yellow crustae. (B) Good clinical resolution after treatment with oral terbinafine (250 mg once a day) for 3 months.