

Dermoscopy of *Mycobacterium marinum* Skin infection: A Challenging Diagnosis

Dear Editor,

Mycobacterium (M.) marinum is a slow-growing atypical mycobacterium found mainly in saltwater environments. Infection occurs following inoculation of a skin lesion and manifests as a localized granuloma; in fact, the most common cause of infection with *M. marinum* is the exposure of traumatized skin to affected aqueous environments (1), and it most commonly involves individuals with occupational and recreational exposure to non-chlorinated water (2).

An erythematous or bluish 0.5 to 3.0 cm nodule usually develops at the inoculation site, while ulceration can occur later and subsequent lesions may be present along the lymphatic drainage.

We present the first case in the literature describing the dermoscopic characteristics of a microbiologically proven *Mycobacterium marinum* skin infection, although more cases are certainly needed to identify the main dermoscopic features of this infection.



Figure 1. Clinical appearance of *Mycobacterium marinum* skin infection: two purplish nodules of about 1 cm in diameter located on the back of the hand and on the left thumb (white arrows).

In January 2019, a 66-year-old patient was referred to our Dermatological Clinic reporting the appearance of two purplish nodules about 2 months earlier, located on the back of the hand and on the left thumb (Figure 1) and of erythematous purplish appearance and quite painful to palpation.

Based on the clinical presentation, infection with atypical mycobacteria, botryomycosis, fungal infection (*Cryptococcus neoformans*, *Histoplasma capsulatum*) and infection with *Francisella tularensis* were considered in the differential diagnosis. The patient was asked if he had an aquarium at home and he confirmed this by telling us of his passion for aquariums, which made the diagnosis easier.

Dermoscopic examination performed on the two lesions at the center of the first nodule located on the hand showed a whitish area surrounded by

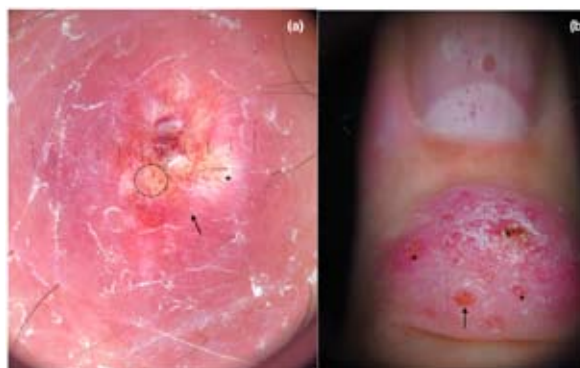


Figure 2. (a, b) The hand lesion presented with a central whitish area (*) surrounded by an erythematous background (black arrow) with fine scaling, dotted vessels, and an orangish whitish central area with looped concentric vessels (circle) (Figure 2a). Thumb lesion showed a purplish background with multiple structured rounded areas with orangish appearance (*) surrounded by looped vessels arranged in a crown-like shape (black arrow).

an erythematous background with fine scaling and dotted vessels and orange-whitish central areas with looped concentric monomorphic vessels (Figure 2, a). However, the thumb lesion had a purplish background with multiple structured rounded areas with orangish appearance surrounded by looped vessels arranged in a crown-like shape (Figure 2, b).

It is interesting to note the dermoscopic-histological correlation in this disease: the orangish areas in fact correspond to a granulomatous dermatitis, characterized by inflammatory nodular infiltrate within the dermis (tuberculoid granulomas) (3).

Clinically and dermoscopically, the nodules had two different sets of features because they were in different stages of development: the nodule of the thumb was older than the other one on the hand, which the patient reported was of recent onset, also confirmed by the presence of suppuration and ulceration.

Both lesions had orange areas in the context of an erythematous background which led us to investigate a granulomatous disease.

A deep culture examination and a skin biopsy were thus performed, showing *Mycobacterium marinum* infection. Oral therapy with clarithromycin 500 mg twice daily for 4 weeks was started and healing occurred in about 21 days.

We present this case to emphasize the role of dermoscopy in differential diagnosis of granulomatous disease and to show dermoscopic clues that have not yet been described and that can be used in the future to establish very early diagnosis of this infection, reducing the diagnostic delay.

References:

1. Nor NM, Baseri MM. Skin and subcutaneous infections in South-East Asia. *Curr Opin Infect Dis.* 2015;28:133-8.
2. Bouceiro-Mendes R, Ortins-Pina A, Fraga A, Marques T, Viveiros M, Machado D, et al. *Mycobacterium marinum* lymphocutaneous infection. *Dermatol Online J.* 2019;25:pil: 13030/qt5bb78905.
3. Conforti C, Giuffrida R, de Barros MH, Resende FSS, Cerroni L, Zalaudek I. Dermoscopy of a single plaque on the face: an uncommon presentation of cutaneous sarcoidosis. *Dermatol Pract Concept.* 2018;8:174-6.

**Claudio Conforti, Iris Zalaudek, Silvia Vichi,
Nicola Di Meo**

*Dermatology Clinic, Hospital Maggiore,
University of Trieste, Italy*

Corresponding author:

Claudio Conforti, MD
Dermatology Clinic
Hospital Maggiore
Trieste
Italy

claudioconforti@yahoo.com

Received: March 4, 2019

Accepted: October 23, 2019