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Diagnosis at first sight

Cutaneous papules in a sporotrichoid pattern on the hand

Pápulas cutáneas con patrón esporotricóide en la mano

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Case report

A 68-year-old Caucasian man with a history of Crohn's disease, taking azathioprine and adalimumab for 4 years, presented to our outpatient dermatology clinic with a two-month history of pain, edema, and erythema of the left-hand middle finger. The patient used to take care of his aquarium and a bonsai without wearing gloves, therefore having suffered a small traumatic wound on this finger caused by a dead fish. He had no response to previous treatment with amoxicillin-clavulanic acid, cotrimoxazole, and valacyclovir. Physical examination revealed an inflamed crusted lesion on the third left finger and multiple cutaneous papules, distributed in a sporotrichoid pattern on the back of his left hand, and on his third, fourth, and fifth finger (Fig. 1a). There was no

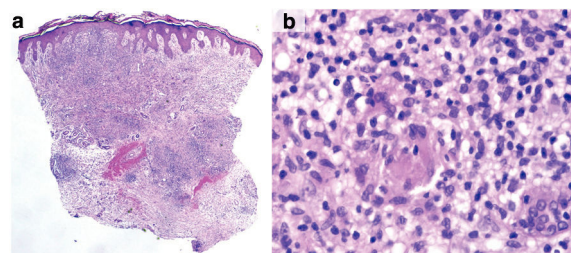


Fig. 2. Histopathological features: (a) intradermal nodular inflammatory infiltrate covered by hyperplastic epidermis (hematoxylin and eosin; $\times 16$); (b) dermal epithelioid granulomas without central necrosis surrounded by lymphoplasmacytic infiltrate (hematoxylin and eosin; $\times 400$).



Fig. 1. (a) Clinical image: disseminated cutaneous papules distributed in a sporotrichoid pattern on the back of the left hand. (b) Culture: typical photochromogenic colonies of *Mycobacterium marinum* on Löwenstein-Jensen medium.

enlargement of lymph nodes or involvement of other internal organs. Left-hand x-ray excluded osteomyelitis. Skin biopsy revealed a dermal infiltrate of lymphocytes and plasma cells surrounding epithelioid granulomas with giant multinucleated cells (Fig. 2). Gram, periodic acid-Schiff, Grocott, and Ziehl-Neelsen stains were negative. *Mycobacterium (M.) marinum* was isolated from a skin biopsy in solid cultures and confirmed by polymerase chain reaction and DNA sequencing (Fig. 1b).

Clinical course

The patient started treatment with ethambutol 2 g and rifampicin 600 mg once daily. Beyond that, adalimumab was discontinued and replaced by ustekinumab due to a persistent lack of control of Crohn's disease. After 6 months of therapy, there is complete resolution. The patient completed 9 months of therapy due to immunosuppressive therapy performed for Crohn's disease.

Closing remarks

M. marinum is a non-tuberculosis mycobacterium that can cause granulomatous skin infections. It is an endemic fish pathogen found in fish tanks, swimming pools, and natural bodies of water.^{1–3} It clinically presents as a solitary papulo-nodule at the inocu-

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lation site, which may ulcerate and spread in 20% of the cases in a sporotrichoid pattern (lymphangitic spread) following minor trauma and exposure to contaminated water or from direct contact with fish or shellfish.^{1,4} Because its optimal temperature for growth is around 30°C, cutaneous lesions most frequently occur in the upper or lower extremities and sometimes on the tip of the nose.^{3–5} Tumour necrosis factor (TNF) alpha plays an essential role in granuloma formation and mycobacterial growth restriction within macrophages. Thus, patients taking anti-TNF agents are at increased risk for granulomatous infections such as *M. marinum*. Most of these patients had infections confined to the skin and subcutaneous tissue, often in a sporotrichoid distribution, as in our case. However, immunocompromised patients may show severe and disseminated disease with deep infections such as tenosynovitis, osteomyelitis, and septic arthritis.^{2,3,5} Cutaneous lesions are often misdiagnosed as furunculosis, sporotrichosis, pyoderma, cutaneous leishmaniasis, tuberculosis primary complex, and sarcoidosis.^{3,5} Despite the availability of diagnostic tools, such as tissue cultures, PCR, and histology, the diagnosis of *M. marinum* is challenging. Culture provides a definitive diagnosis of *M. marinum*, but it is positive in only 70–80% of cases.^{2,5} By standard susceptibility testing, *M. marinum* isolates are susceptible to rifampicin, rifabutin, ethambutol, clarithromycin, sulfonamides, trimethoprim-sulfamethoxazole, doxycycline, and minocycline. American Thoracic Society and Infectious Diseases Society of America (ATS/IDSA) statement and recommendations advocate the treatment with two active agents until 1–2 months after resolution of symptoms.^{1,3,4} Patients taking anti-TNF agents often require a more extended multidrug regimen or even surgical intervention, with an average course of treatment over 6 months to 1 year.^{2,3} Attention must be paid to the interruption of TNF-alpha inhibitor treatment so as to hasten resolution and should be determined on a case-by-case basis.^{2,3} In this case, biological therapy with an anti-IL-12/IL-23 was successfully maintained during antibiotic therapy. Due to the increasing use of biologics, *M. marinum*

infections should always be included in the differential diagnosis of cutaneous infections in immunocompromised patients.

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Conflict of interest

The authors have no conflict of interest to declare.

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