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Diagnosis at first sight

Ulcerated lesion on the right hand with a torpid course and subsequent «sporotrichoid» dissemination, in a fish fancier woman☆

Lesión ulcerada en la mano derecha de curso tórpido y posterior diseminación «esporotricoide», en una mujer aficionada a los peces

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Case report

A 31-year-old woman with no medical history of note sought care due to the onset of erythematous nodular skin lesions six weeks earlier. The initial lesion consisted of a papule on the dorsal side of her right hand, at the fifth metacarpophalangeal joint, which progressed to an ulcerated nodular lesion (Fig. 1). Two weeks later, she presented painful erythematous nodular lesions spreading up to her arm. During this time, the patient underwent various treatments with no improvement: sodium fusidate ointment, cloxacillin 500 mg/6 h orally (PO) and amoxicillin/clavulanic acid 875/125 mg/8 h PO. She did not present fever or any other symptoms. Nor were there any other findings of interest on examination. A complete blood count, a general chemistry panel and a liver panel were all normal. A notable element of the patient's epidemiological history was that she had a fish tank at home and often submerged her right hand in it when carrying out its maintenance. With a provisional diagnosis of nodular lymphangitis due to *Mycobacterium marinum* (*M. marinum*), fine-needle aspiration was performed on the nodular lesion on the patient's hand and arm (Fig. 2) and the purulent contents were sent to the microbiology laboratory. A simple X-ray of the hand and chest was ordered.

Figure 1. Ulcerated nodular lesion at the site of infection with a well-defined border covered with a scab. Three nodules on the back of the hand and on the right wrist.

Clinical course

The bacterial culture and bacilloscopy were negative, and the X-ray was normal. Following two weeks of incubation at 30 °C in Lowenstein-Jensen medium, *M. marinum* was isolated, and treatment was started with clarithromycin 500 mg/12 h PO and rifampicin 600 mg/day PO. The strain was sent to the Centro de Referencia de Micobacterias [Mycobacteria Reference Centre] (Faculty of Medicine, Córdoba, Spain) for definitive identification. After treatment was started, the patient's initial lesions remained stable (Fig. 3) and she presented new nodular lesions measuring <1 cm on her forearm. Two months later, complete resolution of the patient's nodules and clear improvement in the lesion on her hand were observed. The patient completed 14 weeks of antibiotic treatment. The technique of polymerase chain reaction and reverse hybridisation (*Genotype Mycobacterium* CM/AS) confirmed the diagnosis of *M. marinum* infection. No antibiogram was performed.

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Figure 2. Painful lymphatic satellite nodule on the inner aspect of the right arm with signs of inflammation.

Figure 3. Same nodule as in Fig. 2 with decreased signs of inflammation after 14 days of suitable antibiotic treatment.

Closing remarks

Lymphocutaneous syndrome (or nodular lymphangitis) is characterised by an initial skin lesion at the site of infection, in the form of a papule or ulcerated nodule, with the subsequent onset of secondary subcutaneous nodules and/or lymphangitis.[1,2] It may be a product of certain micro-organisms,[1,2] with *M. marinum*, among mycobacteria, the most common aetiological agent.[1] This is a non-tuberculous mycobacterium (NTM) of intermediate growth whose ecological niche is water and aquatic animals. It requires incubation at 28–30 °C.[3,4] It causes infections with an annual incidence of 0.04 and 0.27 confirmed cases per 100,000 patients in France and the United States, respectively.[5,6] Some 85% of known cases of exposure are related to contact with fish tanks (49%), lesions caused by fish or shellfish (27.4%) and lesions related to salt-water or brackish water (8.8%),[7] with an incubation period of two to four weeks.[7] Its clinical presentation consists of different cutaneous forms[1,3,5,6,8]: a single papulonodular lesion on a limb (60%)[5] or sporotrichoid dissemination (25%),[5] and invasive forms, in which deep structures are affected (20–40%) (tenosynovitis, bursitis, arthritis, osteomyelitis)[5,6] or the infection spreads (exclusively in native or acquired immunosuppression).[9,10] In the most extensive published series, which enrolled 63 patients from 31 French hospitals, the arms were affected in 95% and deep structures (tendon, joint or bone) were damaged in 28%,[5] with a cure in 72% of cases versus 93% of cases in which the skin and soft tissues were affected.[5] The differential diagnosis[1,2,4] should include skin infections caused by other NTMs, sporotrichosis, nocardiosis, leishmaniasis and tularaemia, the epidemiological context being essential.[2] A definitive microbiological diagnosis is made by isolating the micro-organism in a culture of mycobacteria (70–80% performance)[4,5] or using molecular techniques; bacilloscopy has a poor performance (30% of cases). The current guidelines on infections with NTMs from the Infectious Diseases Society of America recommend treating *M. marinum* with at least two active agents. Clarithromycin, ethambutol and rifampicin are first-line treatment options[10] that should be maintained for at least three months[3,10] or for four to six weeks after the lesions resolve.[10] In conclusion, *M. marinum* is a rare cause of infections associated with fish tanks. It should be suspected in lesions that affect the hands and progress to nodular lymphangitis. Infection with this micro-organism requires prolonged antibiotic treatment.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

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