

EMERGENCY CASEBOOK

Fish tank granuloma—an unusual cause of skin infection

A 40 year old man presented to the accident and emergency (A&E) department complaining of a two and a half week history of “lumps” on his left hand and forearm. He had no significant past medical history. The problem initially began with a small septic lesion on the dorsum of the proximal interphalangeal joint of the left little finger. Subsequently swelling of the hand, lymphangitis of the forearm, and the appearance of small lumps occurred. His general practitioner prescribed two separate courses of antibiotics (cephradine and ciprofloxacin—the patient was allergic to penicillin) with no effect. Examination revealed six raised, tender, erythematous nodules, 1–2 cm in diameter, on the dorsum of the left hand and forearm (fig 1). Routine laboratory culture, full blood count, and biochemistry were all normal. Erythrocyte sedimentation rate was 14 mm/h. He was prescribed a course of erythromycin and reviewed one week later, when there was no change in the clinical condition. A biopsy from a nodule highlighted “dermal inflammation and abscess formation with prominent histiocyte reaction.” At this stage he was referred to a consultant dermatologist. It now transpired that the patient’s main leisure interest was in tropical fish and he had numerous aquariums at home. His condition was diagnosed as fish tank granuloma and he was started on minocycline 150 mg daily. After a three month course the infection had resolved and he was discharged from follow up.

Fish tank granuloma is a rare cutaneous infection caused by the organism *Mycobacterium*

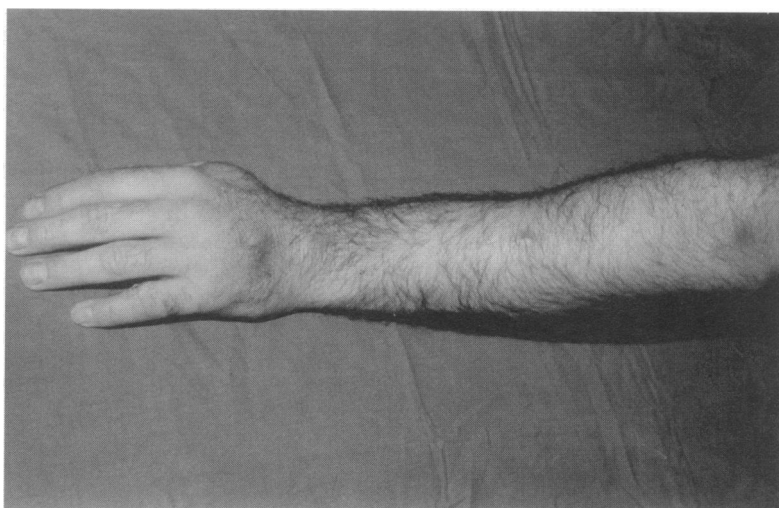


Figure 1 Lesions on the forearm.

marinum,^{1,2} an atypical species of mycobacterium inhabiting aquatic environments.² It has also been isolated from home fish aquariums and swimming pools.^{1,2} This organism infects fish, resulting in a granulomatous condition known as “fish tuberculosis” and it can infect humans by locally contaminating minor skin wounds.^{1,4} *M marinum* skin infection can present in three distinct patterns: a solitary nodule, multiple ascending nodules following lymphatic vessels (sporotrichoid form, as in fig 1),¹ and rarely as widespread cutaneous dissemination.⁵ Cases of *M marinum* skin infection have been reported in fish fanciers,^{2,6} lifeguards,⁷ and after water sport accidents.² Treatment is controversial and no specific antibiotic is recommended. The use of tetracyclines has become popular, namely minocycline and doxycycline.^{1,3} Resolution requires a course of treatment of two to four months’ duration.^{1,2} Simple hygienic measures can be employed to prevent reinfection, for example, wearing gloves and the use of cleaning implements. Cutaneous infections are usually caused by staphylococci or streptococci and respond to flucloxacillin and penicillin respectively. In a patient unresponsive to standard treatment the clinician must be aware of the possibility of an alternative or uncommon diagnosis, and a more detailed clinical history must be taken, including leisure interests, occupation, or unusual events that have occurred.

1 Johnston JM, Izumi AK. Cutaneous mycobacterium marinum infection (“swimming pool granuloma”). *Clin Dermatol* 1987;5:68–75.

2 Gray SF, Smith RS, Reynolds NJ, Williams EW. Fish tank granuloma. *BMJ* 1990;300:1069–70.

3 Huminer D, Pitlik SD, Block C, Kaufman L, Amit S, Rosenfeld JB. Aquarium borne mycobacterium skin infection. *Arch Dermatol* 1986;122:698–703.

4 Edelstein H. Mycobacterium marinum skin infections. *Arch Intern Med* 1994;154:1359–64.

5 Bruckner-Tuderman L, Blank AA. Unusual cutaneous dissemination of a tropical fish tank granuloma. *Cutis* 1985;36:405–7.

6 Paul D, Gulick P. Mycobacterium marinum skin infections: two case reports. *J Fam Pract* 1993;36:336–8.

7 Fisher AA. Swimming pool granulomas due to mycobacterium marinum: an occupational hazard of lifeguards. *Cutis* 1988;41:397–8.



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