

# Atypical *Mycobacterium Marinum*: A Case of Fish Tank Granuloma

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## Case Report & Results

A 76-year-old immunocompetent female presented to her family physician with a presumed infection on her right dorsal hand and wrist, which she believed to be secondary to a possible stick pin or spider bite at a department store while rummaging through jeans. She was prescribed cefalexin, doxycycline, azithromycin, and fluocinonide cream with no improvement. A 3mm punch biopsy showed a suppurative granulomatous process.

She was sent to Dermatology for further evaluation. Prednisone, sulfamethoxazole-trimethoprim, and betamethasone dipropionate cream did not help. Two additional 3 mm punch biopsies confirmed a suppurative and granulomatous dermatitis. Two subsequent 3 mm punch biopsies were sent in saline for deep fungal and mycobacterium cultures. A KOH exam was negative for superficial fungus. She failed a two week trial of terbinafine 250 mg for possible Majocchi's granuloma. Subsequently, both cultures were negative for fungus and mycobacterium.

The patient's husband owned an aquarium, and even though she denied any contact with it and the cultures were negative, *M. marinum* was highly suspected. To treat this, a two week trial of minocycline was given, but did not yield improvement. Ultimately, our patient's infection dramatically improved within two weeks of clarithromycin 500mg bid and ethambutol 400mg tid. She remained on this dose for three months with total resolution.

Figure 1. Initial presentation: Right dorsal hand and wrist.



Figure 2. Suppurative and granulomatous inflammation.

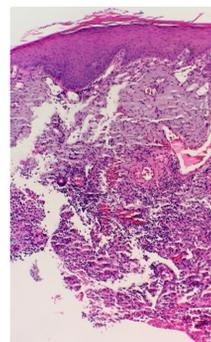


Figure 3. PAS, AFB, gram stains negative for organisms.

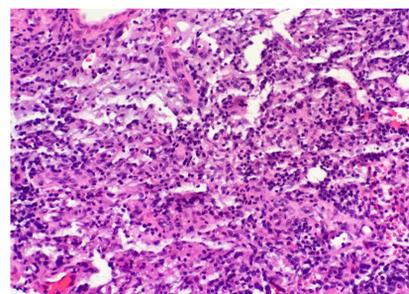


Figure 4. 2 weeks after treatment with clarithromycin/ethambutol: 50% resolution.



Figure 5. 3 months after treatment with clarithromycin/ethambutol: Complete resolution, with scarring.



## Background & Objective

*Mycobacterium marinum* is a non-tuberculous gram-positive, acid-fast bacillus, specific to aquatic environments with the ability to infect humans. It is known colloquially as "fish-handler's disease." Exposure to

an infected fish tank or other contaminated source with minor abrasions or cuts in the epidermis may cause entry of *M. marinum*, leading to spread along the lymphatics in a nodular granulomatous disease.

## Conclusion

Fish Tank Granuloma's manifestation presents challenges and delays and is often treated empirically as in this case. Solitary red or violaceous nodules initially appear and can develop into suppurative granulomatous dermatitis with pruritus and pain. As the course of the infection progresses, the nodules turn into plaques with a crusted surface.

A search of the literature shows 49% of cases are related to aquariums, 27% to fish injuries, and 9% due to saltwater exposure, but is overall rare in occurrence. In the United States, the annual incidence of *M. marinum* is 0.27 cases per 100,000 people. This case is important to better understand the cutaneous presentation, work-up, and course of treatment necessary to resolve the granulomatous process caused by *M. marinum*.

## References

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**Disclosures:** The author(s) have no financial relationships to disclose.