Sporotrichoid Spread: The Importance of the Whole Story

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Introduction

- Mycobacterium chelonae is a rapidly growing nontuberculous mycobacterium that can rarely cause skin and soft-tissue infections.
- Clinically, it is characterized by lymphangitic spread of erythematous and edematous ulcerations, nodules, or abscesses.
- Histologically, it is characterized by granulomatous inflammation and acid-fast bacilli on AFB and Fite stains[1].
- It can be treated with a 4 to 6-month course of antibiotics (e.g. macrolide, linezolid, clofazimine) as well as surgical debridement and removal[2].

Case Presentation

- **History:** A 68-year-old female presented with lymphangitic spread of firm, nontender subcutaneous nodules on the right arm. She denied fevers and felt well otherwise. She reported being pricked by rose bush thorns while gardening prior to the onset of her symptoms.
- **Exam**: Several firm, nontender subcutaneous nodules with sporotrichoid distribution were present on the right arm (Fig. 1).
- **Histopathology:** Initial punch biopsy showed fibrinoid necrosis of the dermis and subcutis with a rare granuloma and negative special stains for organisms. Repeat punch biopsy showed deep dermal and subcutaneous epithelioid granulomatous inflammation with focal central suppuration. Initial review of AFB, FITE, GMS, and PAS stains were interpreted as negative.
- **Clinical course:** The patient was empirically diagnosed with sporotrichosis. Further questioning, however, revealed that she had also changed the tank water of her aquarium just after sustaining the thorn prick. This raised concern for an atypical mycobacterial infection. Re-review of the AFB and Fite stains from the second biopsy found a single granuloma with central clearing positive for few mycobacterial forms. Shortly thereafter, tissue cultures grew M. chelonae and the patient was started empirically on azithromycin and linezolid. The antibiotics were not tolerated and the subcutaneous nodules were subsequently excised by general surgery with good response (Fig. 2).

Figures

Figure 1. *Subcutaneous nodules on right arm*

Figure 2. *Subcutaneous nodules on right elbow*

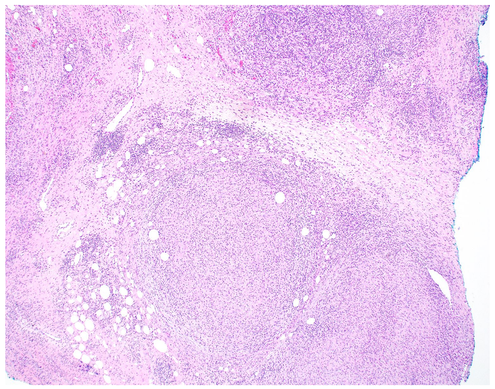

Figure 3. *H&E stain demonstrating deep dermal and subcutaneous epithelioid granulomatous inflammation with focal central suppuration.*

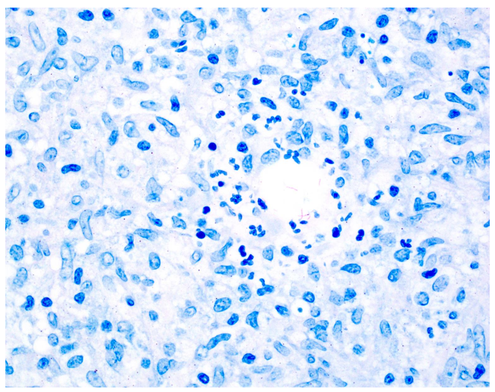

Figure 4. *FITE stain demonstrating a single granuloma with central clearing positive for a few mycobacterial forms.*

Discussion

- Several infectious etiologies, including various fungal infections, sporotrichosis, nocardiosis[3], atypical mycobacterial infections, leishmaniasis[4], and tularemia, can all present with lymphocutaneous sporotrichoid spread.
- Given that these conditions can present with nearly identical physical exam findings—lymphangitic spread of irregular, firm nodules that can ulcerate on an extremity[5]—a comprehensive clinical history, including possible exposures, is essential for diagnosis.
- Tissue cultures and biopsies should be taken. Histologically, granulomatous or suppurative inflammation can be seen and stains (e.g. AFB, Fite, GMS, PAS) can be used to distinguish between the different infectious etiologies.

Conclusion

Present is a case of Mycobacterium chelonae that was initially presumed to be sporotrichosis due to the patient's recent history of being pricked by a rose bush while gardening as well as sporotrichoid spread of subcutaneous nodules. This case illustrates how a comprehensive clinical history can impact histopathologic evaluations of entities with wide differential diagnoses, including known infections that can cause sporotrichoid spread.

References

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