Cutaneous Infection With *Mycobacterium xenopi*

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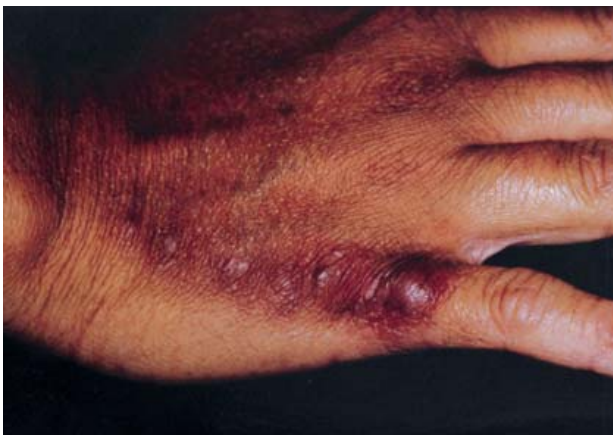
Mycobacterium xenopi is a well-documented cause of nontuberculous mycobacterial pulmonary disease, particularly in western Europe and Ontario, Canada.[1-13] Reports of extrapulmonary infections remain rare[2] and include involvement of peritoneum, epididymis, synovial fluid, lymph tissue, and bone.[14-18] Cutaneous infections also have been documented in the immunocompromised host[3,19]; but to our knowledge, only one case has been reported in an immunocompetent patient in western Europe.[12] We present another case of primary cutaneous infection caused by M *xenopi* in an immunocompetent patient living in the United States.

Case Report

A 38-year-old female experienced trauma and sustained an abrasion to the dorsal surface of her right hand. The lesion was localized to the dorsal soft tissue of the fifth metacarpal. Initially, it appeared as an erythematous area with eczematous changes. The primary care physician injected the lesion with 15 mg triamcinolone hexacetonide. Two weeks later, the lesion had an increased zone of erythema and had become nodular. The patient was placed on an oral quinolone for 2 weeks. The lesion remained painful and intermittently drained pus. Mild improvement was noted after doxycycline was added by a dermatologist who biopsied the lesion and sent the tissue for cultures.

The patient was then referred for an infectious disease consult. Physical examination revealed an afebrile, well-developed, otherwise healthy woman, unremarkable except for her hand, which was erythematous with a nodular lesion along the dorsal surface from the fifth finger to the carpal region (Figure).



Lesion along the dorsal surface of the right hand, 4 weeks posttrauma.

Mild edema was present, as well as tenderness with wrist movement. Her hemoglobin level was 12.2 g/dL, and her white blood cell count was 6600/mm^3 with 51% neutrophils and 11% lymphocytes.

Trimethaprine sulfa and rifampin were added to doxycycline pending biopsy results and culture for acid-fast bacillus and fungus. Aerobic and anaerobic cultures were negative. Biopsy revealed a poorly formed granulomatous lesion that grew M *xenopi* after 36 days. In vitro susceptibility testing showed that the isolate was sensitive to rifampin and streptomycin, but resistant to ethambutol and isoniazid. The regimen was modified to add ethambutol 400 mg 3 times daily, clarithromycin 500 mg twice daily, and ciprofloxacin 750 mg twice daily. The lesion slowly resolved.

Comment

M *xenopi* is a group II mycobacteria that is nontuberculous and acid-fast and may colonize tap water.[4,5] The isolation of M *xenopi* varies geographically. Endemic in France and England, it is the second most common nontuberculous mycobacterial pulmonary pathogen after *Mycobacterium kansasii* and is a com-

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mon isolate in Ontario, Canada.[6,7,13] It has been documented to cause nosocomial disease associated with the colonization of hospital water systems.[4,20] In certain situations, it causes pulmonary infections and, less frequently, infections such as arthritis and osteoarticular infections.[4,5,8] *M xenopi* typically affects immunosuppressed patients or those with preexisting lung disease.[4,5] Skin and soft-tissue infections are rarely described.[4-12] The optimal therapeutic regimen and duration of treatment for infection due to *M xenopi* are not clearly defined. Studies of in vitro susceptibilities have indicated that the organism is frequently resistant to isoniazid, rifampin, pyrazinamide, and ethambutol.[1,5,21,22]

Conclusion

We describe a case of cutaneous *M xenopi* in an immunocompetent host. The patient responded to a multidrug regimen and surgical debriding was not needed. The length of therapy was 12 months.

REFERENCES

1. Simor AE, Salit IE, Velland H. The role of *Mycobacterium xenopi* in human disease. *Am Rev Respir Dis*. 1984;129:435-438.
2. Miller WC, Perkins MD, Richardson WJ, et al. Pott's disease caused by *Mycobacterium xenopi*: case report and review. *Clin Infect Dis*. 1994;18:1024-1028.
3. Damsker B, Bottone EJ, Deligdisch L. *Mycobacterium xenopi*: infection in an immunocompromised host. *Human Pathol*. 1982;13:866-870.
4. Costrini AM, Mahler DA, Gross WM, et al. Clinical and roentogenographic features of nosocomial pulmonary disease due to *Mycobacterium xenopi*. *Am Rev Respir Dis*. 1981;123:104-109.
5. Banks J, Hunter AM, Campbell IA, et al. Pulmonary infection with *Mycobacterium xenopi*: review of treatment and response. *Thorax*. 1984; 376-382.
6. DesBordes-Lize J, Fouye G, Lelieur GM. Contribution a l'etude de Mycobacterium xenopi, a L'occasion d'une importante endemie hospitaliere. *Poumon Coeur*. 1970;26:1141-1182.
7. Beck A, Stanford JL. *Mycobacterium xenopei*: a study of sixteen strains. *Tubercle*. 1968;49:26-34.
8. Yuen K, Fam AG, Simor A. *Mycobacterium xenopi* arthritis. *J Rheumatol*. 1998;25:1016-1018.
9. Weksberg F, Fisher BK. Unusual tinea corporis caused by Trichophyton verrucosum. *Int J Dermatol*. 1986;25:653-655.
10. Rippon JW. Dermatophytes and dermatophytosis. In: *Medical Mycology: The Pathogenic Fungi and Pathogenic Actinomycete*. 3rd ed. Philadelphia: WB Saunders; 1988:169-175.
11. Prigogine TH, Stoffels G, Fauville-Dufaux M, et al. Primary psoas muscle abscess due to *Mycobacterium xenopi*. *Clin Infect Dis*. 1998;26:221-222.
12. Dautzenberg B, Mercat A. Mycobacterioses atypicques. *Presse Med*. 1994;23:1482-1488.
13. El Helou P, Rachlis A, Fong I, et al. *Mycobacterium xenopi* infection in patients with human immunodeficiency virus infection. *Clin Infect Dis*. 1997;5:206-210.
14. Shafter RW, Sierra MF. *Mycobacterium xenopi*, *Mycobacterium fortuitum*, *Mycobacterium kansasii*, and other nontuberculous mycobacteria in an area of endemicity for AIDS. *Clin Infect Dis*. 1992;15:161-162.
15. Gross WM, Hawkins JE, Murphy DB. Origin and significance of *Mycobacterium xenopi* in clinical specimens: water as a source of contamination. *Bull Int Union Tuberc*. 1976; 51:267-269.
16. Sennesael JJ, Maes VA, Perard D, et al. Streptomycin pharmacokinetics in relapsing *Mycobacterium xenopi* peritonitis. *Am J Nephrol*. 1990;10:422-425.
17. Engbaek HC, Vergmann B, Baess I, et al. *M xenopei*: a bacteriological study of *M xenopei* including case reports of Danish patients. *Acta Pathol Microbiol Scand*. 1967;69:576-594.
18. Feyen J, Martens M, Mulier JC. Infection of the knee joint with *Mycobacterium xenopi*. *Clin Orthop*. 1983;179:189-190.
19. Grange J, Collins C, Yates M. Bacteriological survey of tuberculous lymphadenitis in South-east England: 1973;1980. *J Epidemiol Community Health*. 1982;36:157-61.
20. Marks J, Cook J, Pringle JA. Bone abscess due to *Mycobacterium xenopi*. *Tubercle*. 1975;56:157-159.
21. Thomas P, Liu F, Weiser W. Characteristics of *Mycobacterium xenopi* disease. *Bull Int Union Tuberc Lung Dis*. 1988;63:12-13.
22. Tortoli E. Simonetti MT, Labardi C, et al. *Mycobacterium xenopi* isolation from clinical specimens in the Florence area: review of 46 cases. *Eur J Epidemiol*. 1991;7:677-681.
23. Smith MJ, Citron KM. Clinical review of pulmonary disease caused by *Mycobacterium xenopi*. *Thorax*. 1983;38:373-377.
24. Contreras MA, Cheung OT, Sanders DE, et al. Pulmonary infection with nontuberculous mycobacteria. *Am Rev Respir Dis*. 1988;137:149-152.