Sporotrichoid Pattern of *Mycobacterium chelonae-abscessus* Infection

Jessica L. Boulavsky, MD; Holly M. Wright, MD; Paul M. Rodriguez-Waitkus, MD, PhD; Andrew R. DiNardo, MD; Laila E. Woc-Colburn, MD; Harry Dao Jr, MD

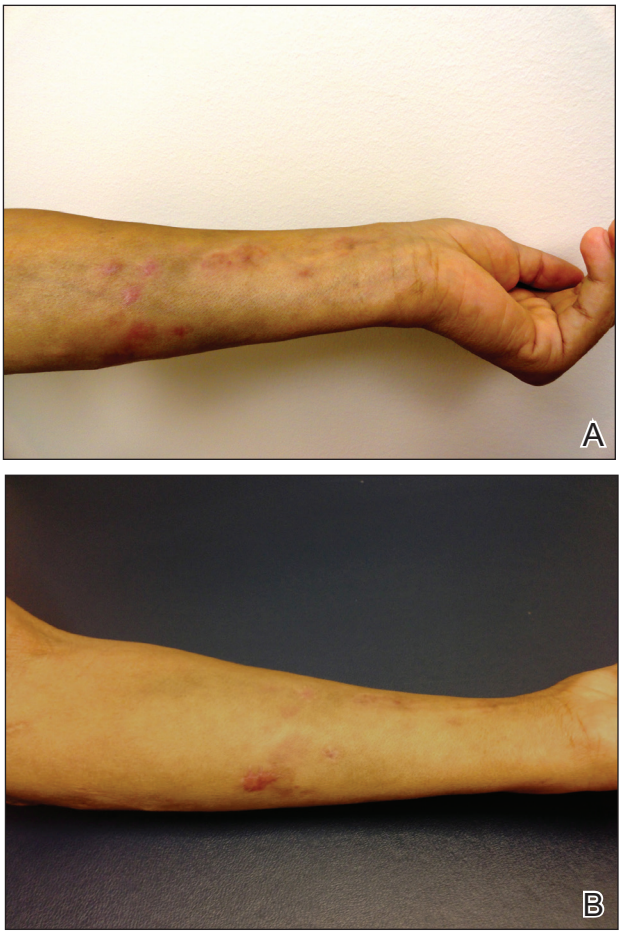
PRACTICE **POINTS**

- Dermatologists should consider atypical mycobacterial infections, including rapidly growing mycobacteria, in the differential diagnosis for lesions with sporotrichoid-pattern spread.
- Multidrug therapy often is required for treatment of infection caused by *Mycobacteria chelonae-abscessus* complex.

To the Editor:

We present a case of *Mycobacterium chelonae-abscessus* cutaneous infection in a sporotrichoid pattern, a rare presentation most often found in immunocompromised patients. A 34-year-old man with lupus nephritis who was taking oral prednisone, mycophenolate mofetil, and hydroxychloroquine presented with multiple erythematous fluctuant nodules and plaques on the left volar forearm in a sporotrichoid pattern of 3 months' duration (Figure, A). He denied recent travel, exposure to fish or fish tanks, and penetrating wounds. Punch biopsy showed granulomatous inflammation and scarring with negative tissue cultures. Repeat biopsies and cultures were obtained when the lesions increased in number over 2 months.

Final biopsy showed upper dermal granulomatous inflammation with karyorrhectic debris, suggesting infection, and acid-fast bacilli. Culture grew *M chelonae-abscessus* on Löwenstein-Jensen agar at 37°C and blood culture media from which the complex was identified using high-performance liquid chromatography. Empiric therapy with renal dosing based on the Infectious Diseases Society



Multiple erythematous fluctuant nodules and plaques on the left volar forearm in a sporotrichoid pattern before (A) and 2 months after receiving multidrug therapy managed by infectious disease (B).

From Baylor College of Medicine, Houston, Texas. Drs. Boulavsky, Wright, and Dao are from the Department of Dermatology; Dr. Rodriguez-Waitkus is from the Department of Pathology and Immunology; and Drs. DiNardo and Woc-Colburn are from the Department of Medicine, Section of Infectious Disease. Dr. Woc-Colburn also is from the National School of Tropical Medicine.

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Correspondence: Harry Dao Jr, MD, Department of Dermatology, Baylor College of Medicine, 1977 Butler Blvd, Ste E6.200, Houston, TX 77030 (harry.dao@bcm.edu).

of America statement of susceptibilities[1] was initiated with clarithromycin, doxycycline, and ciprofloxacin for 4 months. Furthermore, the prednisone dose was tapered to 7.5 mg daily. Two months later, the lesions regressed and ciprofloxacin was discontinued (Figure, B).

The sporotrichoid spread of nodules suggests infection with mycobacteria, *Sporothrix schenckii, Leishmania, Francisella tularensis,* or *Nocardia.* Most cultures for nontuberculous mycobacteria will grow on Löwenstein-Jensen agar between 28°C and 37°C. Runyon rapidly growing (group IV) mycobacteria are defined by their ubiquitous presence in the environment and ability to develop colonies in 7 days.[2] Cutaneous infections are increasing in prevalence, as reported in a retrospective study spanning nearly 30 years.[3] The presentation is variable but often includes the distal extremities and usually is a nodule, ulcer, or abscess at a single site; a sporotrichoid pattern is more rare. Preceding skin trauma is the major risk factor for immunocompetent hosts, and the infection can spontaneously resolve in 8 to 12 months.[1] In contrast, immunosuppressed patients may have no known source of infection and often have a progressive course with an increasing number of lesions and increased time until clearance.[4]

It is difficult to differentiate *M chelonae* and *M abscessus* based on growth characteristics, and they share the same 16S ribosomal RNA sequence commonly used to differentiate other mycobacterial species.[2] *Mycobacterium abscessus* can be more difficult to treat, thus distinction via polymerase chain reaction of the heat-shock protein 65 gene, *hsp65*, can be valuable in cases recalcitrant to initial therapy.[1]

The likelihood of *M chelonae* and *M abscessus* isolates to be initially sensitive to clarithromycin is 100%,[1] and this antibiotic remains the cornerstone of therapy. A clinical trial of treatments for *M chelonae-abscessus* found that clarithromycin monotherapy can be successful or complicated by resistance[5]; therefore, multidrug therapy is recommended. The antibiotic regimen for our patient was chosen to limit renal toxicity.

In summary, we report a case of *M chelonae-abscessus* cutaneous infection in a sporotrichoid pattern in a patient with lupus nephritis on immunosuppressive drugs. As the incidence of rapidly growing mycobacterial cutaneous infections rises, dermatologists must be aware of this pattern of infection.

REFERENCES

1. Griffith DE, Aksamit T, Brown-Elliot BA, et al. An official ATS/IDSA statement: diagnosis, treatment, and prevention of nontuberculous mycobacterial diseases. *Am J Respir Crit Care Med.* 2007;175:367-416.
2. De Groote MA, Huitt G. Infections due to rapidly-growing *Mycobacteria. Clin Infect Dis*. 2006;42:1756-1763.
3. Wentworth AB, Drage LA, Wengenack NL, et al. Increased incidence of cutaneous nontuberculous mycobacterial infection, 1980 to 2009: a population-based study. *Mayo Clin Proc.* 2013;88:38-45.
4. Lee WJ, Kang SM, Sung H, et al. Non-tuberculous mycobacterial infections of the skin: a retrospective study of 29 cases. *J Dermatol.* 2010:37:965-972.
5. Wallace RJ, Tanner D, Brennan PJ, et al. Clinical trial of clarithromycin for cutaneous (disseminated) infection due to *Mycobacterium chelonae. Ann Intern Med.* 1993;119:482-486.