Erythematous, Verrucous Plaques on the Dorsum of Left Hand of a 73-year-old Man

Yu-Ju Tsai  Shu-Ling Hu  Chung-Chin Cheng*

CASE REPORT

The 73-year-old man had diabetes mellitus and hypertension with medical control. He noticed an asymptomatic red lesion on the dorsal aspect of his left hand 3 years ago. New lesions extended to his left wrist later. He had received skin biopsy at other hospital and deep fungal infection was suspected histologically, but the culture results were all negative. At our department, 3 variable-sized, irregular-shaped, erythematous, verrucous plaques with pustules on the left hand and wrist were found. (Fig. 1a, 1b) Laboratory examinations including complete blood count, basic biochemistry/ electrolyte and chest X-ray were unremarkable. A biopsy from the border of the lesion on the wrist was taken and the specimen was stained with H & E (Fig. 2a, 2b), acid fast and PAS stain. Part of the specimen was sent for mycobacteria and fungus culture.

Fig. 1
(1a) There are 3 variable-sized, irregular-shaped, erythematous, hyperkeratotic, verrucous plaques on the dorsal aspect of the left hand and wrist showing sporotrichoid spread. (1b) Close up picture of the lesions on the left wrist shows some pustules on the verrucous, hyperkeratotic plaques with erythematous border.

Fig. 2
(2a) The epidermis reveals acanthosis with focal pseudocarcinomatous hyperplasia. There are microabscess and granuloma formation mainly in the upper dermis. (H&E 40X) (2b) The granuloma is composed of epithelioid cells with lymphoplasmacyte infiltrate and the presence of Langhans giant cell. (H&E 200X) No pathogen is found by PAS & acid-fast stain.
DIAGNOSIS: Mycobacterium Kansasii Infection (tissue culture proved)

DISCUSSION

*Mycobacterium kansasii*, first described in 1953 by Buhler and Pollack, is a slow-growing, photochromogenic mycobacterium which produces yellow pigment within 24 hours of bright light exposure. Under light microscopy, its appearance is relatively long, thick, and cross-barred. Unlike other nontuberculous mycobacteria (NTM), *M. kansasii* is rarely isolated from soil or water. Most likely, *M. kansasii* is acquired through either aspiration or local inoculation from the environment, and person-to-person transmission is unlikely.

The most common manifestation of *M. kansasii* infection is a chronic cavitary pulmonary disease similar to pulmonary tuberculosis. Incidence has increased with the advent of AIDS. After *Mycobacterium avium complex* (MAC), *M. kansasii* is the second most common opportunistic NTM infection associated with AIDS. Other manifestations of infection include localized infections of bone, joint, spleen, liver, lymph node, peritoneum or skin and a disseminated form (with overlap between these groups).

Only 2-5% of patients with *M. kansasii* infection have cutaneous lesions, and most have altered immune functions either by systemic disease or medication. Most patients with cutaneous lesions are residents of urban area with one limb being affected, reflecting the role of environmental exposure in acquiring the organism. The clinical appearance of *M. kansasii* cutaneous infection is heterogeneous, include sporotrichoid nodules, pustules, crusted ulcerations, verrucous or erythematous plaques, papulonecrotic tuberculid, abscess, cellulitis-like and oral or perianal ulcers. Raised lesions or ulcers are more common in immunocompetent patients, and the infiltrate tend to involve deep dermis only, sparing the subcutis. Diffuse foamy histiocytic infiltrate of dermis and subcutaneous fat, resembling that of lepromatous leprosy, is observed mostly in patient with profound immunodeficiency.

The most recent treatment guidelines described by the American Thoracic Society suggest cutaneous infection can be treated by the same regimen outlined for pulmonary disease in adults: triple therapy with isoniazid (300 mg), rifampin (600 mg), and ethambutol (25 mg/kg for the first 2 months then 15 mg/kg) given daily for 18 months or at least 12 months after clearance of the lesions.

Our case highlights the usual difficulty of diagnosis and management of atypical mycobacterial infection of the skin. Repeated biopsy and tissue culture should always be considered in highly suspected patients.

REFERENCES