A 56-year-old Man with Multiple Annular Erythematous Patches Containing Plaques and Nodules

Chang-Chieh Hsu  Hsiu-Chin Chen  Yu-Hung Wu  Pei-Lun Sun  Yang-Chih Lin

CASE REPORT

A 56-year-old man with diabetic mellitus presented with widespread annular erythematous patches on the buttocks, neck, and both legs. Several verrucous plaques and nodules were present within the annular patches (Fig. 1). Tinea corporis was diagnosed clinically because of the typical annular lesions. However, the plaques and nodules suggested a deeper fungal infection than usual, so an incisional biopsy of the largest nodule on the left thigh was performed. The specimen was sent for fungal and mycobacterial culture.

Fig. 1
(A)(B)(C) Verrucous plaques and nodules near annular erythematous patches on the left thigh, right buttocK, and right lower leg. (D) An annular erythematous patch on the left shin.

Fig. 2
(A) Pseudocarcinomatous hyperplasia and mixed granulomatous inflammation. (H&E, x20) (B) Mixed granulomatous inflammation (H&E, x100). (C) Thick walled spore (arrow) and arthroconidia-like structure (open arrow). (PAS stain, x400) (D) Chain of spores with mucinous coating. (PAS stain, x400)

Fig. 3
(A) White, downy hemispherical colonies on surface of V-8 juice agar. (B) View of the colony from the bottom. (C) Many single tear-shaped microconidia arrayed along the septate hyphae.

From the Department of Dermatology, Mackay Memorial Hospital
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Reprint requests: Hsiu-Chin Chen, M.D., Department of Dermatology, Mackay Memorial Hospital, No. 92, Sec. 2, Chung-Shan N Rd., 10449, Taipei, Taiwan
TEL: 886-2-2543-3355 ext. 2556  FAX: 886-2-2543-3642
DIAGNOSIS: Deep Dermatophytosis Caused by Trichophyton Rubrum

HISTOPATHOLOGY AND CULTURE RESULTS

Histopathologically, there was pseudocarcinomatous hyperplasia in the epidermis and diffuse mixed granulomatous inflammation in the dermis (Fig. 2A, 2B). A periodic acid-Schiff stain revealed many fungal elements in the infiltrate and giant cells (Fig. 2C, 2D). No other infectious organisms were demonstrated by acid-fast stain or Gram's stain. Cultures of the skin biopsy specimen and peripheral scales from one of the annular lesions both grew Trichophyton rubrum (Fig. 3). A mycobacterial culture of the biopsy tissue remained negative after two months. The patient was given topical clotrimazole cream on the first visit but did not return for a scheduled follow-up visit. He received oral fluconazole (200mg) for 5 days at our surgical department but never returned to our hospital again. Regression of nodular lesions was told through telephone.

DISCUSSION

Dermatophytes are common pathogens that cause superficial infections of the skin, nails, and hair. Rarely, they cause more aggressive, invasive infections. Deep cutaneous dermatophyte infection can present in various forms including lesions that are erythematous to violaceous, and fluctuant to firm papules, nodules, and plaques.1 Pustules, abscesses, subcutaneous nodules,2 and mycetoma-like lesions3,4 have also been reported. The presence of an apparent superficial dermatophyte infection associated with nodular lesions should be considered a clue to deep dermatophytosis.5 Histologically, the fungal elements in deep dermatophytosis may have a pleomorphic morphology, suggesting the organism has adapted to attempt to survive in the hostile environment of the dermis.5,6 Therefore, finding unusual shapes and varying morphological patterns of the fungal element also suggests a deep dermatophytosis.

Treatment of deep dermatophytosis with oral antifungal drugs is usually curative. Itraconazole, fluconazole, and terbinafine have all been used with good results.5,7 In brief, recognition of the clinical characteristic features, the histopathologic morphology, and fungal cultures are essential in the diagnosis of deep dermatophytosis.

REFERENCES