

What Is Your Diagnosis?



A 33-year-old woman who had recently emigrated from Cambodia presented with painful itchy lesions on her hands (top) and feet (bottom) of 2 months' duration. The lesions would gradually enlarge, break open, extrude a thick white material, and then slowly heal. She denied any prior skin conditions or relevant medical history. She was not taking any medications and denied using any herbal or folk medicines.

PLEASE TURN TO PAGE 123 FOR DISCUSSION

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The authors report no conflict of interest.

The Diagnosis: Perforating Granuloma Annulare

The patient had recently immigrated to the United States from Cambodia. At that time, a chest radiograph was performed by the US Bureau of Citizenship and Immigration Services; the radiograph was interpreted as unremarkable. The patient's purified protein derivative (tuberculin) status was not known. She denied any systemic concerns of illness.

Physical examination in the dermatology department showed multiple 5- to 10-mm, pink to violaceous, tender, firm subcutaneous nodules on the palmar and plantar surfaces of the hands and feet (Figures 1 and 2). Additionally, there were multiple 5- to 10-mm, partially eroded, indurated papules with central umbilication and hyperkeratotic plugs.

Biopsy was performed on one of the nodular lesions and one of the partially eroded lesions on the palm of the left hand (Figure 3). The histopathology of the nodular lesion (Figure 3A) showed a large palisaded granuloma within the reticular dermis with necrobiotic collagen and mucin deposition at its center (Figure 4). Histopathology of the partially eroded lesion showed epidermal erosion overlying a zone of degenerated collagen, surrounded by a poorly formed palisade of lymphocytes and histiocytes. There was no evidence of caseous necrosis. Additionally, Mallory trichrome–stained sections (Figure 3B) highlighted degenerated collagen fibers both within the necrobiotic zone as well as extruding through the center of the epidermal erosion, so-called trans-epidermal elimination of collagen. Mucin stains

revealed a moderate amount of mucin deposition within the necrobiotic zone. Periodic acid–Schiff and Gomori methenamine–silver stains were negative for fungal elements, and Fite and Ziehl–Neelsen stains were negative for acid-fast bacteria. Based on the clinical and histologic presentation, a diagnosis of perforating granuloma annulare (GA) was made. The patient refused additional biopsy for culture. The patient was given a trial of high-potency topical steroids. She was then lost to follow-up.

Perforating GA, first described by Owens and Freeman¹ in 1971, is a rare subset of GA. One report concluded that perforating GA may comprise as much as 5% of GA cases,² though this percentage seems somewhat high in our opinion. The pathogenesis of the condition is unknown, but an abnormal, delayed hypersensitivity, helper T cell (T_H1) response to exogenous antigens is considered a likely factor in the development of the condition.³ The transepidermal elimination of collagen is thought to be due to the superficial location of necrobiotic granulomas. The exclusive acral involvement in this patient favoring the palmar and plantar surfaces is in contrast to the more commonly described presentation on the dorsal aspect of the hands. The differential diagnosis of perforating GA includes elastosis perforans serpiginosa, perforating folliculitis, reactive perforating collagenosis, and perforating sarcoidosis. A high incidence of perforating GA has been reported in the Hawaiian Islands.⁴ Treatment of perforating GA generally is regarded as unsatisfactory;



Figure 1. The patient's hand with multiple indurated papules with central umbilication.



Figure 2. The patient's foot with multiple firm violaceous nodules as well as eroded papules with central umbilication.

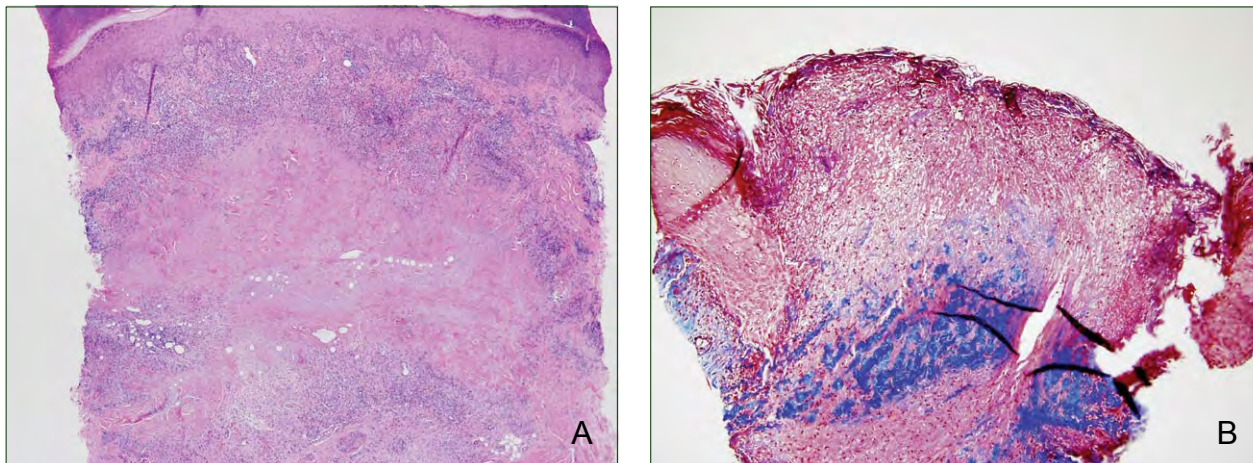


Figure 3. Skin biopsy of a nodular lesion (A)(H&E, original magnification $\times 40$) and a partially eroded lesion on the hand (B)(Mallory trichrome, original magnification $\times 40$).

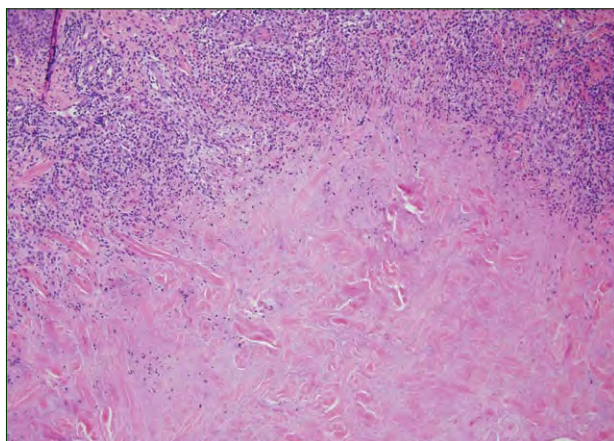


Figure 4. Skin biopsy of a nodular lesion on the hand (H&E, original magnification $\times 100$).

however, options include high-potency topical steroids, intralesional triamcinolone acetonide, cryotherapy, and excision of isolated lesions.

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