Isotretinoin as a Treatment for Axillary Granular Parakeratosis

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Granular parakeratosis is a condition presenting with hyperkeratotic plaques and papules that are confined to intertriginous body sites. The exact etiology is unknown, but chemical and mechanical irritation and a moist environment are potential factors. Numerous treatments have been attempted, yielding variable results. We present a case of axillary granular parakeratosis, previously unresponsive to topical treatment, that resolved after a 2-week regimen of isotretinoin. We conclude that treatment of axillary granular parakeratosis with isotretinoin is rapid and effective and should be considered in patients with no other contraindications to isotretinoin.

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Axillary granular parakeratosis, first described by Northcutt et al[1] in 1991, is a unique axillary eruption with distinct histopathologic findings consisting of unilateral or bilateral, usually pruritic, axillary erythematous or hyperpigmented patches that histologically exhibit hyperparakeratosis with the maintenance of keratohyalin granules in the stratum corneum.[1] Many treatments have been attempted with varying results.[1-8] We report a case of axillary granular parakeratosis, previously unresponsive to topical treatment, which resolved after 2 weeks of isotretinoin therapy.

Case Report

A 60-year-old woman presented with vegetative brown verrucous plaques on both axillae, with no other areas of involvement (Figure, A). The eruption had been present for 6 weeks. It was slightly irritating but otherwise asymptomatic. There was no prior history of similar eruptions. A biopsy demonstrated broadened and basophilic staining of the stratum corneum as well as a thickened and retained granular layer. Abundant small basophilic granules were present in the stratum corneum. The remaining epidermis demonstrated some papillomatosis and hyperplasia with minimal spongiosis. Within the dermis, there was a perivascular and interstitial lymphohistiocytic infiltrate. A periodic acid-Schiff stain was negative for fungal elements. The biopsy findings were consistent with axillary granular parakeratosis.

The patient reported a lack of response to mild topical corticosteroids. Tazarotene cream 0.1% was prescribed, yielding no improvement, only irritation. Isotretinoin (40 mg/d) resulted in complete resolution in 2 weeks (Figure, B). Two months later, the rash reappeared. The patient completed the remaining 8-day supply of isotretinoin and noted complete resolution again. No further recurrences have occurred.

Comment

The term *axillary granular parakeratosis* was originally proposed by Northcutt et al.[1] The terms *granular parakeratosis* and *intertriginous granular parakeratosis* have since been proposed due to findings in other areas of the body.[5,9] The clinical differential diagnosis includes Hailey-Hailey disease, dermatophytosis, pemphigus vegetans, acanthosis nigricans, Bowen disease, and contact or nummular dermatitis.[2,5] The etiology is unknown, but some proposed mechanisms are contact irritation from antiperspirant or deodorant, chronic exposure to moisture, mechanical irritation, or compulsive behaviors.[1,2] Northcutt et al[1] hypothesized that an extrinsic stimulus, such as deodorant, produces axillary granular parakeratosis either by inducing epidermal proliferation that maintains both the nuclei and keratohyalin granules in the stratum corneum or by blocking the formation of filaggrin from profilaggrin. Metze and Rutten[5] suggest that a basic defect in processing profilaggrin to filaggrin, as seen in granular parakeratosis, results in a failure to degrade keratohyalin granules and aggregates keratin filaments during cornification.

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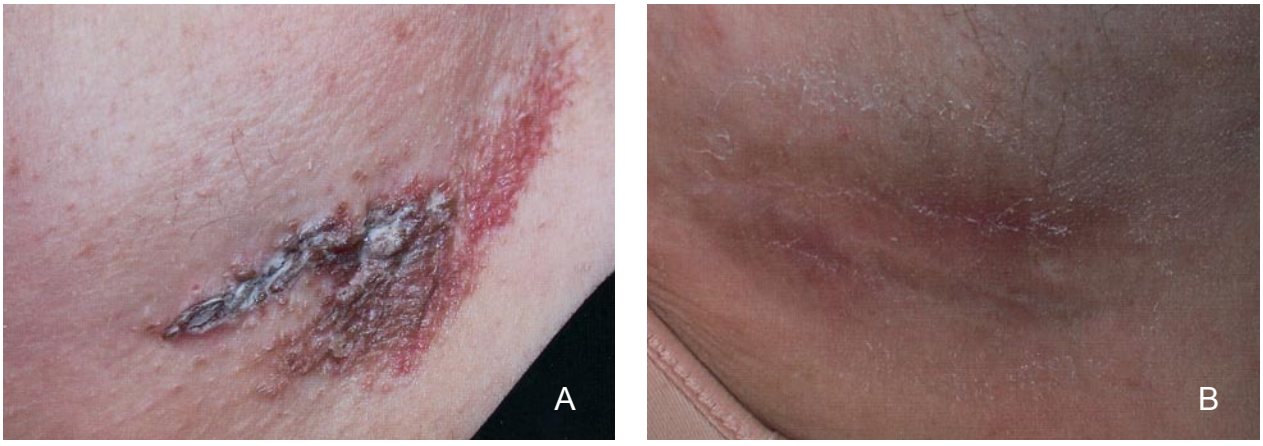

Vesicular vegetative plaques in axilla (A). Complete resolution 2 weeks after initiating isotretinoin therapy (B).

Numerous treatments have been attempted, yielding variable results.[1-10] Some cases resolved by simply discontinuing deodorant use,[5,6] while another resolved spontaneously.[5] There are reports of clearing with vitamin D analogs.[3,7] Our patient displayed rapid response in 2 separate instances with isotretinoin. The benefit of isotretinoin has been reported in 1 other case.[10] The use of topical tretinoin was found effective in 1 case.[11] We conclude that treatment of axillary granular parakeratosis with isotretinoin is rapid and effective and should be considered in patients with no other contraindications to isotretinoin.

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