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Title

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Journal

Dermatology Online Journal, 31(2)

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Publication Date

2025

DOI

10.5070/D331265295

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Case Report

Secondary anetoderma following lichen planus

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Keywords: anetoderma, lichen planus, secondary

Dermatology Online Journal

Vol. 31, Issue 2, 2025

Abstract

Anetoderma is commonly characterized by well-circumscribed areas of slack or baggy skin related to the loss of elastic fibers in the dermis. It has associations with some well-defined skin lesions, such as acne vulgaris and varicella. We report a 67-year-old woman with clinical and pathologically confirmed anetoderma at sites of previously documented lichen planus.

Introduction

Anetoderma commonly presents as well-circumscribed areas of slack or baggy skin areas related to the loss of elastic fibers in the dermis.¹ Primary anetoderma develops in clinically normal skin and secondary anetoderma arises following various inflammatory skin diseases.¹ The most reported antecedents are believed to be acne vulgaris and varicella.² The presentation of secondary anetoderma following lichen planus is rare.³ Herein, we report the case of anetoderma secondary to lichen planus.

Case Synopsis

A 60-year-old woman presented with a six-month history of an itchy rash and discoloration on the back, abdomen, and upper and lower extremities. Oral antihistamines and hydrocortisone/pramoxine 1% cream twice a day resulted in no improvement. Physical examination revealed lichenified papules and plaques on the abdomen, lower back (**Figure 1A**), forearms, and thighs along with hyperpigmented macules and patches. A punch biopsy taken from the right lower back showed an upper dermal, band-like, lymphocytic infiltrate with saw-toothed epidermal hyperplasia, hypergranulosis, and compact hyperorthokeratosis (**Figure 1B**). A diagnosis of lichen planus was made, and the patient was prescribed a two-week prednisone taper and metronidazole 500mg twice daily.

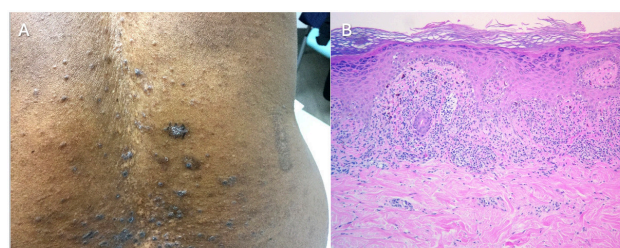


Figure 1. Lichen planus: clinical presentation, and histopathology. **A)** Scattered, lichenified, hyperpigmented papules and plaques on the lower back. **B)** Lichenoid infiltrate in the upper dermis with saw-toothed epidermal hyperplasia, hypergranulosis, and compact hyperorthokeratosis. H&E, 400 $\times$.

Three months later, there were significantly fewer lichenified, hyperpigmented papules on the back and abdomen, but pruritus was persistent. The patient was advised to continue taking 500mg metronidazole twice daily.

The patient presented 6 years later with many discrete and confluent yellowish papules and plaques on the mid lower back at the same location as the previous lichen planus lesions (**Figure 2A**). Biopsy showed a mild elongation of the epidermal rete. The upper dermis was slightly edematous and showed wispy collagen bundles and slightly increased fibrocytes (**Figure 2B**). Verhoeff Van Gieson stain showed lack of elastin fibers in the papillary and superficial reticular dermis (**Figure 2C**). A diagnosis of anetoderma was rendered. The patient was prescribed a two-week prednisone taper as well as mupirocin 2% ointment. The biopsy results were discussed with the patient and appropriate follow-up was suggested.

Case Discussion

Lichen planus is an inflammatory dermatosis that can involve skin and mucosa.⁴ Cutaneous lichen planus, which

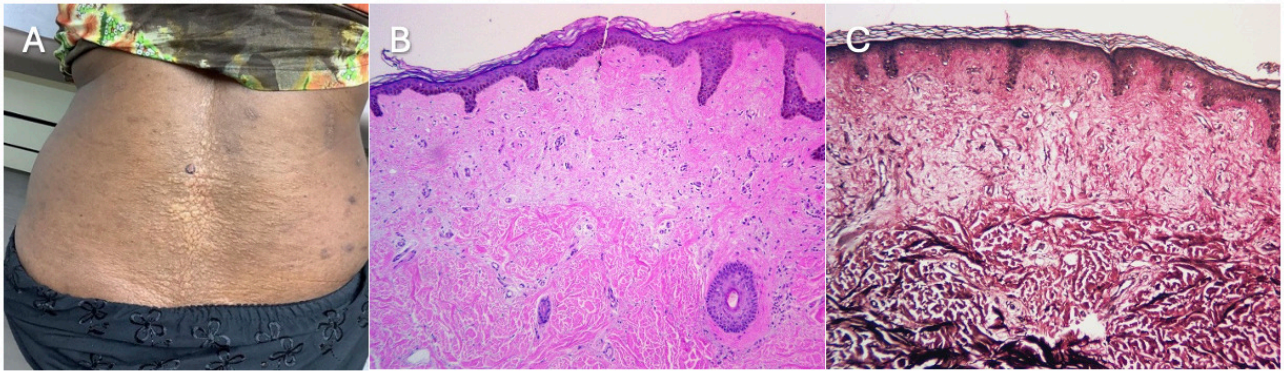


Figure 2. Anetoderma: clinical presentation, histopathology and immunohistochemistry (6 years later). **A)** Discrete and confluent, soft, yellowish papules and plaques on the lower back. **B)** Elongation of epidermal rete, with slightly edematous appearance of the upper dermis H&E, 100 $\times$. **C)** Verhoeff Van Gieson stain shows lack of elastin fibers.

is estimated to have an incidence of <1%,^{4,5} is characterized by flat-topped, pruritic, violaceous, polygonal papules and plaques.^{4,5} The lesions often resolve with persistent post-inflammatory hyperpigmentation especially in dark-skinned patients.⁴ Treatment of lichen planus includes immunosuppressants, such as high-potency topical corticosteroids, prednisone tapers, and topical calcineurin inhibitors.⁶ Additionally, metronidazole has also shown efficacy in the treatment of lichen planus.⁷⁻⁹

Secondary anetoderma arises at sites of prior inflammatory/infectious skin lesions, with acne vulgaris and varicella believed to be the most frequently reported antecedent.² However, a number of other pathological conditions can also precipitate anetoderma, such as lichen planus, syphilis, sarcoidosis, tuberculosis, Lyme disease and mastocytosis.^{2,3}

While the precise pathogenic mechanism of anetoderma remains unknown, it is hypothesized that the degradation of dermal elastic fibers may be a result of an imbalance between metalloproteinases and their inhibitors.¹⁰ This imbalance leads to the characteristic clinical manifestation of localized areas of slack skin, which can present as round, atrophic depressions, wrinkled macules/patches, or herniated sac-like protrusions surrounded by a border of normal skin.^{1,2} The lesions may present in a variety of colors from skin-colored, white, gray, brown, or blue, and their size may vary from millimeters to centimeters.¹¹ Anetoderma is most commonly found on the trunk and the proximal extremities.¹¹ Once lesions have occurred, they generally remain unchanged for at least 15 years.¹²

The reported treatments of anetoderma include colchicine, hydroxychloroquine, vitamin E, penicillin, aminocaproic acid, aspirin, niacin, dapsone, and phenytoin.¹³ The short-term outcomes of these treatments

have been variable, but the long-term outcomes generally have not been successful.¹³

Anetoderma following lichen planus is rare. Raegan et al reported a case of anetoderma occurring in an HIV-infected man with a history of syphilis, lichen planus, and hepatitis C virus infection.³ Physical examination revealed pruritic, violaceous, hyperkeratotic papules and plaques on the anterior aspect of the lower extremities; histopathology confirmed the diagnosis to be lichen planus. Further examination showed many skin-toned papules localized on the central portion of the lower back. Histopathology showed loss of elastic fibers in the papillary dermis, confirming anetoderma. Given the lack of pruritus in the involved area and the concurrence of HIV disease and syphilis, it was concluded that either the HIV disease or the syphilis, rather than the lichen planus, was the condition likely associated with the anetoderma.

Conclusion

In conclusion, we present a patient with anetoderma secondary to lichen planus, a rare sequela of this condition. Although other dermatoses, such as acne vulgaris and varicella, are more common antecedents to anetoderma, these slack skin lesions can be a consequence of a number of inflammatory dermatoses. Details of pathogenesis of anetoderma and potential treatments remain to be elucidated.

Potential conflicts of interest

The authors declare no conflicts of interest.

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