Actinic granuloma presenting as tender, linear plaques on the lateral fingers in a patient with newly diagnosed esophageal cancer

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INTRODUCTION

Actinic granuloma is a granulomatous reaction resulting from longstanding sun damage to the dermis. It is described clinically by the appearance of flesh-colored or pink papules, which classically coalesce into annular lesions.[1] Diagnosis is typically made histopathologically, with findings of granulomatous inflammation associated with elastophagocytosis and macrophage ingestion of elastotic fibers.[2] We report the details of a 67-year-old man with an unusual presentation of actinic granuloma, with linear plaques of the lateral fingers in the setting of recently diagnosed esophageal cancer.

CASE REPORT

A man in his late 60s with newly diagnosed stage IV esophageal adenocarcinoma presented with tender, nonpruritic, plaques on his dorsal and lateral fingers and dorsal hands for 3 weeks. The lesions originally appeared on the right digits, progressing to involve the left digits. He applied over-the-counter topical hydrocortisone creams without any improvement. The patient had a history of hypertension and gout treated with losartan and allopurinol, respectively. Physical examination found violaceous papules coalescing into plaques on the dorsal right first, second, and third digits and left first and second digits extending onto the distal aspect of the dorsal hands. There were also linear violaceous plaques on the lateral second and third digits of the right hand and the lateral second digit of the left hand (Fig 1). No other areas of skin involvement were observed.

A 4-mm punch biopsy specimen was obtained from the lateral second digit of the right hand, which showed lymphocytes around blood vessels and histiocytes between collagen bundles (Figs 2 and 3). Palisading granulomas associated with increased interstitial mucin were not identified. The presence of multinucleated histiocytes engulfing solar elastotic fibers was observed (Fig 3). Results of microscopy using Ziehl-Neelsen staining and Gomori methenamine silver staining were negative for infectious causes. Elastin stain highlighted the presence of elastotic fibers engulfed by giant cells. These findings were consistent with those of actinic granuloma. The diagnosis was reached on features of histopathology, as the presentation of linear plaques clinically in this case was unusual compared with those previously described.

The patient started 0.05% clobetasol ointment to affected areas twice daily. At his 4-week follow-up, however, his plaques persisted. Of note, he also received his first chemotherapy infusion for esophageal adenocarcinoma during this period. It was recommended that he apply 0.05% clobetasol ointment application under occlusion, and his plaques were nearly resolved at his 3-month follow up visit.

DISCUSSION

Described in 1975 by O'Brien,[1] a general pathologist in Australia, actinic granuloma is a rare

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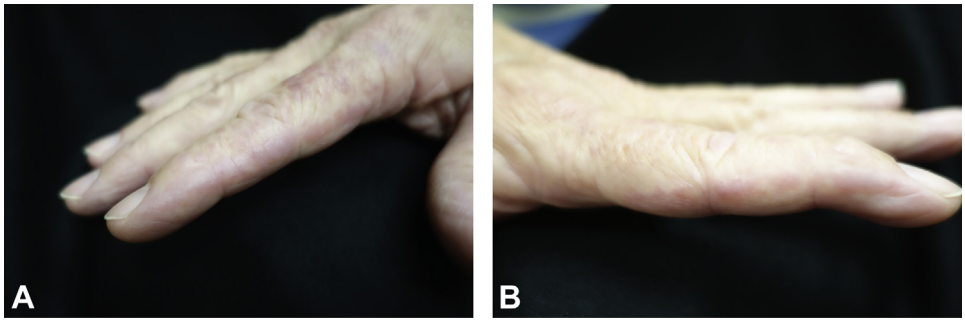

Fig 1. **A** and **B,** Linear violaceous plaques on the dorsal and lateral digits of the hands.

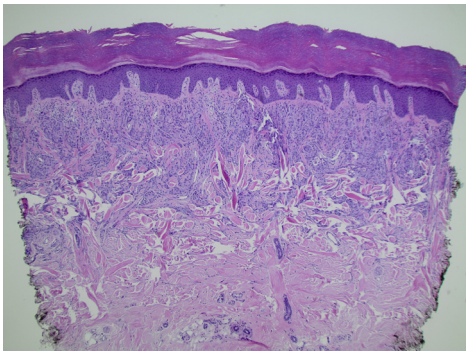

Fig 2. Histopathologic image of punch biopsy specimen. (Hematoxylin-eosin stain; original magnification: ×40.)

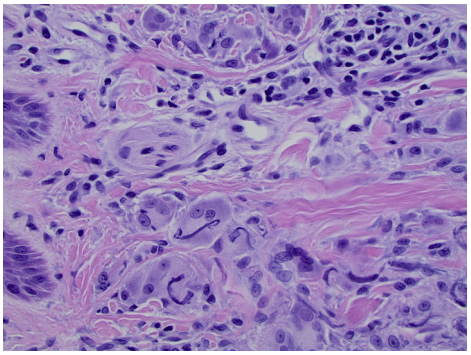

Fig 3. Histopathologic analysis shows solar elastotic fibers engulfed by multinucleated histiocytes. (Hematoxylin-eosin stain; original magnification: ×200.)

dermatosis typically affecting individuals with a longstanding history of sun exposure. Clinically, it is characterized by the appearance of annular erythematous plaques with central clearing typically in sun-exposed areas such as the face, neck, and chest. Similarities in appearance with granuloma annulare have fueled controversy as to whether actinic granuloma is a distinct entity. However, differences in histopathologic features have since favored the 2 entities to represent distinct conditions.[2,3]

The diagnosis of actinic granuloma is typically made histopathologically. The presence of multinucleated giant cells with degenerating elastic fibers and the absence of mucin is significantly associated with actinic granuloma.[2] Features favoring a diagnosis of granuloma annulare include an inflammatory infiltrate in a palisaded pattern surrounding degenerating collagen with mucin.[2] Special staining using the Verhoeff method is often helpful in highlighting the presence of degenerating elastic fibers and elastophagocytosis in actinic granuloma. Likewise, microscopy using Ziehl-Neelsen and Gomori methenamine silver staining may be used to exclude infectious etiologies.

The pathogenesis of actinic granuloma is largely unknown; however, solar elastosis is believed to be a triggering factor.[1,4] In this hypothesis, degenerating elastic tissue is believed to become a target for an immunologic reaction. Relationships have been proposed between actinic granuloma and diabetes mellitus, relapsing polychondritis, temporal arteritis, erythema nodosum, X-linked–dominant protoporphyria, cutaneous amyloidosis, alcoholic liver disease, and pseudoxanthoma elasticum.[5-8]

Treatment of actinic granuloma generally includes avoidance of sun exposure, regular sunscreen use, and topical, oral, or intralesional steroids.[9] Over time, some patients experience complete resolution of the lesions without any treatment intervention.[7] As with the case presented, several patients do not respond to topical therapies alone. The use of acitretin, isotretinoin, cyclosporine, chloroquine, pentoxifylline, cryotherapy, psoralen ultraviolet A photochemotherapy, and methotrexate have been described in the literature with some success.[7,9,10] Treatment should be selected on a case-by-case basis considering possible side effects.

Actinic granuloma represents an often asymptomatic, uncommon dermatosis easily obscured by similarities to others in clinical appearance. The salient features of this case are many. We describe an atypical clinical presentation of a patient with

linear plaques located on the dorsal and lateral surfaces of the digits. Although the lateral digits are not a typical site of sun exposure, our patient received enough sun exposure to these sites to cause actinic damage on histology. The photodamage appreciated on the biopsy of his lateral digit could have resulted from sun exposure received while driving a vehicle. Hence, we feel his presentation is consistent with that of previously reported literature, although anatomically unusual. In accordance with previously published reports, this patient was not initially responsive to topical therapies. Slow, near-complete resolution of lesions was observed with topical steroid application under occlusion over a 3-month period. Our patient did not display any of the previously described disease associations. However, this case is the first, to our knowledge, describing the development of actinic granuloma in the setting of a recently diagnosed solid organ carcinoma. Other inflammatory dermatoses such as acute febrile neutrophilic dermatosis, scleromyxedema, and amyloidosis, among others, have been associated with internal malignancies.[11] A substantial association between actinic granuloma and malignancy remains to be seen, as further research is warranted in this area.

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