Annular polycyclic plaques on the chest and upper back

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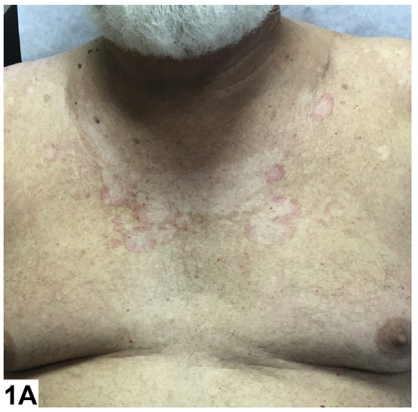

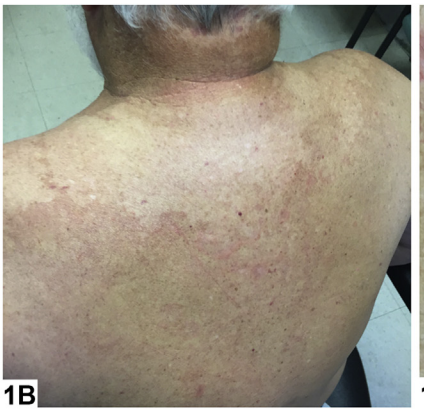

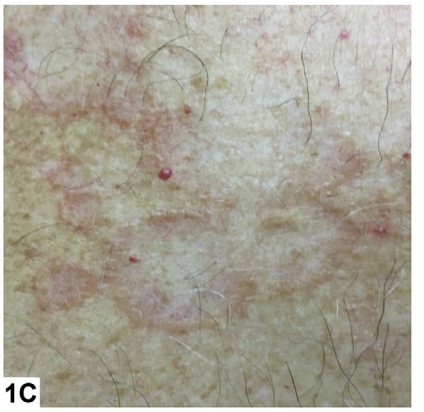

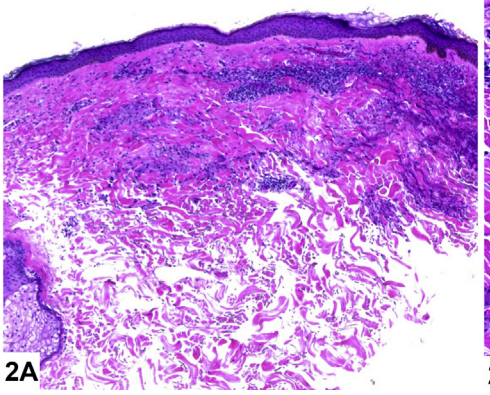

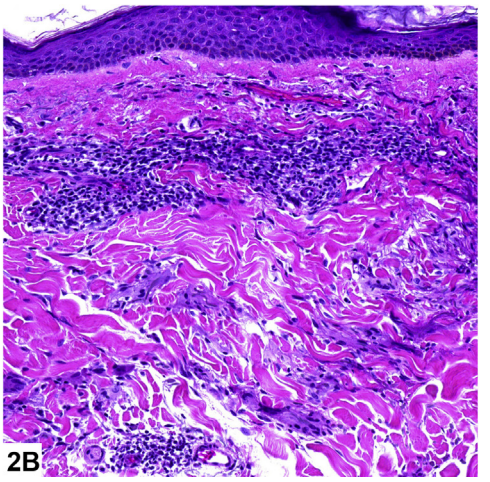

A 75-year-old man presented with a 20-year history of intermittent slow-growing annular plaques on his chest, back, and upper arms. No preceding viral illness or new medications were started before the appearance of the rash. Physical examination found multiple photodistributed pink, annular, polcyclic rings with central clearing covering the chest, upper back, and upper arms (Fig 1). A 4-mm punch biopsy was sent for routine histology. Histopathology found middermal interstitial infiltrate of histiocytes and giant cells without necrobiosis or mucin. (Fig 2).

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Question 1. What is the most likely diagnosis?

A. Tinea imbricata

B. Granuloma annulare (GA)

C. Actinic granuloma

D. Necrobiosis lipoidica diabeticorum

E. Erythema marginatum

Answers:

A. Tinea imbricate — Incorrect. Tinea imbricata is a slowly progressive superficial fungal infection caused by the dermatophyte *Trichophyton concentricum*. Endemic to Asia and South America, it appears as pruritic concentric rings and a characteristic amount of scale.

B. GA — Incorrect. GA is a benign granulomatous inflammatory disorder of the dermis, the cause of which is unknown. It presents as asymptomatic, smooth papules or annular plaques with a predilection for the extremities. Although some consider actinic granuloma to be a subset of GA, the presence of necrobiosis and mucin deposition within palisaded histiocytes differentiate GA from actinic granuloma.

C. Actinic granuloma — Correct. Actinic granuloma, or annular elastolytic giant cell granuloma (AEGCG), is a rare benign granulomatous disorder with unclear etiology. Patients have multiple asymptomatic annular concentric plaques on sun-exposed areas with characteristic hypopigmented or atrophic center. Chronic ultraviolent radiation is thought to be a major risk factor, and for this reason, one can appreciate phagocytosis of elastic fibers and solar elastosis in the periphery of the specimen histologically. According to some sources, the term *actinic granuloma* is reserved for AEGCG lesions occurring in sun-exposed areas.[1]

D. Necrobiosis lipoidica diabeticorum — Incorrect. Necrobiosis lipoidica diabeticorum is a disorder of collagen alteration with granuloma formation thought to be associated with diabetes mellitus. It presents as symptomatic slowly enlarging shiny, red-brown plaques on the shins.

E. Erythema marginatum — Incorrect. Erythema marginatum is an annular erythema associated with rheumatic fever. Evanescent, figurate, polycyclic patches that spread centrifugally on the extremities and trunk appear on children, are self-limited, and only last a few days.

Question 2. On what part of the body does this condition most commonly occur?

A. Acral surfaces

B. Intertriginous areas

C. Seborrheic distribution

D. Sun-exposed areas

E. Flexural surfaces

Answers:

A. Acral surfaces — Incorrect. Actinic granuloma characteristically occurs on sun-exposed skin, with a predilection for the chest and the back, not acral surfaces.

B. Intertriginous areas — Incorrect. Appearance of a concentric rash in the intertriginous areas would be more characteristic of a condition such as tinea imbricata.

C. Seborrheic distribution — Incorrect. Although actinic granuloma does occur on the chest and upper back, it does not affect other seborrheic locations like the eyebrows, nasolabial folds, and post auricular surfaces.

D. Sun-exposed areas — Correct. Thought to be an inflammatory reaction to actinically damaged elastic fibers, actinic granuloma has a predilection for sun-exposed skin. It occurs most commonly on the upper chest, back, face, arms, and dorsal hands.[2]

E. Flexural surfaces — Incorrect. AEGCG does not typically occur in flexural surfaces and instead appears on chronically sun-damaged skin.

Question 3. What histologic finding is a hallmark of this condition?

A. Elastophagocytosis

B. Palisading histiocytes surrounding altered dermal collagen and mucin

C. Plasma cells

D. Hyphae in the stratum corneum

E. Horizontal degenerated collagen between layers of granuloma

Answers:

A. Elastophagocytosis — Correct. Phagocytosis of chronically sun-damaged elastotic material by histiocytes in the presence of giant cells is a characteristic finding in actinic granuloma.[3] The

absence of palisading histiocytes, necrobiosis, and mucin distinguishes actinic granuloma from granuloma annulare.

B. Palisading histiocytes surrounding altered dermal collagen and mucin — Incorrect. Palisading histiocytes with alterations in dermal collagen and mucin deposition are characteristic of granuloma annulare. The absence of these findings helps distinguish prototypical granuloma annulare from actinic granuloma.

C. Plasma cells — Incorrect. Plasma cells can be found in other granulomatous disorders such as necrobiosis lipoidica diabeticorum but are not typically seen in actinic granuloma.

D. Hyphae in the stratum corneum — Incorrect. Hyphae within the stratum corneum are commonly seen in tinea corporis or tinea imbricata and would not be found in actinic granuloma.

E. Horizontal degenerated collagen between layers of granuloma — Incorrect. This finding is typically seen in necrobiosis lipoidica diabeticorum and is not typically seen in actinic granuloma.

Abbreviations used:

AEGCG: annular elastolytic giant cell granuloma
GA: granuloma annulare

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