Granuloma annulare (GA) is a chronic skin condition that presents as discolored plaques in a ring formation. This skin condition is seen in 0.1-0.4% of patients presenting to dermatology offices and is 2.5 times more common in females. The exact pathogenesis is unknown, however, inciting factors such as trauma, insect bites, tuberculosis skin tests, vaccines, sun exposure, and infections have been implicated. The most common histopathological findings include dermal lymphohistocytic infiltration and degenerated collagen.

Granuloma annulare has been associated with numerous disorders including diabetes mellitus, dyslipidemia, thyroid disorder, malignancy, and HIV infection. The five identified variants of granuloma annulare include localized GA, generalized GA, subcutaneous GA, patch GA, and perforating GA. The most common subtype, localized GA, is a non-scaly, erythematous annular plaque on the distal extremities seen in the first three decades of life. Generalized GA accounts for about 15% of all GA cases, is most common in the 4th through 7th decades, and consists of numerous erythematous papules and plaques found on the trunk and extremities. Subcutaneous GA is the most common type of GA found in children. Perforating GA (PGA) is most often found in children or young adults with an increased prevalence in Hawaii. PGA presents as erythematous papules that can be either localized to the extremities or widespread and may develop into umbilicated papules with clear-to-white discharge. The pathology of PGA consists of trans-epidermal elimination of mucinous degenerated collagen surrounded by palisading lymphohistocytic granulomas.

Case Report

A 60-year-old Caucasian male with past medical history of diabetes and hypertension treated with lisinopril who presented with a 6-week history of multiple skin lesions on the left and right arms. Patient denied any systemic symptoms such as fever, chills, night sweats or weight change. Patient reported the lesions were tender when palpated. He denied any previous treatment.

Laboratory Tests:

- Glucose 340 mg/dL
- Triglyceride 256 mg/dL
- RPR Screen Reactive
- RPR Titre 1:52
- Treponema pallidum Antibody-PAReactive

Histopathology:

Two punch biopsies showed a patchy lymphocytic infiltrate in the dermis, accompanied by histiocytes and some histiocytic giant cells palisaded around less cellular areas. The latter have thick collagen bundles with diminished numbers of fibroblasts in their centers. There is irregular epidermal hyperplasia with small collections of neutrophils within some of the more jagged foci, and granulation tissue near them.

Granuloma annulare (GA) is a granulomatous inflammatory disorder of the skin not uncommonly seen. Perforating granuloma annulare (PGA) is a rare clinical variant occurring in up to 5% of patients with GA, first described in 1971 by Owens and Freerian. PGA has a chronic course with lesions on the extremities or less commonly generalized to involve the trunk and extremities. The primary lesion is a small umbilicated papule, scale-crust or focal ulceration primarily on the dorsal hands and fingers and histologically exhibits transepidermal elimination of degenerating collagen.

Two punch biopsies showed mucin deposition in the centers of the granulomatous foci, although not as much in most cases of granuloma annulare. Some transdermal elimination evidence was observed, which histologically correlates with the crusted areas seen clinically. Atypical presentation of necrobiosis lipoidica was also considered as a possibility. However, most cases of this variant are now considered to be annular elastolytic giant cell granuloma (AEGC), also known as actinic granuloma, which is in turn regarded by many as a variant of granuloma annulare. The sparing of elastic fibers in an elastic von Gieson stain is against necrobiosis lipoidica.

Secondary syphilis was treated with doxycycline 100mg by mouth twice daily for 14 days. The patient was treated with topical Clobetasol 0.05% ointment twice daily to the skin lesions until flat and no longer erythematous. Treatment of the localized form of PGA using intratissue corticosteroids or topical high-potency corticosteroids may also be used. Topical imiquimod, topical calcineurin inhibitors pimecrolimus and tacrolimus, cryotherapy, and simple excision have been reported treatments for PGA. The treatment of perforating granuloma annulare is often unsuccessful.

References