A middle-aged lady with bilateral and symmetrical erythematous patches on her lower extremities: What is your diagnosis?

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CLINICAL PRESENTATION

A 35-year-old woman presented to the dermatological clinic of Shahid-Faghihi Hospital with asymptomatic, bilateral and symmetrical erythematous patches on her lower extremities. On clinical examination, there were erythematous patches on the lateral and medial malleolar surfaces and superior to the medial malleolus, with no other complaints regarding pain or itching (Figures 1 and 2). She gave no relevant past medical history and was taking no medications. An incisional biopsy was carried out on one of the erythematous patches.

What is your diagnosis?

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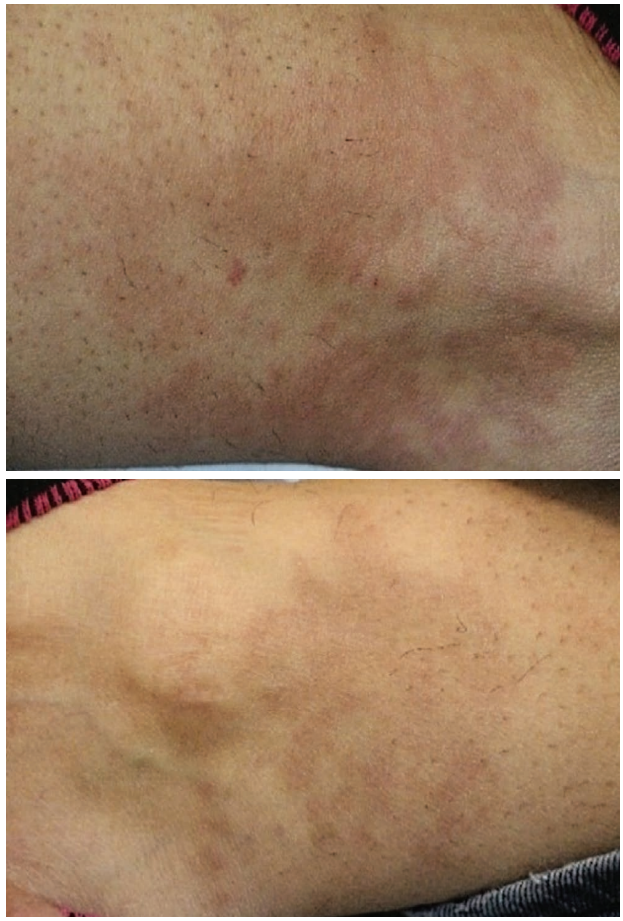

Figures 1 & 2. Bilateral and symmetrical erythematous patches on lower extremities

Diagnosis

Patch-type Granuloma Annulare

Microscopic Findings

Upon histological examination, the biopsy of the lesion revealed unremarkable epidermis and increased inflammatory cells around vessels and between collagen bundles (busy dermis), mainly in deep dermis which were histiocytes. Furthermore, collagen bundles showed mild necrobiotic changes (Figures 3 and 4).

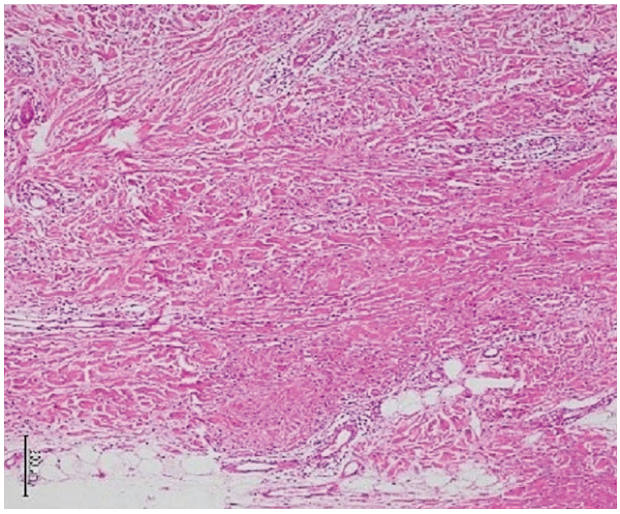

Figure 3. "Busy dermis" with increased inflammatory cells around vessels and between collagen bundles (×100 H & E)

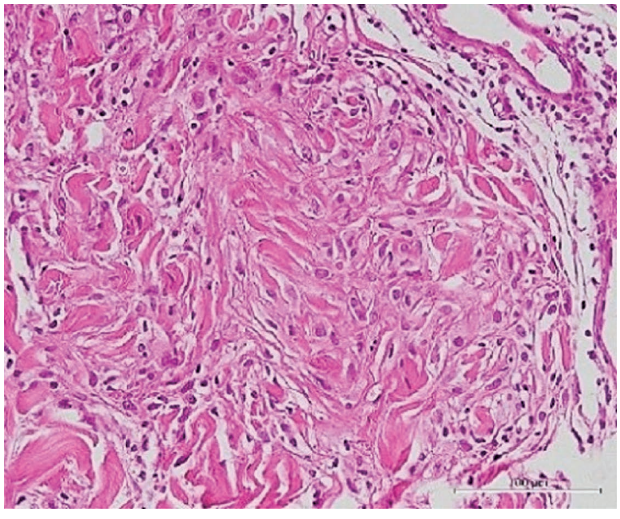

Figure 4. Large number of histiocytes between mildly necrobiotic collagen bundles (×400 H & E)

DISCUSSION

Granuloma annulare (GA) is a benign, cutaneous inflammatory disorder of unknown etiology (Figures 1 and 2) [1]. This disease usually occurs in young adults under 30 years of age, and the incidence is higher in females than in males [2]. Several hypotheses have been suggested for the pathogenesis of GA, including (1) a vasculitis leading to necrotizing changes in the involved dermal blood vessels, (2) trauma-induced primary necrobiosis, (3) monocytic release of lysosomal enzymes causing necrobiotic degeneration, and (4) a type IV lymphocyte mediated delayed hypersensitivity reaction causing degenerative changes [3].

Granuloma annulare most commonly involves the hands and feet. The characteristic eruption is often presented as annular, flesh-colored grouped papules although its clinical manifestations are varied [1]. Five clinical morphologic patterns of GA have been identified: localized, generalized, perforating, subcutaneous, and patch type [4]. Of these, the localized type is the most prevalent, typically presenting with a limited number of asymptomatic, arcuate flesh-colored or red-purple dermal papules. Generalized GA, the disseminated form, entails hundreds or thousands of relatively small glossy skin-colored papules, which may be solitary or coalescent. This variant tends to be distributed primarily over the trunk. Perforating GA is characterized by small, superficial, flesh-colored papules, often with a central umbilication and more commonly distributed over the hands and fingers [1]. Subcutaneous GA presents as non-tender, subcutaneous nodules with normal overlying skin, and is most commonly observed in children. Patch-type GA appears as erythematous patches without scale that may or may not have an annular configuration, and are predominantly found on trunk and extremities [5].

The histology is crucial to the diagnosis of GA, and is classically characterized by dermal palisading granulomas with central degeneration of collagen, the presence of mucin, and a lymphohistiocytic infiltration. The presence of mucin is the key histological finding in distinguishing GA from other granulomatous diseases. The histiocytes in GA have been shown to exist in four patterns: (1) interstitial pattern, (2) surrounding the palisading granulomas, (3) nodules that resemble sarcoidosis,

and (4) a mixed pattern. The most common type is the interstitial pattern, where the necrobiosis and infiltrate are diffuse, histiocytes infiltrate between collagen fibers, and minimal degenerated collagen is noted (Figures 3 and 4) [5,6].

Localized granuloma annulare is self-limited and asymptomatic, hence the fact that no treatment is usually necessary. However, for patients insisting on treatment, options include intralesional corticosteroid injection, topical corticosteroids, cryotherapy, and electrodesiccation. Systemic therapy is required for disseminated granuloma annulare, and many different treatments have been proposed, including dapsone, isotretinoin, hydroxychloroquine, cyclosporine, fumaric acid esters, and etc [7]. Our case was partially treated with topical tacrolimus.

In summary, patch GA is a rare variant, usually presenting with limited involvement and unusual clinical presentations, making the role of histopathological evaluation necessary.

Conflict of Interest: None declared.

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