Journal of Pakistan Association of Dermatologists.2023;**33(1)**:339-341.

Case Report

Actinic granuloma over photo exposed and covered parts

Bhavya Mani K, Haritha Thiruveedhula, Haritha Samanthula

Department of Dermatology, Venereology & Leprosy, Dr. PSIMS & RF, Gannavaram, AP, India.

Abstract Actinic granuloma, also known as an annular elastolytic giant cell granuloma variant, is a chronic granulomatous condition. It is relatively a rare condition triggered by various factors like prolonged exposure to the sun, which initiate an immune response leading to changes in elastic tissue. We report a 69-year-old man who presented with a complaint of a reddish ring-like rash over both thighs, inner aspect of right elbow, back of the neck for two months. He was treated with topical tacrolimus for two months and responded well. The clinical picture of actinic granuloma is similar to that of granuloma annulare; hence they should be differentiated from each other based on histopathology. The histopathological picture of actinic granuloma mainly shows elastolysis, elastophagocytosis, and multinucleate giant cells.

Key words
Photoexposed, annular, granuloma.

Introduction

Actinic granuloma (AG) is a relatively rare granulomatous disease of unknown etiology which manifests as annular lesions over sun exposed areas of body like head and neck.[1] It affects actinically damaged skin that develops due to reactive inflammatory process where the degenerated elastic fibers get engulfed by multinucleate giant cells and histiocytes.[2] The elastic fibers are progressively destroyed by an expanding ring of elastolysis and granulomatous inflammation.

AG is now considered a separate disorder, though it was previously mentioned as a type of GA. Herein we present a case of actinic granuloma where lesions were present over the covered parts and photo distributed sites.

Address for correspondence
Dr. Bhavya Mani K, MD Resident,
Department of Dermatology, Venereology & Leprosy, Dr. PSIMS & RF, Gannavaram, AP, India.
Email: bhavya_blue02@yahoo.com

Case report

A 69-year-old male agricultural labourer complained of a reddish ring-like rash over both thighs, inner aspect of right elbow, back of the neck for two months, associated with mild pruritus and burning sensation. He has no history of trauma, prior drug intake, fever, burning micturition, joint pains, or weight loss. Diabetes or hypertension was not present. His family history was not significant.

On examination, his general condition and other systems were normal.

Cutaneous examination showed numerous erythematous arciform to annular plaques, bilaterally symmetrical, with slightly atrophic and hypopigmented centers ranging from 2 to 7 cm. These plaques were studded with 1-2 mm shiny, erythematous papules over the anterior aspect of both thighs **(Figure 1)**, back of the neck **(Figure 2)**, right cubital fossa. Hair, nails, and oral and genital mucosa were normal. Hansen's disease was ruled out as sensations

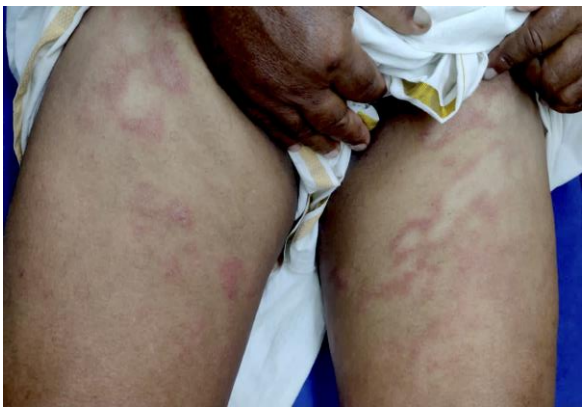

Figure 1

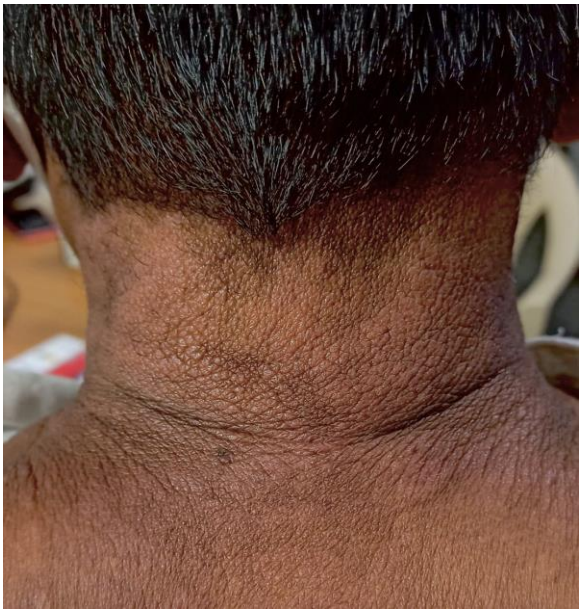

Figure 2

were intact over the lesions and peripheral nerve examination was normal.

KOH mount of skin scrapings was negative for fungal elements. Human immunodeficiency virus, Venereal disease research laboratory tests were negative, and hemogram, urine, liver, kidney function tests and blood sugar were normal. AG was suspected based on the history and morphology of the lesion. A 3 mm punch biopsy taken from the border of the lesion showed keratinized stratified squamous epithelium with parakeratosis, spongiosis, underlying collagen material, ill-defined granulomas and superficial perivascular chronic

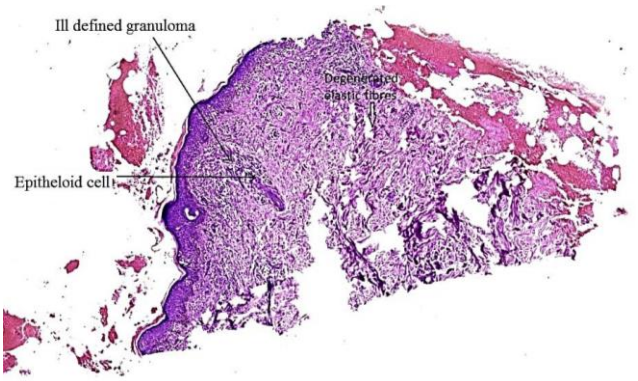

Figure 3 HPE- Hematoxylin & Eosin (H & E) - 10X- showing- keratinized stratified squamous epithelium with parakeratosis, spongiosis and ill-defined granulomas, epithelioid cell, degenerated elastic fibers.

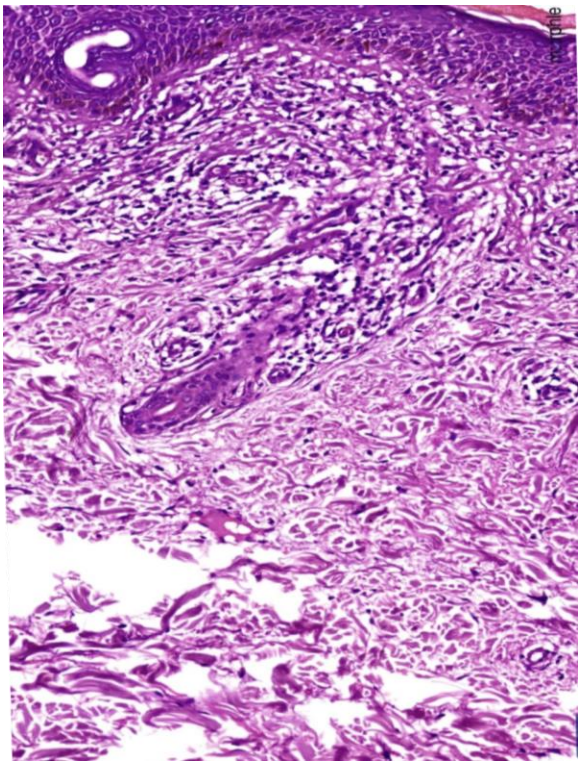

Figure 4 HPE- Hematoxylin and eosin (H & E)- 100X- showing- ill-defined granulomas and superficial perivascular chronic inflammation in the dermis.

inflammation in the dermis. Histopathological examination (HPE) confirmed AG **(Figure 3, 4)**.

He was treated with topical tacrolimus for two months with a decrease in the progression of the lesions.

Discussion

O'Brien, reported AG for the first time in 1975. He postulated that the inflammatory process gets triggered by the antigenic stimuli of actinic damaged elastic fibers followed by the repair of photo-destructed connective tissue.[3,4] Henke *et al*. described a similar condition which can occur in both photo-exposed and photo-protected areas without solar elastosis and named it as Annular elastolytic giant cell granuloma (AEGCG). AG and AEGCG were grouped together under a single diagnostic entity called "granular elastolytic giant cell granuloma (GEGCG)".[5] Henke *et al*. proposed that all annular lesions with the zonal histologic pattern, including a granulomatous response with central loss of elastic fibers/ solar elastosis and peripheral rim of giant cells, be grouped under GEGCG. A delayed-type cell-mediated response against damaged elastic fibers is believed to elicit granulomatous inflammation.[3] AG shows absence of mucin, presence of sarcoid like granuloma in superficial dermis near solar elastosis, and multinucleated giant cells with degenerating elastic fibers in the center. On the other hand, granuloma annulare shows palisading granuloma surrounding degenerating collagen fibers present in entire dermis, along with the presence of mucin. An interstitial granulomatous response can be found in both conditions.[6,7] AG may sometimes last for ten years though it is known to regress spontaneously.[3]

Conclusion

The diagnosis of actinic granuloma of O'Brien should be considered in patients presenting with annular plaques over photo-distributed and covered sites (as shown over thighs in our case) in tropical countries like India.

References

1. Coutinho, Inês D *et al*. O'Brien Actinic Granuloma: A Case Report and Brief Review of Literature. *Indian J Dermatol*. 2015;**60(4)**:391-3.
2. Christopher R. Lovell. Acquired disorders of dermal connective tissue. Rook's Text Book of Dermatology, 9th ed. West Sussex: John Wiley & Sons;2016. p.96.25-26.
3. O'Brien JP. Actinic granuloma. An annular connective tissue disorder affecting sun and heat damaged (elastotic) skin. *Arch Dermatol*. 1975;**111**:460-6.
4. Wang C-Y, Pujol RM, Lee W-H, Su W-P. Annular elastolytic granuloma: a clinicopathologic study of 15 cases and a literature review. *Dermatol-Sinica*. 1996; **14**:51-64.
5. Weedon D. Elastolytic granulomas. In: Weedon D. Weedon's Skin Pathology, 3rd ed. London: Churchill-Livingstone, 2010:188-9.
6. Al-Hoqail IA, Al-Ghamdi AM, Martinka M, Crawford RI. Actinic granuloma is a unique and distinct entity. *Am J Dermatopathol*. 2002;**24**:209-12.
7. The granulomatous reaction pattern. In: David Weedon. Skin Pathology. 2nd Edition (Elsevier). New York: Churchill Livingstone; 2002. p. 193-220.