

Annular Elastolytic Giant Cell Granuloma heralding Onset and Recurrence of Bladder Carcinoma

Seval Erpolat,^{1*} MD, Hacer Haltas,² MD

Address: ¹Department of Dermatology and ²Department of Pathology, Turgut Ozal University Faculty of Medicine, Ankara, Turkey

E-mail: soyoral@yahoo.com

* Corresponding Author: Dr. Seval Erpolat, Turgut Ozal University Faculty of Medicine, Department of Dermatology, Ankara, Turkey

Published:

J Turk Acad Dermatol 2014; **8** (2): 1482c2

This article is available from: <http://www.jtad.org/2014/2/jtad1482c2.pdf>

Key Words: Granuloma, elastophagocytosis, bladder carcinoma

Abstract

Observations: Annular elastolytic giant cell granuloma (AEGCG) is a rare dermatosis characterized clinically by erythematous papules and annular plaques on sun-exposed skin histopathologically by granulomatous inflammation by loss of elastic tissue and elastophagocytosis. We report the case of a man with AEGCG who subsequently developed bladder carcinoma and in whom the AEGCG acted in a fashion parallel with his cancer.

Introduction

The descriptive term “annular elastolytic giant cell granuloma” (AEGCG) was first proposed by Hanke et al for lesions previously described under various names: atypical necrobiosis lipoidica or actinic granuloma [1]. AEGCG is characterized by phagocytosis of elastic fibres by multinucleated giant cells in the dermis. The pathogenesis of AEGCG is not fully understood, but it may be related to inflammation precipitated by actinic damage. In addition there have been reports of AEGCG associated with systemic disorders [2, 3, 4, 5, 6]. We report the case of a man with AEGCG who subsequently developed bladder carcinoma and in whom the AEGCG acted in a fashion parallel with his cancer.

Case Report

In 2008, a 59-year-old man presented with three years complaints of asymptomatic eruption on the dorsum of hands. The man's personal history

included diabetes mellitus and hypertension. Dermatological examination revealed annular atrophic erythematous plaques with slightly raised borders localized to the dorsum of hands.

On histological examination of a skin biopsy lymphohistiocytic infiltrates with multinucleated giant cells were seen. There was fragmentation of elastic fibres in the multinucleated giant cells. Elastic *van Gieson* staining revealed an absence elastic fibers in the centre of lesion. Alcian blue stain was negative for mucin (Figure 1). The clinical and histological findings confirmed the AEGCG. The patient treated with topical clobetasol propionate with a complete response.

In 2012, the patient presented again with the same complaint to our department. Two years previously he had been diagnosed as having a urothelial carcinoma of the bladder. The urothelial carcinoma had been identified as a non-invasive, low grade, papillary carcinoma. He was treated by transurethral resection and intravesical treatment with bacillus Calmette-Guérin (BCG). A follow up cystoscopy re-

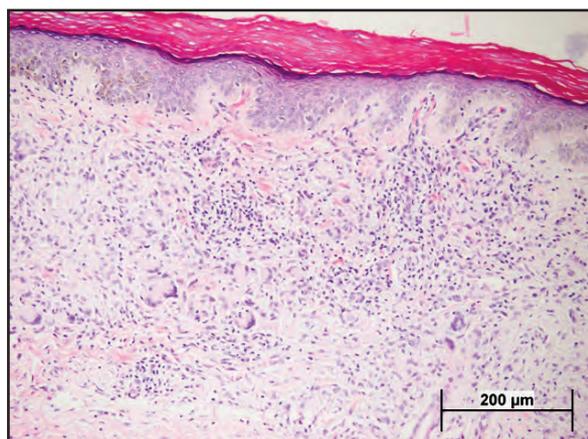


Figure 1. Lymphohistiocytic infiltrates with multinucleated giant cells (Haematoxylin and eosin x 200)

vealed a recurrent tumour 1 month before his presentation to us. On physical examination annular atrophic erythematous plaques were seen on the dorsum of hands (**Figure 2**). Histopathology of a skin biopsy specimen revealed lymphohistiocytic infiltrates with multinucleated giant cells without apparent palisading (**Figure 3a**).

Victoria blue staining revealed phagocytosis of elastic fibres by the multinucleated giant cells and an absence of elastic fibres in the centre of lesion without apparent palisading, necrobiosis, or mucin deposition (**Figure 3b, c**). Based on these results, a diagnosis of AEGCG was confirmed.

Discussion

This was a typical case of AEGCG, also termed actinic granuloma when it occurs in sun-exposed skin such as face and neck, but they are also seen on nonexposed skin [1, 6]. The most common clinical presentation consists of annular plaques or patches often with elevated borders and central atrophy, although there are rare reports of a papular variant of AEGCG [3, 7, 8].

Histopathologic findings include a dermal granulomatous infiltrate with lymphocytes, histiocytes, and multinucleated giant cells, elastolysis and phagocytosis of elastic fibers by multinucleated giant cells. Although AEGCG shares histopathologic similarities with granuloma annulare, the absence of necrobiosis and mucin deposition, and the presence of dominant elastolysis and elastophagocytosis distinguish AEGCG from granuloma annulare [2, 9].



Figure 2. Annular atrophic erythematous plaques with raised border localized to dorsum of hands

The pathogenesis of AEGCG remains unclear but it is thought that ultraviolet radiation, heat or other factors might change the antigenicity of elastic fibres and induce a cellular immune reaction [1, 2, 3, 5, 6]. There have been case reports of AEGCG associated with malignancy: acute myelogenous leukaemia, adult T cell leukaemia, primary cutaneous CD4-positive small/medium-sized pleomorphic T-cell lymphoma and prostate carcinoma [2, 3, 4, 5]. A causal link between AEGCG and malignancy has been interpreted as a systemic immunological host defence against the tumour antigen [2, 4]. Also AEGCG associated with diabetes mellitus (DM) have been reported. DM may be a precipitating factor for AEGCG, possibly contributing to structural damage of the elastic fibres [6].

AEGCG is a persistent condition that may resolve spontaneously over months or years without scarring. Therapy options include clofazimine, chloroquine, topical, and systemic steroids, psoralen, ultraviolet A, topical tacrolimus [3, 7, 10, 11].

In our case report both cancer and diabetes may be a precipitating factor for AEGCG. AEGCG lesions appeared two years ago, after bladder carcinoma developed and reappeared with recurrent bladder carcinoma. This asso-

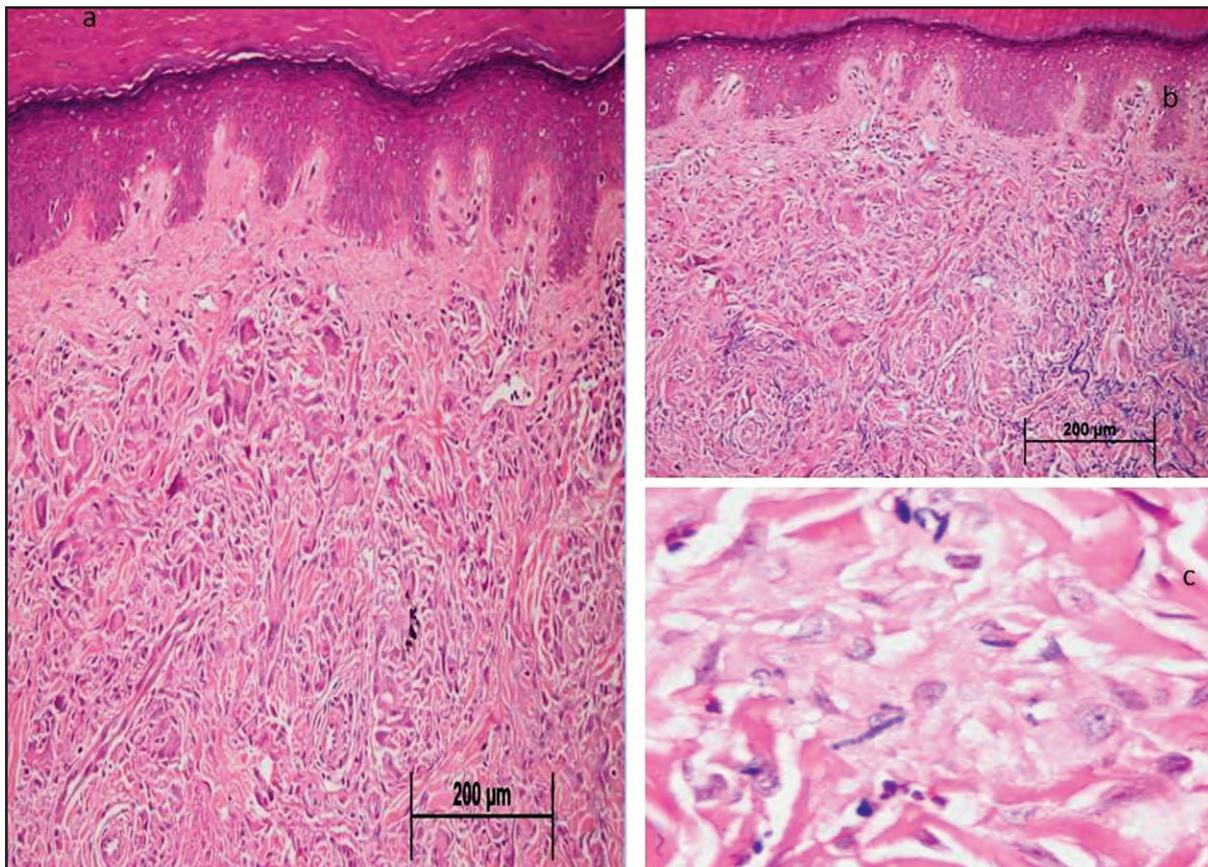


Figure 3. (a) Dermal granulomatous infiltration of multinucleated giant cells (Haematoxylin and eosin x200), (b) The centre of the lesion shows absence of elastic fibers (Victoria Blue x200), (c) This microphotograph shows phagocytosis of elastic fibers by multinucleated giant cells

ciation of malignancy may be only incidental. Further studies are needed to clarify the relationship.

References

- Hanke CW, Bailin PL, Roenigk HM. Annular elastolytic giant cell granuloma. *J Am Acad Dermatol* 1979; 1: 413-421. PMID: 512085
- Asahina A, Shirai A, Horita A, Saito I. Annular elastolytic giant cell granuloma associated with prostate carcinoma: demonstration of human metalloelastase (MMP-12) expression. *Clin Exp Dermatol* 2012; 37: 70-72. PMID: 21689144
- Rongioletti F, Baldari M, Burlando M, Parodi A. Papular elastolytic giant cell granuloma: report of a case associated with monoclonal gammopathy and responsive to topical tacrolimus. *Clin Exp Dermatol* 2010; 35: 145-148. PMID: 19508563
- Boussault P, Tucker ML, Weschler J, et al. Primary cutaneous CD4+ small/medium-sized pleomorphic T-cell lymphoma associated with an annular elastolytic giant cell granuloma. *Br J Dermatol* 2009; 160: 1126-1128. PMID: 19292715
- Garg A, Kundu RV, Plotkin O, Aronson IK. Annular elastolytic giant cell granuloma heralding onset and recurrence of acute myelogenous leukemia. *Arch Dermatol* 2006; 142: 532-533. PMID: 16618887
- Aso Y, Izaki S, Teraki Y. Annular elastolytic giant cell granuloma associated with diabetes mellitus: a case report and review of the Japanese literature. *Clin Exp Dermatol* 2011; 36: 917-919. PMID: 21623881
- Morita K, Okamoto H, Miyachi H. Papular elastolytic giant cell granuloma: a clinical variant of annular elastolytic giant cell granuloma or generalized granuloma annulare? *Eur J Dermatol* 1999; 9: 647-649. PMID: 10586135
- Kato H, Kitajima Y, Yaoita H. Annular elastolytic giant cell granuloma: an unusual case with papular lesions. *J Dermatol* 1991; 18: 667-670. PMID: 1800533
- Limas C. The spectrum of primary cutaneous elastolytic granulomas and their distinction from granuloma annulare: a clinicopathological analysis. *Histopathology* 2004; 44: 277-282. PMID: 14987232
- Hermes B, Haas N, Czarnetzki BM. Annular elastolytic giant cell granuloma with a spontaneous healing tendency. *Hautarzt* 1995; 46: 490-493. PMID: 7672990
- Ozkaya-Bayazit E, Buyukbabani N, Baykal C, Ozturk A, Okcu M, Soyer HP. Annular elastolytic giant cell granuloma: sparing of a burn scar and successful treatment with chloroquine. *Br J Dermatol* 1999; 140: 525-530. PMID: 10233280