

## **Annular Elastolytic Giant Cell Granuloma In A Ten Year-Old Child**

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### **ABSTRACT**

Annular elastolytic giant cell granuloma is a rare granulomatous disease characterized by annular erythematous plaques with central atrophy, which is generally observed in sun-exposed areas of the skin. Actinic injury is thought to be involved in pathogenesis, yet its exact reason has not been elucidated. Elastolysis along with elastophagocytosis constitute its typical histopathological features. The disease is reported to show a tendency towards being observed in middle aged women. In this paper, we presented a ten year-old patient diagnosed with annular elastolytic giant cell granuloma.

**Keywords:** Annular elastolytic giant cell granuloma granuloma annulare, annular elastolytic giant cell granuloma, granuloma

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### **INTRODUCTION**

Annular elastolytic giant cell granuloma (AEGCG) is a rare granulomatous skin disease characterized histopathologically by phagocytosis of elastic fibers by multinucleated giant cells and clinically by annular patches with elevated borders and atrophic centers found mainly on sun-exposed skin. Although its etiology remains unknown, actinic injury is thought to play role as underlying mechanism considering its predominance in favor of sun-exposed areas of the skin. The disease is usually seen in middle aged women. We presented this case report of AEGCG, since it is a rare condition which should be included in the differential diagnosis of confounding diseases such as granuloma annulare, sarcoidosis, and tuberculosis and that it has a distinguishable feature as being a pediatric patient (1,2).

### **CASE REPORT**

A ten year-old boy was admitted to our outpatient clinic with the chief complaint of wounds on his forehead which started about one year ago as raised lesions whose number increased gradually. Past medical or family history revealed no specific features. Physical examination was normal, except that in dermatological examination, frontal region showed several plaques of 0.5-2 cm in diameter, characterized by central atrophy and hypopigmentation with elevated and erythematous borders (Figure 1). No pathological finding was seen either in routine blood tests and urinalysis or in chest X-ray. Histopathological examination of the two punch biopsy specimens obtained separately from elevated margin and central atrophic area showed non-palisading, non-mucinous granuloma formations having peripheral lymphocytic inflammatory infiltration associated with multinuclear giant cell histiocytes in focal interstitial area and between collagen fibers in epidermis and dermis (Figure 2 & 3); and loss of elastic fibers in dermis (Figure 4). The diagnosis of AEGCG was established upon these clinical and

histopathological findings. Since the patient was lost to follow-up, treatment and subsequent actions could not be initiated.

## **DISCUSSION**

Although AEGCG was initially thought to be a form of granuloma annulare manifested at sun-damaged areas and hence termed as actinic granuloma (3), later reports of rare cases affecting skin parts not exposed to sun and of those cases with no evidence of actinic injury have made this condition to be considered as a distinct clinical entity (1).

AEGCG is usually seen in 30-50 year-old women. Literature search showed two large case series, first by O'Brien consisting of 19 female patients with an age range of 33-48 years (3) and another case series by Hanke et al. reporting 5 female patients whose ages ranges from 31 to 59 years (1). While majority of remaining case reports points at this pattern of age distribution, presentation of cases of adolescence and childhood is limited (4).

Etiopathogenesis of AEGCG, presenting with a clinical manifestation of dermal plaques characterized by elevated margins and atrophic centers on sun-exposed parts, was suggested to involve the development of elastic fiber injury by humoral immune response activated against elastic fibers which acquire antigenic properties under the influence of UV radiations (8,9). Histopathologically, while erythematous margins of lesions indicate a granulomatous infiltration with phagocytosis of elastic fibers by multinuclear giant cells, central zones of lesions reveal diminishment or complete loss of elastic fibers (8,10,11). Distinctive features such as elastolysis, elastophagocytosis, and non-palisading structure of granuloma along with the absence of mucin accumulation, necrosis, or necrobiosis favors AEGCG regarding the differential diagnosis among granuloma annulare, necrobiosis lipoidica, and sarcoidosis (12).

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Having a chronic course with spontaneous healing potential, treatment options of AEGCG include intralesional corticosteroids, or systemic steroids, isotretinoin, acitretin, chloroquine, cyclosporine, and PUVA in case of presence of diffuse lesions (2,13).

In conclusion, AEGCG being already a rare condition that should be considered in differential diagnosis of annular and granulomatous diseases, is seen in childhood even rarer. We presented a case of pediatric patient showing typical clinical and histopathological characteristics of AEGCG, with the aim of making modest contribution to the literature.

## REFERENCES

1. Hanke CW, Bailin PL, Roenigk HH Jr. Annular elastolytic giant cell granuloma. A clinicopathologic study of five cases and review of similar entities. *J Am Acad Dermatol* 1979; 1:413-21.
2. Hermes B, Haas N, Czarnetzki BM. Annular elastolytic giant cell granuloma with a spontaneous healing tendency. *Hautarzt* 1995; 46:490-3.
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. Herron MD, Coffin CM, Vanderhooft SL. Annular elastolytic cell granuloma. *Pediatr Dev Pathol* 2002; 5:305-9.
5. Lee HW, Lee MW, Choi JH, Moon KC, Koh JK. Annular elastolytic giant cell granuloma in an infant: improvement after treatment with oral tranilast and topical pimecrolimus. *J Am Acad Dermatol* 2005; 53:244-6.
6. Ishibashi A, Yokoyama A, Hirano K. Annular elastolytic giant cell granuloma occurring in covered areas. *Dermatologica* 1987; 174:293-7.
7. Campos-Munoz L, Diaz-Diaz RM, Quesada-Cortes A, Hernandez-Cano N, Martin-Diaz MA, Regojo-Zapata RM, Casado Jimenez M. Annular elastolytic giant cell granuloma: a case report located in non sun exposed areas. *Actas Dermosifiliogr* 2006; 97:533-5.
8. Özkaya-Bayazit E, Büyükbabani N, Baykal C, Öztürk A, Okcu M, Soyer HP. Annular elastolytic giant cell granuloma: sparing of a burn scar and successful treatment with chloroquine. *Br J Dermatol* 1999; 140:525-30.
9. Revenga F, Rovira L, Pimentel J, Alejo M. Annular elastolytic giant cell granuloma-actinic granuloma? *Clin Exp Dermatol* 1996; 21:51-3.

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10. Pock L, Blakova J, Caloudova H, Varjassyova R, KOnkolova J, Hercogova. Annular elastolytic giant cell granuloma causes an irreversible disappearance of the elastic fibres. *J Eur Acad Dermatol Venereol* 2004; 18:365-8.
11. Ortel B, Rappersberger K, Konrad K, Middermal elastolysis in an elderly man with evidence of elastic fiber phagocytosis. *Arch Dermatol* 1992; 128:88-90.
12. Morita K, Okamoto H, Miyachi Y. Papular elastolytic giant cell granuloma: a clinical variant of annular elastolytic giant cell granuloma or generalized granuloma annulare? *Eur J Dermatol* 1999; 9:647-9.
13. Howard A, White CR. Non-infectious granulomas. Annular elastolytic giant cell granuloma. In: Bologna JL, Jorizzo JL, Rapini RP, editors. *Dermatology* 1st ed. ST Louis: Mosby; 2003; 1465-7.



Fig 1: Atrophic plaques surrounded with erythema on the forehead



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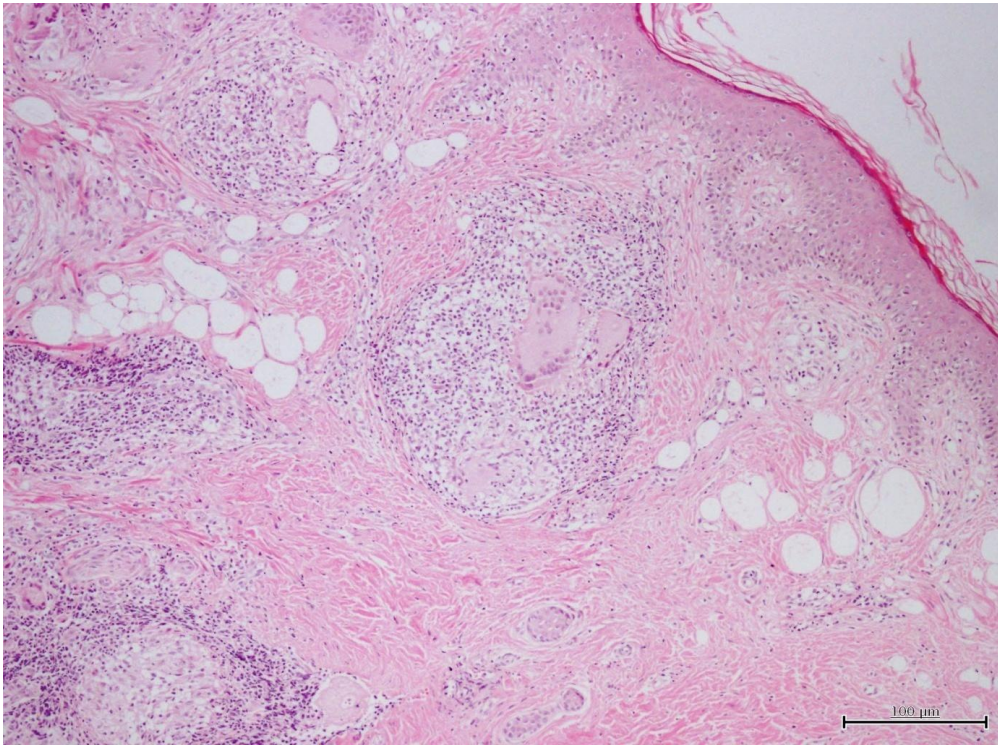


Fig 2: Granuloma formation accompanied by multinucleated giant cell histiocytes that do not form palisade within the collagen fibers of epidermis and dermis (H&E, X100)



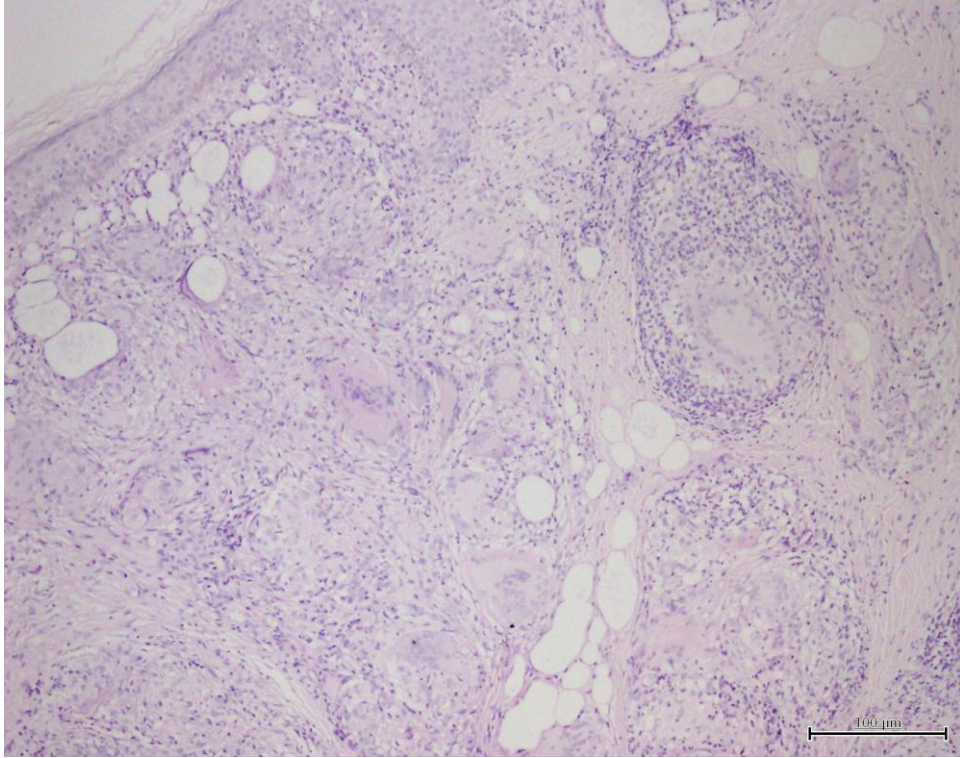


Fig 3: PAS staining showed no sign of mucinous material (PAS, X100)

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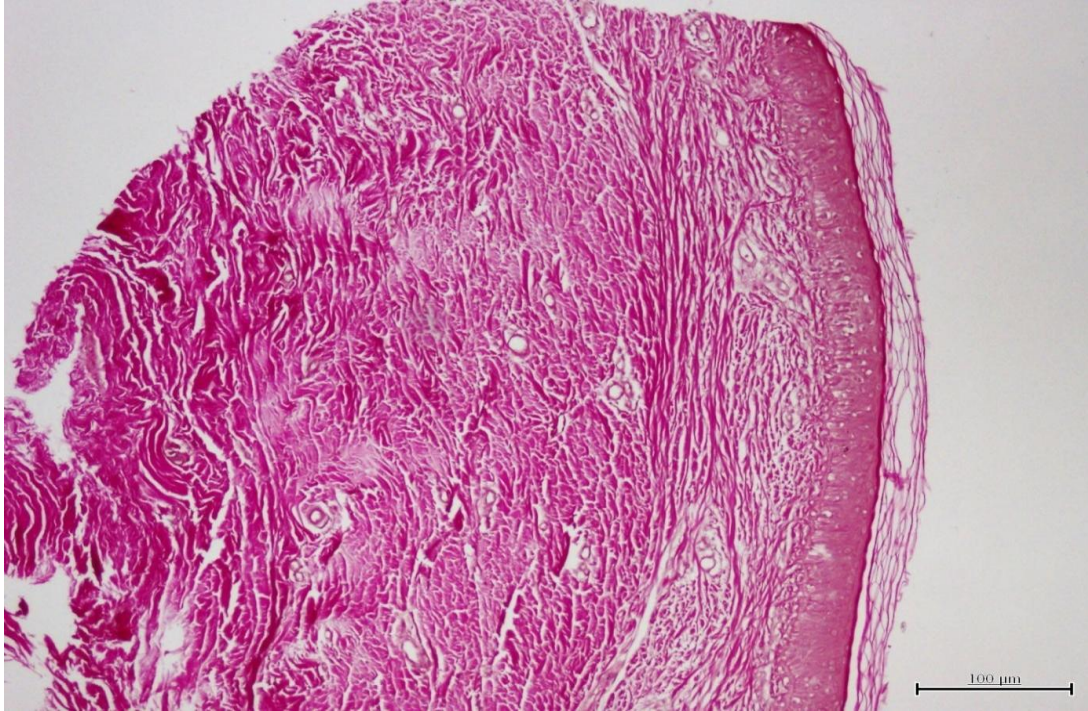


Fig 4: Loss of elastic fibers in dermis (Elaston Von Gieson, X100)