

Case22

A 68 year-old Thai woman from Bangkok

Chief complaint: Annular erythematous papules and plaques on extremities for 2 months



Present illness:

The patient abruptly developed asymptomatic annular erythematous papules and plaques on extremities for 2 months. The lesions gradually expand to face, V-shaped of neck on sun exposed area. She has no history of previous sun exposure or herbal used.

Past history:

Diabetic mellitus, hypertension, and dyslipidemia. Current medications include glipizide 5 mg/day, metformin 1000 mg/day, hydrochlorothiazide 25 mg/day, losartan 50 mg/day, sitagliptin 50 mg/day and simvastatin 40 mg/day.

Physical examination:

HEENT: Not pale, no jaundice

Lymph node: Not palpable

Heart and lung: WNL

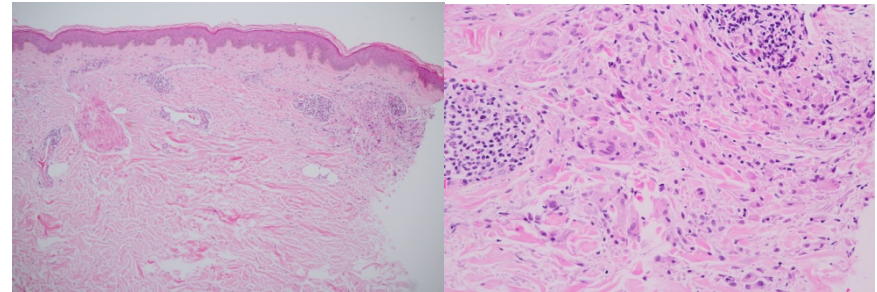
Abdomen: No hepatosplenomegaly

Neurological: No peripheral nerve enlargement

Skin examination:

- Multiple discrete annular erythematous small papules and plaques on dorsum of hands, legs, face and V shape of neck size 1-5 cm in diameter predominately on sun exposed-area.

Histopathology: (S16-21754A, right forearm)



- Perivascular and interstitial inflammatory-cell infiltrate of lymphocytes and histiocytes respectively in the upper dermis.
- Some multinucleated histiocytes engulfing elastic material. (elastophagocytosis)

Special stain: (S16-24592A, right forearm)

- Some elastotic material phagocitized by multinucleated and marked decrease to absence of elastic tissue in some foci of affected dermis.

Investigation:

CBC and LFT: WNL
FBS: 166 mg/dL
HbA1c: 8.64%
BUN/Cr: 13/0.55 mg/dL
UA: Protein negative, Sugar 1+
Cholesterol: 205 mg/dL, LDL 106 mg/dL
Viral hepatitis profile, anti HIV: Negative
CXR: No pulmonary infiltration

Diagnosis: Actinic granuloma

Treatment

- Sun avoidance
- Hydroxychloroquine 200mg/day
- 0.1% TA cream + 10% urea cream apply twice daily

Presenter: Thirawut Sirikham, MD

Consultant: Silada Kanokrungeee, MD

Discussion:

Actinic granuloma (AG) was first described by O'Brien in 1975,¹⁻⁴ also termed annular elastolytic giant cell granuloma, atypical necrobiosis lipoidica of the face and scalp, Miescher's granuloma of the face, and possibly granuloma multiforme. The pathogenesis of AG is still not well understood. Ultraviolet (UV) radiation, especially UVA and heat are recognized as causal factors, by changing the antigenicity of elastic fibers and producing an immune response. The immune response mediated by helper T cells to degenerated elastic tissue also implicated in the development of granuloma.⁵

The common age of onset of AG is between 40 and 70 years old with no gender predilection. The typical cutaneous lesion of AG is initially smooth, elevated, nonscaly, erythematous papule which centrifugally extends to an annular plaque with central clearing, and sometimes atrophies or hypopigmentation. The lesions are usually distributed on chronically sun-exposed areas such as face, neck, dorsum of the hands, forearms, and upper back. Apart from the skin, conjunctival involvement has been reported for a few cases.^{6,7}

There are some reports association between AG and internal diseases such as hematologic and solid malignancy, monoclonal gammopathy, temporal arteritis, erythema nodosum, and x-linked dominant protoporphyria.⁸⁻¹¹ Diabetes mellitus has been found about 37-40% in patient with AG, may cause by injury of elastic fiber from hyperglycemic state.¹² As for the renal condition, recently there has been reported the association between AG and focal segmental glomerulosclerosis.¹³

The differential diagnoses of AG are broad. These include granuloma annulare, erythema annulare centrifugum, annular lichen planus, secondary syphilis, necrobiosis lipoidica, tinea corporis, and tuberculoid leprosy. Therefore, histopathology is essential for diagnosis of AG. The best method to obtain an accurate histopathology is an elliptical biopsy across the annular rim and stained with elastic van Gieson to demonstrate the three zones of elastic tissue change. First zone, solar elastosis was identified in the surrounding unaffected skin. Second zone, granulomatous reaction consisting of histiocytes and foreign-body type multinucleated cells, with engulfment of elastotic fibers, representing the annular rim. Third zone, an absence of elastic tissue in the superficial dermis is found in center of the plaque.¹⁴ Due to esthetic concern in our case, we decided to perform punch biopsy on her right forearm. The histopathology also show tuberculoid granuloma with elastophagocytosis, which is compatible with AG.

The treatment of AG is often unsuccessful. Topical, intralesional and systemic corticosteroids, topical pimecrolimus and tacrolimus, and phototherapy (narrow band UVB, PUVA, Re-PUVA) have been used with some benefit.¹⁵⁻¹⁷ Cyclosporine A, dapsone, pentoxifylline, isotretinoin, and acitretin have been reported to be effective in some cases.¹⁸⁻²⁰ There are a few case reports with positive results from hydroxychloroquine and chloroquine therapy.²¹ For preventing the new lesions, patients should also be educated to avoid sun exposure and regularly use sunscreen.

In our patient, she has been treated with hydroxychloroquine (200mg/day), 0.1% topical triamcinolone acetonide in 10% urea cream and sun avoidance with partial improvement.

References

1. O'Brien JP. Actinic granuloma. An annular connective tissue disorder affecting sun- and heat-damaged (elastotic) skin. *Arch Dermatol* 1975;111:460-6.
2. Dowling GB , Jones EW. Atypical (annular) necrobiosis lipoidica of the face and scalp. A report of the clinical and histological features of 7 cases. *Dermatologica* 1967;135:11-26.
3. Mehregan AH , Altman J. Miescher's granuloma of the face. A variant of the necrobiosis lipoidica-granuloma annulare spectrum. *Arch Dermatol* 1973;107:62-4.
4. Leiker DL, Kok SH , Spaas JA. Granulomatous multiforme, a new skin disease resembling leprosy. *Int J Lepr* 1964;32:368-76.
5. McGrae JD, Jr. Actinic granuloma. A clinical, histopathologic, and immunocytochemical study. *Arch Dermatol* 1986;122:43-7.
6. Steffen C. Actinic granuloma of the conjunctiva. *Am J Dermatopathol* 1992;14:253-4.
7. Gallagher MJ, Roberts F, Osborne S , Kirkness CM. Actinic granuloma of the conjunctiva. *Am J Dermatopathol* 2003;87:1044-5.
8. Garg A, Kundu RV, Plotkin O , Aronson IK. Annular elastolytic giant cell granuloma heralding onset and recurrence of acute myelogenous leukemia. *Arch Dermatol* 2006;142:532-3.
9. Shoimer I , Wismer J. Annular elastolytic giant cell granuloma associated with temporal arteritis leading to blindness. *J Cutan Med Surg* 2011;15:293-7.
10. Matsuzaki Y, Rokunohe A, Nishikawa Y, Nakano H , Sawamura D. Actinic granuloma associated with erythema nodosum. *Eur J Dermatol* 2011;21:806-7.
11. Garcia-Martinez FJ, Gutierrez-Gonzalez E, Alonso-Gonzalez J, Vega A, Santamarina M, Rodriguez-Granados MT et al. Annular elastolytic giant cell granuloma associated to late-onset X-linked dominant protoporphyria. *Dermatology (Basel, Switzerland)* 2013;227:238-42.
12. 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: 917-9.
13. Phasukthaworn R, Chanprapaph K, Vachiramom V. Actinic Granuloma with Focal Segmental Glomerulosclerosis. *Case Rep Der* 2016;8:36-41.
14. Wee JS, Moosa Y, Misch K, Chong H , Natkunarajah J. Actinic granuloma: a history of photoexacerbation and the importance of a radial 'three-zone' biopsy. *Clin Exp Dermatol* 2013;38:219-21.
15. Ventura F, Vilarinho C, da Luz Duarte M, Pardal F , Brito C. Two cases of annular elastolytic giant cell granuloma: Different response to the treatment. *Dermatol Online J* 2010;16:11.
16. Pock L, Blazkova J, Caloudova H, Varjassyova I, Konkolova R , Hercogova J. Annular elastolytic giant cell granuloma causes an irreversible disappearance of the elastic fibres. *J EurAcadDermatolVenereol* 2004;18:365-8.
17. Tsutsui K, Hirone T, Kubo K , Matsui Y. Annular elastolytic giant cell granuloma: response to cyclosporin A. *J Dermatol* 1994;21: 426-9.

18. Igawa K, Maruyama R, Katayama I , Nishioka K. Anti-oxidative therapy with oral dapsone improved HCV antibody positive annular elastolytic giant cell granuloma. *J Dermatol* 1997;24:328-31.
19. Ratnavel RC, Grant JW, Handfield-Jones SE , Norris PG. O'Brien's actinic granuloma: response to isotretinoin. *J R Soc Med* 1995;88:528p-9p.
20. Oka M, Kunisada M , Nishigori C. Generalized annular elastolytic giant cell granuloma with sparing of striae distensae. *J Dermatol* 2013;40:220-2.
21. Can B, Kavala M, Turkoglu Z, Zindanci I, Topaloglu F , Zemheri E. Successful treatment of annular elastolytic giant cell granuloma with hydroxychloroquine. *Int J Dermatol* 2013;52:509-11.