

Acne keloidalis in an Asian female patient

Sayaka Togo  | Koji Sugawara | Daisuke Tsuruta

Department of Dermatology, Osaka City University Graduate School of Medicine, Osaka, Japan

Correspondence

Sayaka Togo, Department of Dermatology, Osaka City University Graduate School of Medicine, Osaka, Japan.
Email: d17mb031@dt.osaka-cu.ac.jp

Abstract

Although AK is uncommon in Asians, this diagnosis must be suspected if specific clinical picture is seen. Early treatment is advised to avoid scarring alopecia but to avoid firmness of these plaques. Although we need to further investigate, IL-6 could be a new target for the development of novel treatments.

KEYWORDS

acne keloidalis, hair loss, IL-6, scarring alopecia

1 | INTRODUCTION

Acne keloidalis (AK) is a chronic, idiopathic, inflammatory disorder around the hair follicles (HFs). It is a subtype of scarring alopecia that is mostly reported in young black men.^{1,2} In fact, few cases of AK in women have been reported in the literature.³ AK in patients of other ethnicities, particularly Asian patients, is less common.⁴ AK normally develops from firm, skin-colored papules and pustules most often on the occipital region of the scalp extending to the posterior region of the neck. Papules and pustules may coalesce to form keloidal plaques. Destruction of the HFs within the plaques is characteristic of this disease.² Here, we describe a rare case of AK in a middle-aged Japanese woman.

2 | CASE REPORT

A 44-year-old woman noticed an asymptomatic papule on a posterior lesion on her scalp 7 years ago. She began to scratch the papule, and it gradually grew into a mass. Although she was treated with oral tranilast and a topical corticosteroid cream, the skin lesion never improved. Therefore, she was referred to our hospital. Clinical examination revealed a 70 × 65 mm mass on the both vertex and occipital region of the scalp (Figure 1A,B). As shown by trichoscopy, most of the

hair ostia had disappeared. The results of a laboratory blood examination were unremarkable. Histological examination using samples obtained by a skin biopsy of the mass showed an obviously reduced number of HFs with an increased number of thickened collagen fibers that are characteristic of keloids (so-called “keloidal collagen”) (Figure 2A,B). Interestingly, most of the fibroblasts were IL-6-positive, as shown by IL-6 immunohistochemistry (Figure 2C). Inflammatory cells were mainly lymphocytes, but histiocytes and plasma cells were also observed (Figure 2B). Multinucleated giant cells were also detected in the deep dermis (Figure 2D). Therefore, we diagnosed this case as AK. The patient's AK has remained stable in size by continuous oral treatment with tranilast and a topical corticosteroid cream.

3 | DISCUSSION

Although AK is typically reported in young men between the ages of 16 and 31,² several cases have been reported in women.³ AK is mostly seen in black people.⁵ In contrast to what is known of AK, here we encountered a rare case of AK in a middle-aged Japanese woman. In addition, AK is normally recognized as small and firm papules. The papules in AK gradually grow after scratching.⁶ However, there are no reports in the literature about the size of mature papules in AK. Compared to previously reported sizes of AK, the size

FIGURE 1 Clinical examination revealed a 70 × 65 mm mass on the both vertex and occipital region of the scalp (A,B)

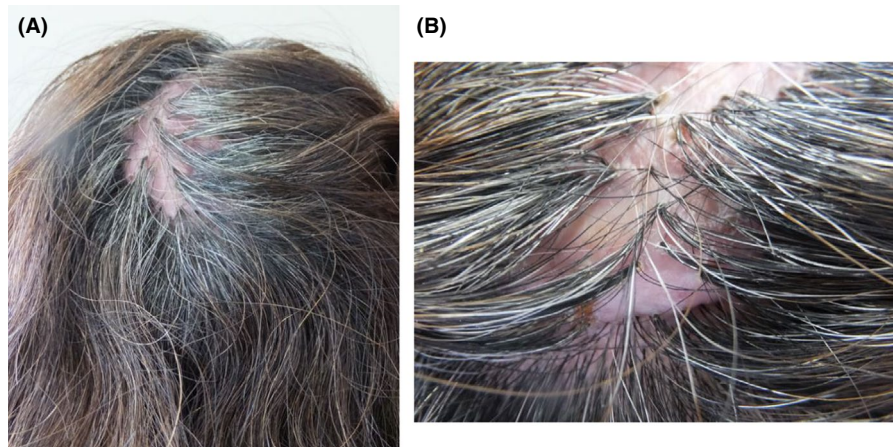
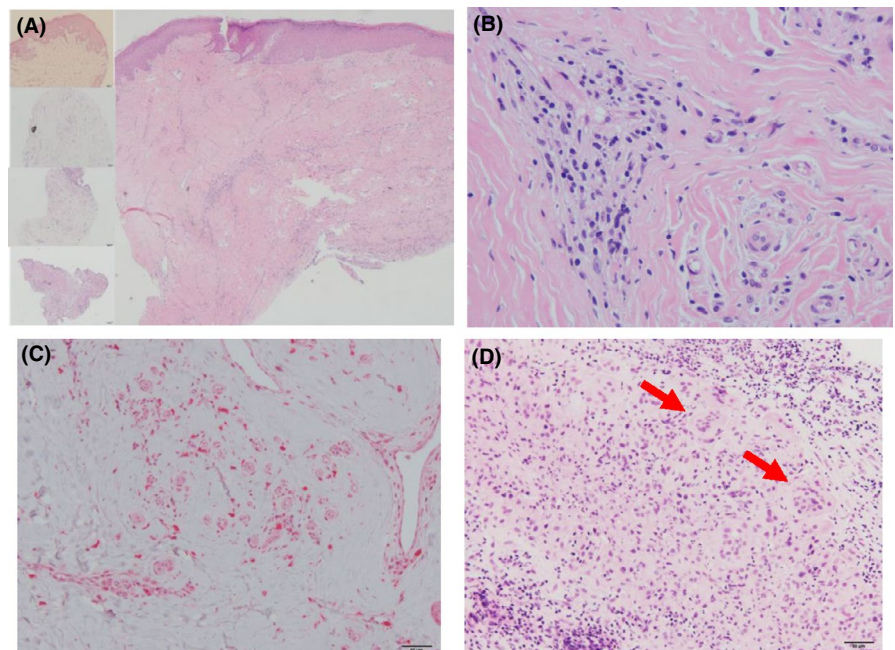


FIGURE 2 Histological examination showed an obviously reduced number of hair follicles with an increased number of collagen fibers (A: HE stain 20×). Inflammatory cells were mainly composed of lymphocytes. In addition, histiocytes and plasma cells were also detected (B: HE stain 200×). IL-6 immunohistochemistry revealed many IL-6-positive cells detected within the dermis. IL-6 cells are indicated as red cells (C: 200×). Multinucleated giant cells were also observed in the deep dermis (D: HE stain 200×)



of the AK in our case was relatively large. Several factors including chronic mechanical stress and low-grade bacterial infection are known to be involved in the pathogenesis of AK. However, the exact mechanisms of AK have remained elusive.⁷ Although AK is clinically similar to keloids or acne vulgaris, it has recently been considered a different entity from those diseases.⁶ For instance, the keloidal collagen typically seen in keloids is normally absent in AK.⁶ Various molecules including IL-6, IL-18, IL-24, CKLF-1, TGF- β 1, JAK1, STAT3, RAF1, and ELK1 are involved in the pathology of keloids.^{8,9} In particular, several research articles have reported that IL-6 expression is increased in fibroblasts from samples of keloids compared to its expression in control fibroblasts.¹⁰ However, IL-6 expression has not been investigated in AK. We found many IL-6-positive cells within the dermis of the AK in this patient by IL-6 immunohistochemistry (Figure 2C).

4 | CONCLUSION

There are several options to treat the early inflammatory stage of AK. These include antibiotics, excision, topical and intralesional steroids, cryotherapy, and ultraviolet irradiation.⁷ Although we need to further investigate the impact of IL-6-mediated signaling on the pathology of AK as compared to keloids, IL-6 could be a new target for the development of potential novel treatments for AK.

ACKNOWLEDGMENT

None.

CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTION

ST: Conceived of and produced the first draft of this manuscript and approved of the manuscript in its current form. KS: Provided substantive guidance and feedback on the manuscript and submitted the report in its current form. DT: Approved the final manuscript.

ORCID

Sayaka Togo  <https://orcid.org/0000-0001-6595-9229>

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How to cite this article: Togo S, Sugawara K, Tsuruta D. Acne keloidalis in an Asian female patient. *Clin Case Rep*. 2019;7:1412–1414. <https://doi.org/10.1002/ccr3.2170>