

Single Case

# Spontaneous Regression of Annular Basal Cell Carcinoma: A Case Report

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## Keywords

Annular basal cell carcinoma · Spontaneous regression · CD8 · CD68

## Abstract

We herein present a case of annular basal cell carcinoma (BCC) with spontaneous regression on the right temporal region of a 56-year-old Japanese male. Histopathological examination revealed that the central section had no tumor cells. The sweat glands, follicles, and other cutaneous appendages were also absent. This pattern of spontaneous regression is quite uncommon, and understanding the histopathology may be important for future approaches to BCC.

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Published by S. Karger AG, Basel

## Introduction

Basal cell carcinoma (BCC) is one of the most common skin neoplasms. Their ability to grow progressively and to destroy surrounding tissues can cause considerable morbidity [1]. However, there have been a few reports on partial or complete regression of BCC in the absence of any treatment [2, 3]. The precise mechanism of this phenomenon remains unclear. We hereby describe a case of annular BCC with spontaneous regression.

## Case Report

A 56-year-old Japanese male patient presented with an annular nodule on the right temporal region. Clinical examination revealed normal skin color in the central section of the lesion, surrounded by dark black nodules, and it had a centrifugal pattern of spread. The tumor size was 42 mm × 28 mm in diameter (Fig. 1). There was no history of previous surgery or radiation treatment to the area of the lesion. Skin biopsy from the nodules was performed, and BCC was diagnosed histopathologically. We excised the tumor with a 5-mm surgical margin to the level of adipose tissue. A skin graft from the right clavicular area was used for skin transplantation. Histopathological analysis of the tissue excised from the central section revealed no tumor nests. The cutaneous appendages, such as sebaceous glands and hair follicles, were also not found (Fig. 2a, b). The circumferential nodule consisted of hyperchromatic basaloid tumor cells distributed from the epidermis to the dermis (Fig. 2c). A mixed infiltrative and nodular type of BCC was diagnosed based on classification criteria. We performed immunohistochemical staining, and CD8<sup>+</sup> cells (Fig. 2d) and CD68<sup>+</sup> cells infiltrated the tumor nests.

## Discussion

Spontaneous regression can be defined as the complete or partial disappearance of a malignant tumor in the absence of therapy capable of inducing antineoplastic effects [1]. Curson and Weedon [4] conducted a prospective study of 400 randomly selected BCCs, and some cases showed evidence of regression. One case presented with annular BCC, similar to our case. However, observations on the histopathology of partial or complete regression in BCC have been rare. Curson and Weedon [4] described a reduction of skin appendages in the regressed areas. The findings from the normal skin-colored lesion in our case were similar to this description. Histopathological analysis revealed no tumor cells infiltrating the central lesion. The sweat glands, follicles, and other cutaneous appendages were also absent. Our results from immunohistochemical staining indicated no substantial infiltration of immune cells. In contrast, CD8<sup>+</sup> and CD68<sup>+</sup> cells infiltrated the nodular lesions. Therefore, we suggest that CD8<sup>+</sup> and CD68<sup>+</sup> cells might play a role in the spontaneous regression of BCC in this case. We suggest that while the tumor diameter enlarged, CD8<sup>+</sup> and CD68<sup>+</sup> cells-induced tumor regression occurred simultaneously from the central section.

## Conclusion

Here, we examined a case of annular BCC with centrifugal spread. Dark black nodules were present around the tumor circumference and expanded centrifugally. The normal-colored skin that was present in the tumor center enlarged simultaneously with the expansion of the tumor diameter. CD8<sup>+</sup> and CD68<sup>+</sup> cells might play a role in tumor regression, but the precise mechanism is unclear. We expect further research into the mechanism to continue.

### Statement of Ethics

The authors have no ethical conflicts to disclose. Informed consent was obtained from the patient. The study complied with the Declaration of Helsinki.

### Disclosure Statement

The authors have no conflicts of interest to declare.

### Author Contributions

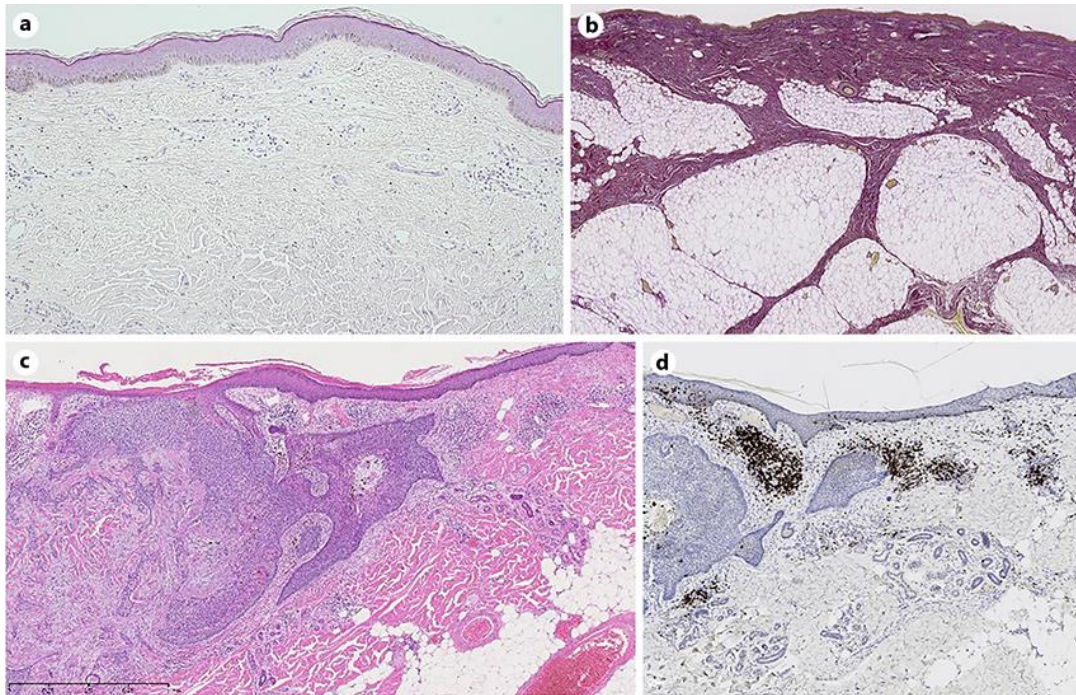
We all are responsible for and agree with the content and writing of the manuscript to which we all contributed significantly.

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**Fig. 1.** Clinical appearance of annular BCC. The skin color in the central section of the lesion was normal and was surrounded by dark black nodules. The tumor size was 42 mm × 28 mm in diameter. The lesion had a centrifugal pattern of spread.



**Fig. 2.** Histopathological appearance of annular BCC. **a** The central section of the lesion had no tumor nests and cutaneous appendages (HE,  $\times 100$ ). **b** There were no tumor cells or infiltration of inflammatory cells in the central section. Sweat glands, follicles, and other cutaneous appendages were also absent (Elastica van Gieson staining,  $\times 200$ ). **c** The nodular section revealed hyperchromatic basaloid tumor cells distributed from the epidermis to the dermis (HE,  $\times 100$ ). **d** Paraffin-embedded tissue samples stained with CD8 revealed CD8<sup>+</sup> cells infiltrating the tumor nests ( $\times 100$ ).