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Case Report

Not what you'd expect: Basal cell carcinoma developing in a burn scar!

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Abstract Basal cell carcinoma is the most common cutaneous cancer, mostly occurring on the photo exposed areas like head and neck. However, most of the times when a scar of an old burn undergoes malignant degeneration, the developing malignancy is expected to be of the Squamous cell carcinoma type. Here we report a rare case of a 55-year-old female who developed a basal cell carcinoma in an old atrophic burn scar.

Key words
Basal cell carcinoma, Burn.

Introduction

Basal cell carcinoma (BCC) is the most common type of cutaneous malignancy.[1] The primary established risk factor for BCC is ultraviolet sunlight exposure. It typically occurs in areas of chronic sun exposure like face, head, neck and ears. BCC occurring on a burn scar is quite rare with very few cases described in literature. The following report describes an unusual case of a female who presented with a post burn atrophic scar on thigh which revealed a diagnosis consistent with BCC on biopsy. This case is being reported to underscore the rarity and importance of its existence.

Case report

A 55-year-old woman presented to the skin OPD with complaint of frequent spontaneous ulceration in a pre-existing atrophic scar on the lateral aspect of her right thigh. There was history of burn due to spillage of a hot liquid over that site at 3 years of age which healed with scarring. Forty years after this incident, recurrent spontaneous ulceration began to occur over the scar site along with gradual increase in its size. This was relieved by application of antibiotic ointment. Mild pain and itching were associated with these episodes. Oozing of yellowish serous discharge was also reported from the lesion sometimes. The severity of symptoms increased 6 months back with episodes of hemorrhage from the ulcerated lesion. On examination, a single erythematous atrophic plaque of size approximately 5x4 cm with crusting and scaling on some of its surface was seen. The borders were well defined but irregular and violaceous to brown in color **(Figure 1)**. A presumptive clinical diagnosis of pyoderma gangrenosum was made and the patient was started on oral and topical steroids as well as cyclosporine. The lesion healed completely in around 45 days, only to recur after a brief period of remission.

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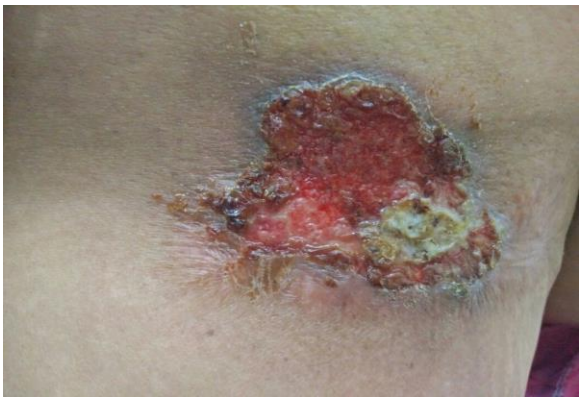

Figure 1 Single, well-defined, erythematous atrophic plaque approximately 5*4 cm in size with overlying scaling and crusting along with violaceous-brown border.

On the basis of history and clinical examination, provisional diagnosis of pyoderma gangrenosum, marjolin's ulcer and lupus vulgaris was kept. Punch biopsy was performed and tissue was sent for microscopic evaluation which revealed collection of basaloid tumor cells with peripheral palisading. Cleft formation between tumor lobules and the stroma was seen along with occasional cysts. Dense lymphocytic infiltrate was present in surrounding papillary dermis and upper to mid reticular dermis was scarred **(Figure 2)**. The findings were consistent with a diagnosis of basal cell carcinoma, superficial type overlying a dermal scar.

Discussion

A recent continuous increase in the incidence of BCC has been reported, which is already the most commonly occurring cutaneous malignancy.[1,2] Photo-exposed areas of the skin are the most common sites for the development of BCC.[3] The incidence is more in persons with outdoor occupations, who are fair-skinned and blue-eyed. The common incriminating factors include arsenic exposure, radiation, ultraviolet light and genetic factors, but no cause can be ascribed in some of the cases.

A number of classifications for BCC have been described in the literature. Superficial, nodular, pigmented and morphea-like or sclerosing are the four clinical types of BCC that are generally recognised.

Histological classifications are more or less akin to the clinical subtypes and include solid, keratotic, cystic and adenoid patterns.[4] Masses of minimally differentiated basal cells with a meagre amount of connective tissue stroma are seen in the solid pattern, while in the keratotic variety, the BCCs differentiate toward structures resembling hair. Cystic tumors show differentiation toward sebaceous glands on histopathology. The adenoid variety is characterised by the glandular or tubular formations with a lace-like pattern of the epithelial strands. Some cases on histopathological examination may also reveal a mixture of findings from the various subtypes.[5]

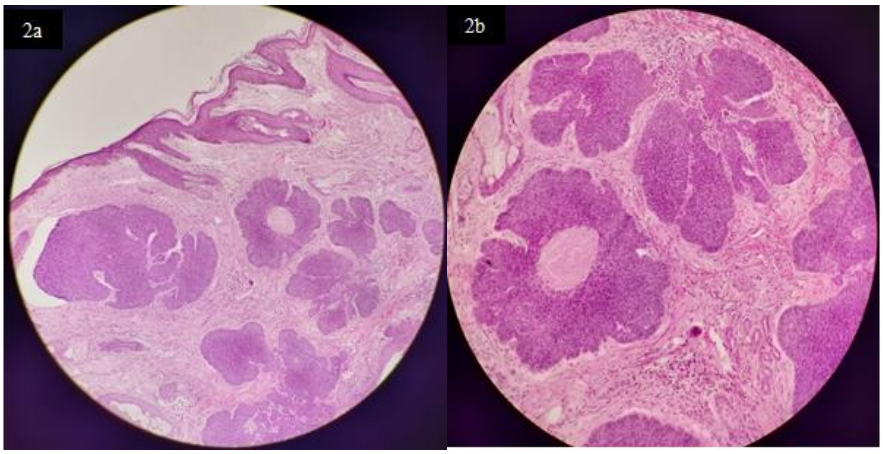

Figure 2 Histopathological examination on haematoxylin and eosin staining revealed collection of basaloid tumor cells with peripheral palisading(2a,40x). Cleft formation between tumor lobules and the stroma was seen along with occasional cysts (2b,100x).

Thermal burns have been described to be a carcinogen of low intensity in animal experiments. An incidence of 2.0% for squamous-cell carcinoma of 0.3% for basal-cell carcinoma has been reported in scars of thermal burns.[6]

Conclusion

The cutaneous tissue is rendered ischemic and highly susceptible to injury by the unstable scars from burns and radiation injuries. The tissue passes through the stages of atrophy, followed by pseudoepitheliomatous hyperplasia, and finally carcinoma. This case warranted reporting to emphasize the fact that any visible changes occurring in a thermal burn scar should be extensively investigated for the possibility of malignant degeneration.

Declaration of patient consent The authors certify that they have obtained all appropriate patient consent.

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Conflict of interest Authors declared no conflict of interest.

Author's contribution

GB, BB: Identification & Management of the case, manuscript writing, has given final approval of the version to be published

SB, SG: Diagnosis & management of the case, critical review, has given final approval of the version to be published.

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