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BASAL CELL CARCINOMA ARISING FROM A PSORIATIC PLAQUE – A RARE CASE REPORT

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ABSTRACT
Psoriasis is a chronic disorder where there is inflammation and proliferation. Patients who are affected with psoriasis are at risk of developing cutaneous neoplasms, preferably non-melanoma skin cancers and lymphoproliferative disorders. We report a case of basal cell carcinoma arising from a psoriatic plaque in a 65-year-old male.

INTRODUCTION

Psoriasis is associated with numerous cutaneous and systemic disorders. Basal cell carcinoma, a non melanocytic neoplasm can occur over the plaques of psoriasis, but the frequency is 5-7 times lesser than squamous cell carcinoma. Increased exposure of PUVA is associated with dose- related and persistent risk of non melanoma skin cancers even in the absence of exposure to other carcinogens [1].

CASE REPORT

A 65-year-old male with psoriasis vulgaris presented with a nodulo-ulcerative lesion on the psoriatic plaque on his left leg. On dermatological examination, multiple erythematous well defined pigmented silvery white scaly plaques seen over the limbs and trunk. A well circumscribed ulcero-proliferative growth of size 2cm x 1.5cm was present over the middle one third of left lower limb (Figure 1). On palpation it was not tender, not warm, firm in consistency, indurated and immobile. No lymphadenopathy present. Systemic examination done was normal. Routine baseline investigations done and were within normal limits. Skin biopsy was taken from the growth and histopathological examination revealed islands of tumour cells with peripheral palisading of basal calls with mitosis and peritumoral lacuna (Figures 2 &3). The proliferating connective tissue stroma is arranged in parallel bundles around the tumour masses.

DISCUSSION

Psoriasis occurs worldwide with an incidence of 1.5% to 2%, influenced by both genetic and environmental factors. It is an autoimmune T- cell mediated disorder, characterized by hyperproliferation of keratinocytes and abnormal differentiation with infiltration of lymphocytes and vascular endothelial changes in dermis. It clinically presents as chronic, symmetrical and well defined erythematous silvery white scaly plaques involving extensor aspects of extremities in common. Patients with psoriasis are at risk of developing cutaneous malignancy such as non-melanoma skin tumour and certain lymphoproliferative disorders. The increased risk is seen in patients whom there is severe psoriasis and those who are managed with methotrexate, biologicals, arsenic, topical tar and PUVA [2].

Basal cell carcinoma (synonym: basalioma, rodent ulcer) is a locally invasive malignant tumour of epidermis which constitutes almost about 80 percent of all other non melanoma tumours and the incidence is growing 10 percent every year [3]. Frequently arises over sun exposed areas and a least on non sun exposed areas or on areas of skin with scars, burns, chronic inflammation or skin grafts and arsenic exposure. Mutations occurring in genes such as p53, PTCH 1 and others are responsible for sporadic cases. In the majority of psoriasis patients managed with PUVA therapy, the initiator of p53 mutations basal cell carcinoma therapeutic or environmental UV-B exposure and a small portion by PUVA itself [4].

In basal cell carcinoma, the tumour cells escapes immune recognition and apoptosis by cytotoxic T lymphocytes by 1) failure of tumour cells to express Fas antigen (CD95), hence there is absence of T cell killing by Fas ligand(CD95L). 2) Overexpression of gene products of cell survival via Bcl-2. 3) Lack of expression of class II MHC antigens on the cell surface. 4) Production of cytokine IL-10 which suppresses co-stimulatory molecules expression B7-1(CD80) and B7-2(CD86) by antigen presenting cells resulting in inhibition of T cell activation [5]. An abnormal distribution and elevated levels of Protein kinase D, a keratinocyte pro-proliferative signaling enzyme is suggested to precipitate proliferative disorders such as psoriasis and basal cell carcinoma [6]. Clinically presents as small, pearly or translucent, raised papule or plaque with prominent telangiectasia of superficial vessels. Types of basal cell carcinoma includes superficial, nodulo-ulcerative, micro nodular, pigmented, morpheaform and fibro epithelioma basal cell carcinoma. Around 40-50 percent of patient with basal cell carcinoma will develop new lesions within 5 years [7].

The diagnosis of Basal cell carcinoma is made from tissue biopsy. Histopathological examination reveals palisading of lesional cell nuclei, specialized stroma, clefting artifact between the epithelium and stroma and the presence of atypical cells with mitotic activity. Nodular masses of basaloid cells are formed and that extends into dermis in relation to a delicate specialized tumour stroma. As a result of tumour necrosis or cellular dyshesion, cystic spaces are formed. The proliferating connective tissue stroma is arranged in parallel bundles around the tumour masses. Peri-tumoural lacunae or areas of retraction occur between tumour islands and stroma.

In case of keratotic basal cell carcinoma, parakeratotic cells and horn cysts (cyst which is self-possessed with keratinized cells, represent attempts at formation of hair shaft) are seen [8]. Management and prognosis of basal cell carcinoma depends upon the site of the lesion, clinical subtype and primary or recurrent. Full thickness excision with a marginal clearance of 4 cm, electro-dessication and cautery, curettage cryotherapy and 5-fluorouracil can be employed. Other modalities include radiotherapy, laser therapy, and photo-dynamic therapy involving the usage of 5-aminolevulinic acid as tumour sensitizer [9].

Figure 1. Clinical photograph showing basal cell carcinoma over a psoriatic plaque.

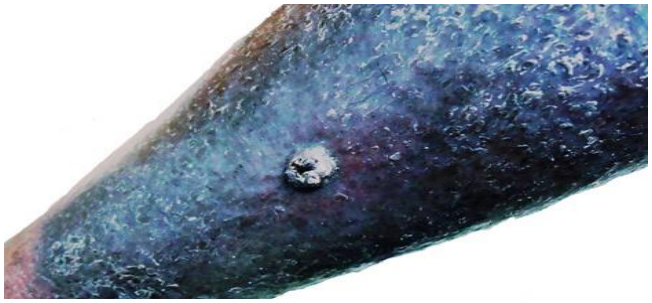


Figure 2. Basal cell carcinoma: Histopathology showing islands of tumour cells with peripheral palisading of lesional cells, mitotic and apoptotic cells.

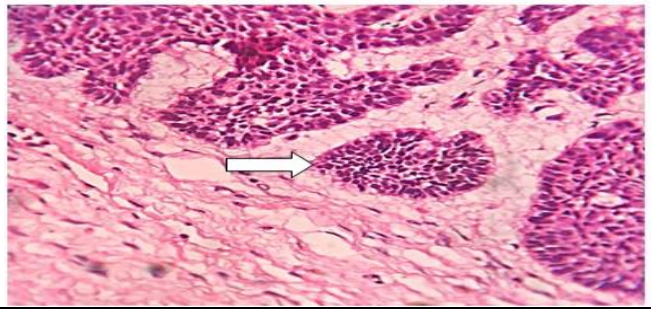


Figure 3. Basal cell carcinoma: Histopathology showing islands of tumour cells with peritumoral lacunae.

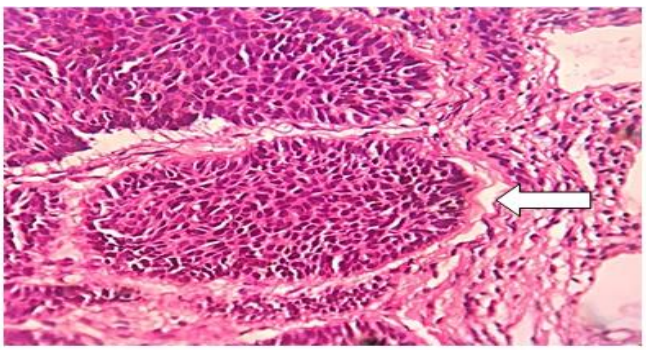
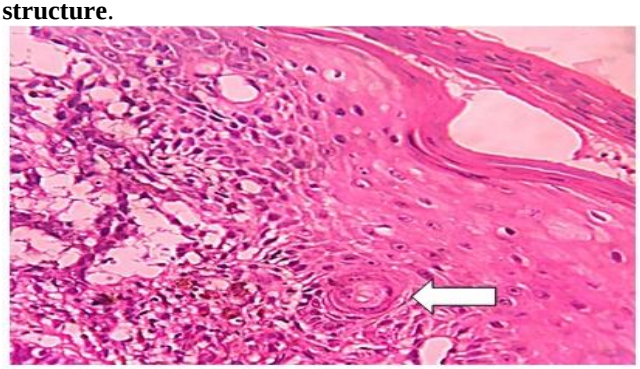


Figure 4. Basal cell carcinoma: Histopathology showing the formation of horn cyst which resembles a follicular structure.



CONCLUSION

Patients with long term psoriasis should be advised to screen regularly for any malignant transformation. This case is reported because of its rare occurrence and poor prognosis.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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