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Case Report

Clinicopathological and dermoscopic correlation of pigmented basal cell carcinoma

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ABSTRACT

Basal cell carcinoma (BCC), also known as basal cell epithelioma is the most common cutaneous malignancy affecting fair skinned individuals arising from sun exposed skin especially head and neck area. It is a slow growing tumor which rarely metastasizes. UV radiation is the most important predisposing factor. It includes mainly four variants: (a) nodular, (b) pigmented, (c) superficial BCC, (d) sclerosing or morphea form of which most common is nodular variant. Dermoscopy of pigmented BCC shows well focussed arborizing vessels which is the hallmark. The best modality of treatment is surgical excison of tumour, electrodesiccation and curettage, cryosurgery, and Mohs micrographic surgery.

Keywords: Basal cell carcinoma, UV radiation, Pigmented variant, Arborizing vessels

INTRODUCTION

Basal cell carcinoma (BCC) is the most common malignant skin tumor arising from sun exposed areas like head, neck, trunk and rarely involves other areas like abdomen, perianal region and groin. It represents 65% of all the epidermal tumors.[1] It is more prevalent in males of 4-6th decade. The risk factors include Fitzpatrick skin type 1, 2, ultraviolet B radiation; previous exposure to arsenic, radiotherapy and associated with syndromes like basal cell nevus syndrome, albinism, xeroderma pigmentosum, Bazex syndrome, scars, pre-existing skin disorders like lupus vulgaris, DLE, EDV, and acne conglobate.[2]

CASE REPORT

A 55-syears-old female presented with complaints of asymptomatic single brownish-black colored slightly raised lesion over forehead for 1 year. She had history of a small pigmented papule over that site since childhood which suddenly increased in size in past 1 year. There was no history of trauma or photosensitivity. She had no history of diabetes, hypertension and other malignancies. On examination, a solitary, non-tender 6×4 cm well defined brownish-black plaque is present on forehead with crusted verrucous papules over centre of the plaque with raised edges and indurated base (Figure 1). Bilateral submandibular lymphadenopathy noted.

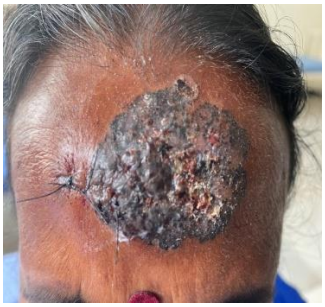

Figure 1: Clinical picture showing well defined brownish-black plaque of 6×4 cm over forehead with crusted verrucous papules over centre of the plaque.

We considered a differential diagnosis of malignant melanoma, basal cell carcinoma, basosquamous carcinoma

Dermoscopy showed arborizing telangiectasias, maple-leaf like structure at the margin. linear, arborising vessels, blue-grey ovoid nests, pigment globules, white-structureless areas (Figures 2-3).

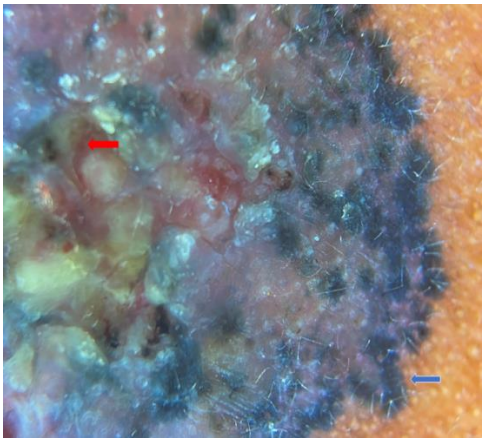

Figure 2: Dermoscopy at 20X magnification [polarised mode: shows linear-arborising vessels (red arrow), maple-leaf like structure at the margin (blue arrow)].

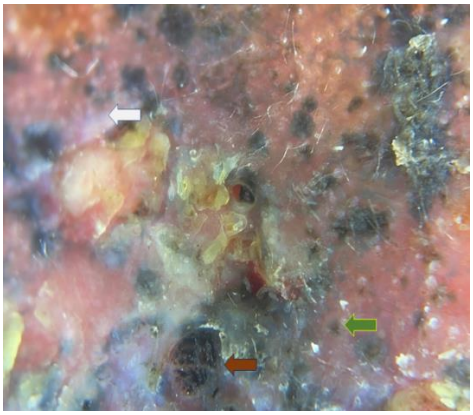

Figure 3: Dermoscopy at 20X magnification [polarised mode: shows white-structureless areas (white arrow), blue-grey ovoid nests (brown arrow, pigment globules (green arrow)].

Incisional biopsy for histopathological examination was done from the edge of the lesion which showed epidermal atrophy with increased melanin pigmentation in epidermis, multiple large round aggregates of basaloid cells extending from epidermis into dermis with peripheral palisading, peritumoral retraction cleft, horn cysts, mitotic figures (Figures 4-6).

With these clinical, dermoscopic and histopathological findings, we made a diagnosis of basal cell carcinoma-pigmented variant.

Patient was referred to surgical oncologist for further management.

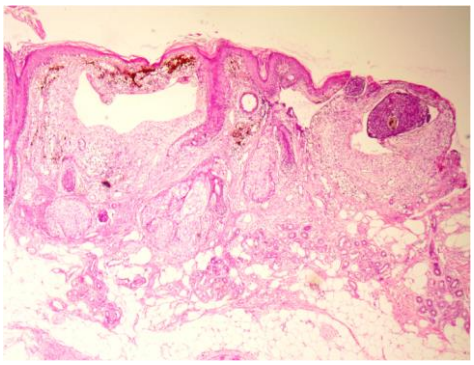

Figure 4: H and E staining, Scanner view at 4X- epidermal atrophy with increased melanin pigmentation in epidermis and aggregate of basaloid cells with peritumoral retraction cleft.

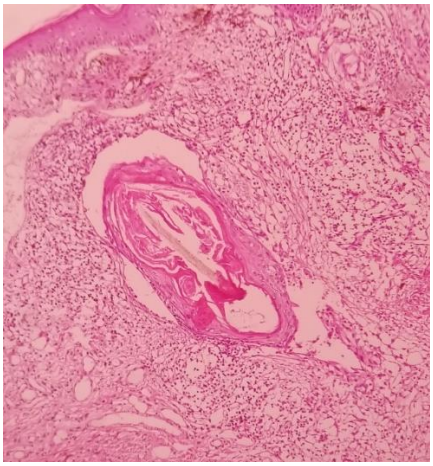

Figure 5: H and E staining under low power view at 10X- horn cysts within upper dermis.

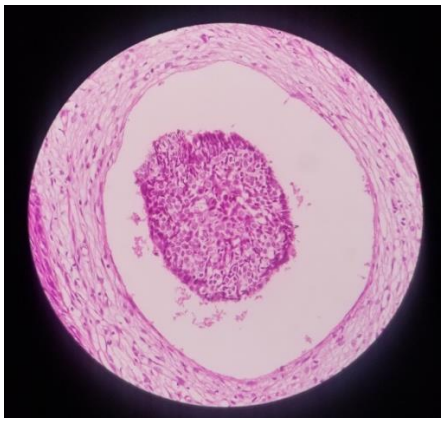

Figure 6: H and E staining under high power view at 40X- large round aggregate of basaloid cells with peripheral palisading and peritumoral retraction cleft.

DISCUSSION

BCC, also known as basal cell epithelioma is the most common malignant skin tumour which is slowly growing occurring in fair skin individuals over more sun exposed areas like head, neck and trunk most commonly with rare metastasis. It is more common in males.[3]

The main etiopathogenensis is due to ultraviolet radiation which causes mutations in p53 tumour suppressor gene and damages DNA. Sonic hedgehog signalling pathway is activated by loss of PTCH 1 which activates smoothened gene (SMO) thus inhibiting suppressor fused (SUFU) gene leading to activation of GL1, 2, 3.[4] BCC is dependent on loose connective tissue stroma which contains dermal fibroblasts and thin collagen fibres for its continued growth. There is also increased expression of matrix metallo proteases, collagenases which degrade pre-existing dermal tissue and facilitate spread of tumour cells.

There are more than 26 variants of BCC of which more common types are- nodular, pigmented, superficial, sclerosing or morphea form, fibroepithelioma of pinkus, basosquamous carcinoma.

Nodular BCCs typically presents as a shiny, pink- or flesh-colored pearly papule or nodule with smooth surface, central depression and arborizing telangiectasia. They have rolled out or thready translucent border with bleeding, ulceration and erosion. Pigmented nodular BCCs are subtype of nodular BCC with brownish pigmented papule, more common in dark-skinned individuals. Superficial BCCs present as a well circumscribed erythematous macule or papule with focal crusts with thin rolled out border, atrophy and hypopigmentation. Morphea form subtype has an aggressive growth with ivory white indurated plaque with ill-defined borders. It may resemble a scar or plaque of morphea.

Dermoscopy of pigmented BCC shows well focussed arborizing vessels which is the hall-mark. Other features include large blue grey ovoid nests, blue grey globules, leaf like structures, comma vessels, corkscrew vessels, featureless areas, spoke wheel areas.

Histologically, large round-oval aggregates of basaloid keratinocytes which extends from epidermis into dermis with peripheral palisading and peritumoral retraction clefts and horn cysts. Mucin deposition may be present in tumor and stroma around the tumor. Mitotic figures also can be seen. In pigmented variant, melanocytes are interspersed between tumor cells and contain numerous melanin granules.

Treatment of BCC mainly depends on size, site and type of lesion. Main stay of treatment is surgical, sometimes medical and radiation therapy can also be used. Standard excision for primary non-aggressive lesions with 4 mm margin removal and Mohs micrographic surgery for aggressive and recurrent lesions is effective surgical modality for treatment of BCC. Other therapies include, curettage and dissection, cryosurgery, radiation therapy, photodynamic therapy, topical 5% fluorouracil, 5% imiquimod, systemically hedgehog inhibitors like vismodegib, sonidegib. Also, lasers like CO2, Nd-YAG, pulse dyed lasers are also effective.

CONCLUSION

We hereby report a case of pigmented basal cell carcinoma which clinically mimicked malignant melanoma and dermoscopy, histopatology played an important role in the diagnosis of this case which showed classical findings and helpful for the treatment and prognosis.

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Ethical approval: Not requird

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