Case Report

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Pigmented Basal Cell Carcinoma: A Clinical Variant, Report of Two Cases

Dermatology Section

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ABSTRACT

Basal cell carcinoma is the most common malignant tumour of skin, comprising 80% of non-melanoma cancers. Intermittent exposure to ultraviolet radiation is an important risk factor. Pigmented basal cell carcinoma is a clinical and histological variant of basal cell carcinoma that exhibits increased pigmentation. It is a very rare variant, although its frequency can reach upto 6% of total basal cell carcinomas in Hispanics. Herein, we are reporting 2 cases of pigmented basal cell carcinoma.

Keywords: Pigmented basal cell carcinoma, Non-melanoma cancer, Ultraviolet radiation

INTRODUCTION

Basal cell carcinoma (BCC) is the common malignant neoplasm of skin. It comprises of 80% non-melanoma cancers. This disorder is more common in whites and it is a slow growing, locally invasive tumour. Pigmented BCC is a rare clinical and histological variant of BCC that exhibits increased pigmentation. Frequency of pigmented BCC varies, being 6% of total BCCs.

CASE REPORTS

Case 1

A 50-year-old male presented with a pigmented lesion over the right outer aspect of forehead, since a year. Initially had a reddish elevated appearance with itching, burning and associated photosensitivity. The lesion had gradually eroded and enlarged to present size of 5*6 cms over a period of 1 year.

On examination, a solitary well-defined depressed lesion was noted on right temporal region of scalp, of size 5*6 cms. The surface showed thickened pigmented papular islands of growth with telengiectasias. The borders were raised, thread like and irregular in outline [Table/Fig-1]. No regional lymphadenopathy was found. Systemic examination was within normal limits.

On biopsy, tumour cells were found to be arranged in nesting pattern, with characteristic basaloid cells, retraction clefting, with areas of pigmentation, which were suggestive of pigmented BCC [Table/Fig-2]. All routine investigations were normal.

Differential diagnosis of melanoma, squamous cell carcinoma and discoid lupus erythematosus were considered on clinical examination, but ruled out on histopathology. Patient was then referred to an oncologist for further management.

Case 2

A 68-year-old female presented with an asymptomatic, pigmented lesion near inner canthus of left eye, since 5 years. Initially presented as a solid elevated lesion and then progressed over a period of 1 year to the present size of 4*3 cms. No other complaints were noted.

Examination revealed a solitary, well-defined, blackish, pigmented plaque measuring 4×3cms, situated near the inner canthus of left eye. The surface showed thickened, pigmented, papular islands of growth and the borders were raised, thread like and irregular [Table/Fig-3]. No regional lymphadenopathy was noted. Systemic examinations was within normal limits.

On biopsy, peripheral palisading of nuclei of basaloid cells, with retraction clefting and areas of pigmentation were seen, which were suggestive of pigmented BCC [Table/Fig-4]. The routine investigations were normal.

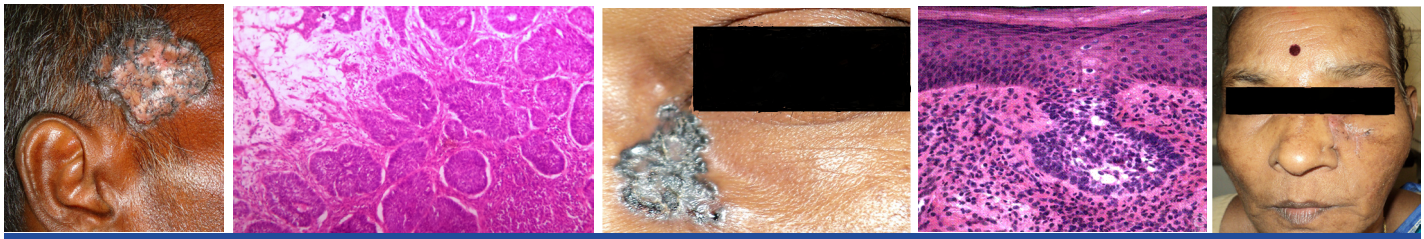
Differential diagnosis of melanoma, squamous cell carcinoma, discoid lupus erythematosus and nevus comedonicus were considered on clinical basis, but ruled out on histopathology. Patient was referred to Otorhinolaryngology Department where she underwent surgical excision and a reconstructive procedure. The lesion was completely removed, with good cosmetic results [Table/Fig-5].

DISCUSSION

Basal cell carcinoma (BCC) is a common malignant neoplasm of skin, derived from non keratinizing cells that originate from the basal layer of the epidermis [1]. Pigmented basal cell carcinoma is a clinical and a histological variant of BCC which is characterized by brown or black pigmentation, comprising only of 6% of total BCCs [2].

Aetiopathogenesis

Combination of environmental factors, phenotype and genetic predisposition accounts for main aetiological factors. Intermittent



[Table/Fig-1]: Pigmented BCC: A solitary well-defined plaque with thickened pigmented papular islands with telengiectasias
[Table/Fig-2]: Basaloid cells, peripheral palisading and retraction clefting artefacts with areas of pigmentation(40x, H&E stain)
[Table/Fig-3]: Pigmented BCC: A solitary well-defined plaque with thickened pigmented papular islands and irregular raised thread-like borders
[Table/Fig-4]: Peripheral palisading nuclei of basaloid cells(100x, H&E stain)
[Table/Fig-5]: Post-operative 7th day with complete healing and better cosmetic result

Ultraviolet (UV) radiation exposure is an important risk factor for development of BCC.

UV radiation [2]

1. Induces mutations in certain genes within the cells, such as p53 gene for BCC and squamous cell carcinoma (SCC) and the patched (PTCH1) gene for BCC.
2. Causes alteration in base substitution at dipyrimidine sites.
3. Induces inflammation via cyclooxygenase-2 pathway.

Patients with light skin phenotype with blue eyes, red hair and easy freckling are more predisposed [3].

Exposure to ionizing radiations, arsenic [4] and coal tar derivatives [3] are the other risk factors.

Clinical Features

BCC was first described in the year 1827 by Jacob [3]. It classically appears as a slow growing, translucent elevated lesion on sun exposed areas, mostly in the head and neck region. It is more common in fair elderly males after the age of 50 years [4]. It is characterized by almost a total absence of metastasis (less than 0.01% cases) and local virulence [5]. Nodular, superficial spreading and infiltrating variants are commonly encountered types of BCCs [6]. Pigmented BCC is rare, which comprises only of 6% of total BCC cases [2].

Histopathology

Basal cell carcinomas tends to share the following common features: [7].

- Predominant cell type is basal.
- Peripheral palisading of lesional nuclei.
- Specialized stroma.
- Clefting artefact between epithelium and the stroma.

Most common type which is observed is nodular type, which is characterized by nodular masses of basaloid cells extending into the dermis, in relation to a delicate, specialized tumour stroma. The cells have large, oval or elongated nuclei with little cytoplasm. The peritumoural lacunae or retraction clefts, which are characteristic of basal cell carcinoma, help in differentiating it from SCC. Pigmented BCC is a variant which shows increased melanin pigments which are produced by benign melanocytes that colonize the tumour.

Differential diagnosis for pigmented BCC include, pigmented naevi, melanoma, pigmented seborrheic keratosis and pigmented Bowen's disease [2].

Management

Excision is the primary treatment option for nonmelanoma skin cancer [2]. Margins are generally 3-6mm for small and well delineated BCCs; this achieves a satisfactory tumour clearance rate of 84.9% [8]. Incomplete excision is associated with tumour location i.e., on mid face and trunk, rather than tumour size or duration [8]. Surgical defects are repaired with primary closure, flaps, grafts or they are left to heal by secondary intention.

According to study done by Ro KW et al, pigmented BCCs show lesser subclinical infiltration than non-pigmented BCCs [9].

Various other modalities which have been tried to manage BCCs include curettage and electrodessication, radiotherapy, Mohs' micrographic surgery (highest cure rates and greater tissue conservation), cryosurgery, light amplification by stimulated emission of radiation (LASER) surgery, photodynamic therapy, interferons, and chemoprevention with retinoids and cyclooxygenase-2 inhibitors. Topical modalities like imiquimod and 5-flourouracil have been used in low risk superficial BCCs [2]. Along with these, preventive measures like avoidance of sun exposure, use of sunscreens and protective clothing should be advised to the patient.

CONCLUSION

BCC is the most common malignant non-melanoma skin cancer in the world. Pigmented BCC is rare, but it is becoming increasingly common in Asian population. UV radiation is the most important preventable predisposing factor. It is the duty of the physician to educate and reinforce the patient about this malignancy, the preventive measures which have to be followed and the various treatment modalities that are available. With increased patient awareness and advent of newer treatment modalities, better outcomes and increased survival of patients are expected.

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