

## HISTOPATHOLOGICAL AND CLINICAL SPECTRUM OF BASAL CELL CARCINOMA : OBSERVATIONAL STUDY IN A TERTIARY CARE CENTER

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### Abstract

**Background:** Basal cell carcinoma is one of the most common skin cancer seen worldwide. It accounts for more than 80 % of nonmelanoma skin cancer. This article highlights its various histological subtypes along with their clinical correlational and few new and interesting points noted in the histopathological and clinical presentation. **Materials and Methods:** Retrospective observation and detailed analysis was done of the cases of basal cell carcinoma reported in the histopathology department of a tertiary care center during the span of one year. **Result:** Eleven cases of Basal cell carcinoma were studied, male to female ratio of incidence in our study was 0.57. The common age group involved was between 71-80 years with median age of presentation being 59.5 years. The commonest site of involvement was eyelid. The histological variants noted were nodular, basosquamous, pigmented and superficial spreading. **Conclusion:** Diagnosing and exact typing of Basal cell carcinoma and its variant on histopathology plays a key role in the correct treatment of the patients.

## INTRODUCTION

Basal cell carcinoma is the most common malignant cutaneous tumor worldwide. It is prevalent in the white skinned and industrialized western population and second most common malignancy after squamous cell carcinoma.<sup>[1,2]</sup> It is locally invasive, slow growing cutaneous malignancy which does not metastasize.<sup>[3,4]</sup> BCC can be caused due to chronic sun exposure, ultraviolet /ionizing radiations, chemical carcinogenesis, burns, chronic irritation and certain inherited syndromes like Gorlin Goltz syndrome.<sup>[5]</sup> It affects mostly males above 40 years of age but can also be seen in children.<sup>[6]</sup> 80 % of BCC occurs in head and neck region where nodular variant is commonly seen, while superficial spreading type occurs on trunk.<sup>[7]</sup> There are many histological variants of BCC. Aggressive variants are morpheaform, metatypical, basosquamous and infiltrative.

## MATERIALS AND METHODS

We studied and compared various histopathological variants along with detailed clinical history and presentation of eleven cases of basal cell carcinoma

reported in histopathological department of a tertiary care centre from January 2022 to December 2022.

### CASES

A total of 5 cases with histopathological diagnosis of nodular type BCC were reported.

**Case 1-** A 8 years male came with swelling in the pre auricular region since 1 year. Clinical diagnosis was nodular BCC and histopathology confirmed noduloulcerative BCC.

**Case 2-** A 38 years male had a hyperpigmented plaque with central ulceration over the right cheek since 2 years. Clinical diagnosis was pigmented BCC but histopathology revealed nodular BCC.

**Case 3-** A 55 years male presented with swelling on the upper eyelid since 1 year. Clinical as well as histopathological diagnosis confirmed nodular BCC.

**Case 4-** A 65 years female had a noduloulcerative lesion on the forehead since 6 months [Figure 1]. Clinically it was noduloulcerative BCC which was confirmed on histopathology.

**Case 5-** A 55 years female presented with an erythematous nodular lesion over the lower eyelid since 3 years. Clinical diagnosis was nodular BCC. Histopathological examination revealed nodular growth of the tumor with peripheral palisading of tumor cells suggestive of nodular BCC [Figure 2].

A total of three cases of basosquamous BCC were reported.

**Case 6-** A 71 years female presented with ulcerative plaque of 3x2 cm on the left temporal region since 1 year. Clinically it was diagnosed as noduloulcerative BCC. Histopathology revealed basosquamous variant of BCC consisting of biphasic tumor with foci of neoplastic squamous differentiation [ Figure 3 & 4].

**Case 7-** A 72 years female came with 2x2 cm erythematous scaly plaque over lateral part of nose since 6 months. Clinical impression was superficial BCC while histopathology revealed basosquamous BCC.

**Case 8-** A 76 years female presented with an erythematous nodule on lower eyelid since 3 years. Clinical impression was nodular BCC. Histopathology favored basosquamous BCC.

Total two cases of pigmented BCC were diagnosed.

**Case 9-** A 70 years female had a hyperpigmented plaque on lower eyelid since 2 years [ Fig.5]. Clinical as well as histopathological diagnosis was pigmented BCC.

**Case 10-** A 70 years female presented with hyperpigmented nodule on the right side of cheek since 8 months. Clinical as well as histopathological diagnosis of pigmented BCC was made. On histopathology basaloid tumor cells with peripheral palisading and extracellular melanin pigment were seen [Figure 6].

A single case of superficial spreading BCC was reported.

**Case 11-** A 75 years male presented with black coloured patch on right nasolabial fold since 10 months. It gradually increased in size and bled on touch. Clinical as well as histopathological diagnosis of superficial spreading BCC was given.

## RESULTS

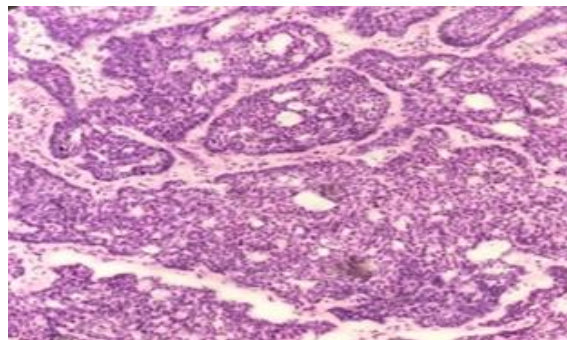
We studied 11 cases of BCC with following subtypes [Table 1].

The common age group affected in our study was between 71-80 years (36.3%); followed by 61-70 years (27.2%). Mean age was 59.5 years. Oldest patient in our study was 76 years while youngest was an eight year old male child. In our study BCC was distributed in head and neck area similar to the finding of Malhotra et al [13]. The most common site of involvement was eyelid (36.3%) followed by nose, forehead and cheek (18.1%). On histopathology we found maximum nodular variant(45.4%) followed by basosquamous(27.2%), pigmented(18.1%) and superficial spreading(9%). On H&E the nodular variant showed nodules of basaloid cells with peripheral palisading. We observed three cases of basosquamous BCC in our study. This variant is rare having both histological features of BCC and squamous cell carcinoma. Basosquamous carcinoma is locally invasive and more aggressive. Pigmented BCC was third most common histological variant.

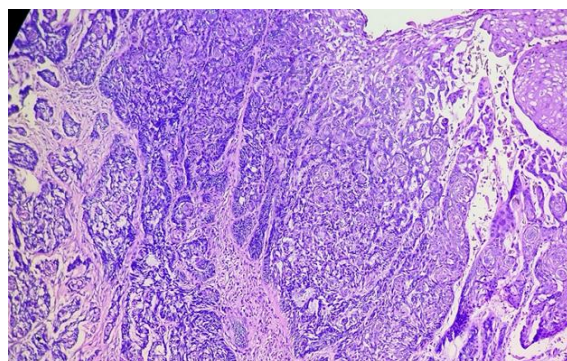
The nodular and superficial variants both can be pigmented. Histologically it shows nodules of basaloid cells with presence of melanin pigment within. In our study we found only one case of superficial BCC in which there were isolated basaloid nodules projecting from lower margin of the epidermis. In most of our cases patients were treated successfully by surgical excision with wide margin along with cosmetic repair and flap reconstruction as required. One case of basosquamous carcinoma developed regional lymph node metastasis and died within six months of diagnosis. The clinicopathological correlation of these 11 cases is shown in [Table 2].



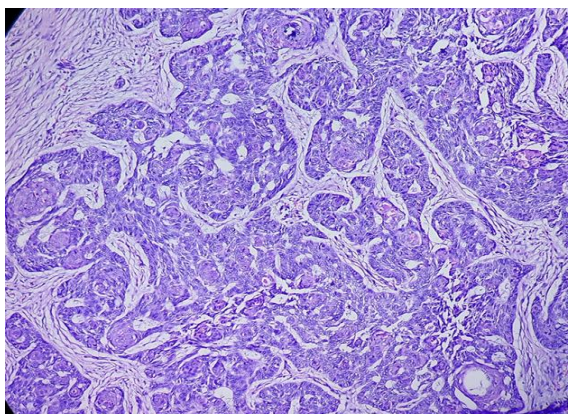
**Figure 1: Noduloulcerative skin lesion on forehead.**



**Figure 2: H&E (20X)-Nodular BCC showing peripheral palisading of tumor cells.**



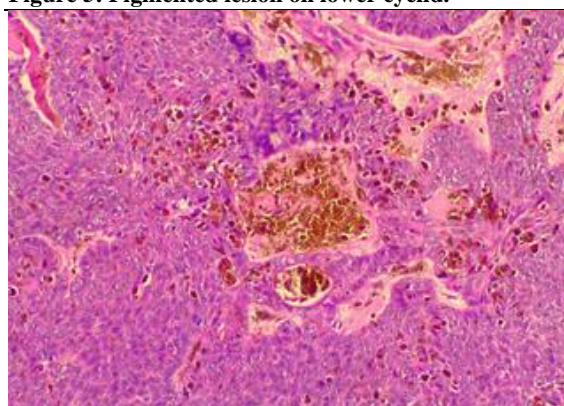
**Figure 3: H&E (20X)-Basosquamous BCC showing both basaloid and squamous components.**



**Figure 4: H&E (40X)- Basosquamous BCC showing both basaloid and squamous components.**



**Figure 5: Pigmented lesion on lower eyelid.**



**Figure 6: H&E (40X)-Pigmented BCC showing presence of pigment both within tumor cells and extracellular as well.**

**Table 1: Histological variants of BCC**

Histological variant of BCC	Number of patients
Nodular	5
Basosquamous	3
Pigmented	2
Superficial spreading	1

**Table 2: Clinicopathological spectrum of BCC**

Sr No	Age in Years	Sex	Site of tumor	Clinical presentation	Histopathological diagnosis
1	8	Male	Preauricular	Nodular swelling	Nodular BCC
2	38	Male	Right cheek	Ulcerated hyperpigmented plaque	Nodular BCC
3	55	Male	Upper eyelid	Nodular swelling	Nodular BCC
4	65	Female	Forehead	Ulcerated nodule	Nodular BCC
5	55	Female	Lower eyelid	Erythematous nodule	Nodular BCC
6	71	Female	Temporal region	Ulcerated plaque	Pigmented BCC
7	72	Female	Lateral part of nose	Plaque like lesion	Pigmented BCC
8	76	Female	Lower eyelid	Hyperpigmented swelling	Pigmented BCC
9	70	Female	Lower eyelid	Hyperpigmented plaque	Basosquamous BCC
10	70	Female	Right cheek	Hyperpigmented nodule	Basosquamous BCC
11	75	Male	Nasolabial fold	Black patch	Superficial spreading

## DISCUSSION

Basal cell carcinoma was previously also known as rodent ulcer. It is an indolent carcinoma with metastatic incidence of 0.01 to 0.028%.<sup>[8]</sup> Our study includes eleven patients of BCC out of which four were males and seven females. The male to female ratio was 0.57. Our findings are similar to Laishram et al,<sup>[9]</sup> who reported female preponderance while Sibel Hakverdi et al,<sup>[10]</sup> showed male preponderance. Females are affected more than males in our study as

these are rural women who work in open kitchen and in farms exposing them to high intensity UV rays. Female predilection might also be because of their thin skin having low collagen density in dermis than males.<sup>[11]</sup>

The common age group affected in our study was between 71-80 years (36.3%); followed by 61-70 years (27.2%). Mean age was 59.5 years which was similar to Obaidullah and

Aslam who showed mean age of 56.3 years.<sup>[12]</sup> Oldest patient in our study was 76 years while youngest was

an eight year old male child. Higher occurrence of BCC in elderly might be because of DNA damage and impaired DNA repair mechanism due to UV light.

In our study BCC was distributed in head and neck area similar to the finding of Malhotra et al.<sup>[13]</sup> The most common site of involvement was eyelid (36.3%) followed by nose, forehead and cheek (18.1%). This was in contrast with study of Asif et al,<sup>[14]</sup> where nose was most common site (28.9%), followed by eye (24.7%) and then cheek (20.4%).

On histopathology we found nodular variant(45.4%) followed by basosquamous(27.2%), pigmented (18.1%) and superficial spreading(9%). These findings were similar to Malhotra et al,<sup>[13]</sup> K Bhavana Dhana Laxmi,<sup>[15]</sup> and Somil Singhal.<sup>[8]</sup> On H&E the nodular variant showed nodules of basaloid cells with peripheral palisading. We observed three cases of basosquamous BCC in our study. This variant is rare having both histological features of BCC and squamous cell carcinoma. Basosquamous carcinoma is locally invasive and more aggressive. Pigmented BCC was third most common histological variant. The nodular and superficial variants both can be pigmented. Histologically it shows nodules of basaloid cells with presence of melanin pigment within. In our study we found only one case of superficial BCC in which there were isolated basaloid nodules projecting from lower margin of the epidermis.

## CONCLUSION

This study highlights the increasing trend of BCC in female population. Clinically nodular variant of BCC can be diagnosed but it is difficult to diagnose other variants especially basosquamous type and other locally aggressive one. So histopathological study is important in such cases. The diagnosis of BCC can be done by correlating the clinical features, gross and histopathological findings. Thus, early detection of BCC with a proper treatment and reconstruction is not only helpful for effective treatment of patients but also reduces morbidity with better cosmetic results.

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