

## Case Series

# Basal cell carcinoma and its rare variants: a case series

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### ABSTRACT

Basal cell carcinoma (BCC) is the most common type of skin cancer worldwide. It is more common in elderly, occurs mostly in the head and neck region. Its incidence is widely increasing due to widespread UV –B rays exposure. Although many variants of BCC exist, metastatic BCC is rare and occurs with aggressive histopathological types like morpheaform, metatypical, basosquamous and infiltrative. We described twelve cases and reviewed the literature. Majority of the patients belonged to the age group of 61-70 years. Majority of them were females (58.3%). The most common site of involvement was cheek (41.6%). The most common morphological variant of BCC was nodular type in 50%. The most common histopathological variant was of nodular type in 33.3%. This study highlights the paradoxically increasing trend of BCC with female predilection. This study highlights the importance of creating awareness among general practitioners, general population and public health workers.

**Keywords:** Basal cell carcinoma, Nodular type of BCC, Pigmented type of BCC

### INTRODUCTION

Basal cell carcinoma (BCC) is the most common type of skin cancer worldwide. It is the most prevalent cancer type among white-skinned populations worldwide and particularly in industrialized Western societies.<sup>1</sup> It accounts for 75% of cases of all non-melanoma skin cancer worldwide. Geographical location plays an extremely important role in the distribution and frequency of incidence rates. In people with outdoor occupations like miners, quarry men, railway engine drivers and firemen, the frequency of BCC is high.<sup>2</sup> Its incidence is widely increasing due to widespread Ultraviolet –B rays exposure. Apart from Ultraviolet –B rays, radiation exposure, exposure to arsenic salts, chemical carcinogens, burns scar, radiation scar are the various other factors.<sup>3</sup> It is a slow-growing malignant tumour of the skin that invades the adjacent tissues with a metastatic incidence of 0.01% - 0.028%.<sup>4</sup> Males are most

commonly affected than females.<sup>5</sup> BCC generally occurs in adults over 40 years of age but it may occur in children and young adults.<sup>6</sup> Head and neck are known as the most common localizations of basal cell carcinoma (80%). Head and neck is the most common site for nodular BCC whereas the trunk is the most common location of superficial spreading BCC.<sup>7</sup> Although many variants of BCC exist, metastatic BCC is rare and occurs with aggressive histopathological types like morpheaform, metatypical, basosquamous and infiltrative. However, the basal cell carcinoma early onset is associated with syndromes like Gorlin syndrome, Xeroderma Pigmentosum and Bazex syndrome.

### CASE SERIES

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

**Case 1**

Case 1 was a 45 years female (Figure 1) with a single noduloulcerative lesion on the nose since 3 months with the clinical diagnosis of nodular type of BCC. All the necessary investigations were carried out and the histopathological examination of the specimen showed nodular growths of the tumor with peripheral palisading (Figure 2) suggestive of nodular BCC.



**Figure 1: A 45 years female with a single noduloulcerative lesion on the nose.**



**Figure 2: Nodular basal cell carcinoma shows nodular growths of tumour with peripheral palisading.**

**Case 2**

Case 2 was a 68 year female with a pigmented lesion over the cheek since 2 years with the clinical diagnosis of pigmented type of BCC but the histopathological examination of the specimen revealed nodular type of BCC.

**Case 3**

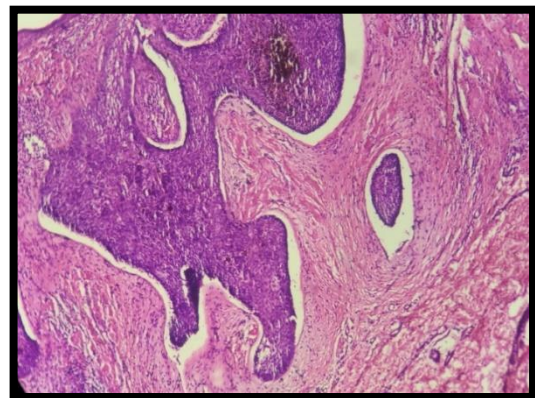
Case 3 was a 66 years old female with a noduloulcerative lesion on the left cheek since one and half year with a clinical and histopathological diagnosis of nodular type of BCC.

**Case 4**

Case 4 was a 72 year female with a nodular lesion over the left periorbital area since 8 months with the clinical diagnosis of pigmented type of BCC but the histopathological examination of the specimen revealed noduloulcerative type of BCC.



**Figure 3: A 58 years female with a hyperpigmented plaque on right side of nose.**



**Figure 4: Histopathology showing melanin pigment within solid areas of basal cell carcinoma.**



**Figure 5: A 60 year male with an ulcerative plaque on the forehead with histopathological diagnosis of basosquamous carcinoma.**

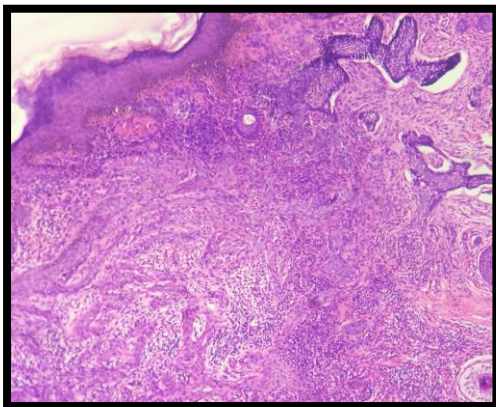
A total of two cases with histopathological diagnosis of pigmented type of BCC were reported.

**Case 5**

Case 5 was a 55 years male with a hyperpigmented nodule on right side of cheek with a clinical and histopathological diagnosis of pigmented type on HPE.



**Figure 6: A 50 years male with atrophic plaque on the left zygomatic arch.**



**Figure 7: Histopathology of morpheaform BCC with thin strands of tumor cells extending into deep dermis.**

**Case 6**

Case 6 was a 58 years female (Figure 3) who presented with a hyperpigmented ulcerative plaque on right side of nose with a clinical diagnosis of nodular type of BCC and histopathological examination of the specimen revealed melanin pigment within solid areas of basal cell carcinoma pigmented type of BCC. (Figure 4).

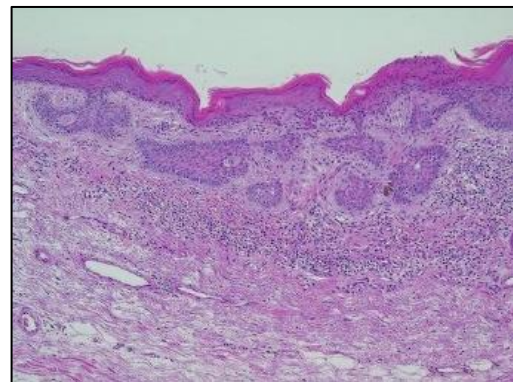
**Case 7**

Case 7 was a 67 years female presented with a noduloulcerative lesion on the lower lip since 2 and half years with clinical and histopathological diagnosis as pigmented type.

A total of two cases with histopathological diagnosis of basosquamous type of BCC were made.



**Figure 8: A 70 year male with a hyper pigmented plaque, crusting noted over the left cheek.**



**Figure 9: Superficial BCC showing irregular buds and proliferation of the basaloid layer of cells.**

**Case 8**

Case 8 was a 60 year old male (Figure 5) with an ulcerative plaque on the forehead since 10 months a clinical diagnosis of noduloulcerative type of BCC was made histopathological examination of the specimen revealed showing focal keratinization consisting of pearls and an outer row of basaloid cells.

**Case 9**

Case 9 was a 62 years old male patient with a large ulcerative lesion with rolled out margins on the forehead since 3 years a clinical diagnosis and histopathological of noduloulcerative type of BCC was made. CECT of head and neck showed that the lesion extended posteriorly and eroded the inner and outer cortex of frontal bone on right side, medially into the frontal sinus, laterally the lesion eroded the right zygomatic process of frontal bone, inferiorly the lesion eroded the roof of right orbit with infiltration into extraconal and intraconal fat of right orbit

**Case 10**

*A single case of morpheaform BCC was reported*



Case 10 was a 50 years old male with atrophic plaque on the left zygomatic arch (Figure 6) since 18 months clinical and histopathological diagnosis of morpheaform BCC was made.

Histopathological examination of the specimen revealed thin strands of tumor cells extending into deep dermis (Figure 7).

### **Case 11**

*A single case of infundibulocystic BCC was reported*

A 64 year old female presented with a noduloulcerative lesion over the right retroauricular area since 4 years. A clinical diagnosis of noduloulcerative BCC was made but the histopathological examination revealed infundibulocystic BCC.

### **Case 12**

*A single case of superficial spreading type of BCC was reported*

Case 12 was a 70 year old male with a hyperpigmented plaque, crusting noted over the left cheek (Figure 8) since 3 years clinical and histopathological diagnosis superficial spreading BCC was made. Histopathological examination of the specimen revealed Superficial BCC showing irregular buds and proliferation (Figure 9).

## **DISCUSSION**

### **Age distribution**

The most common age group affected is 61-70 years with a mean age of 66 years, however study conducted by Aslam et al which showed a mean age of 56.3 years.<sup>8</sup> Higher occurrence of BCC among elderly may be due to cumulative UV rays induced DNA damage as well as reduced functioning of DNA repair mechanisms with aging. Maximum age of the patient affected by BCC in my study was 72 years.

### **Gender distribution**

A total of 12 patients of basal cell carcinoma were included in the study out of which 5 were males and 7 were females with a male to female ratio of 1:1.4. This is similar to study conducted by Laishram et al which showed a female preponderance.<sup>9</sup> It is contrast to western studies, a study conducted by Sibel et al retrospective analysis of basal cell carcinoma showed male preponderance.<sup>10</sup> However, in most of the studies conducted worldwide a male preponderance is seen due to greater occupational exposure to UV rays. An unusual female preponderance noted in our study can be attributed to rural women who work in open kitchen during their household chores and work in fields during harvesting seasons exposing them to high intensity

intermittent UV rays. This female predilection may also be attributed to structurally thinner skin with lower collagen density in the dermis when compared to men.

### **Duration of disease**

Duration of the disease ranged from 6 months to 4 years. The patients usually present late this can be attributed to lack of awareness about disease entity which leads to complications like disfigurement and metastasis. Long duration of the disease may lead to the following complications: local invasion may leads to local tissue destruction and disfigurement, perineural invasion, metastasis.

### **Distribution of bcc according to site**

The most common site of involvement was cheek (41.6%) followed by nose and forehead this is contrast to study conducted by Asif et al where nose was the most common site (28.9%), followed by eye (24.7%) followed by cheek (20.4%).<sup>11</sup> This is similar to a study conducted by Malhotra et al, 'Basal cell carcinoma in the north Indian population' which showed head and neck being the commonest site (91.2%).<sup>12</sup>

### **Morphological types of BCC**

The most common morphological variant was nodular/noduloulcerative type (50%), followed by pigmented BCC (33.3%) followed by superficial BCC. (8.3%) and morpheaform BCC (8.3%). This is consistent with a study conducted by Sumir et al where the most common morphological type was nodular / noduloulcerative BCC (77.8%) followed by pigmented BCC (22.2%).<sup>13</sup> Pain over the lesion was the chief complaint in five patients and it was asymptomatic in seven patients. Some of the patients had history of bleeding from the lesion. None of them had any other systemic or cutaneous malignancies. There was no significant family history.

### **Nodular / nodulo-ulcerative BCC**

Patients with nodular type of BCC, presented with cutaneous features of skin coloured or hyperpigmented papules, nodules and plaques on head and neck area most commonly on forehead and cheek. Some patients with nodulo-ulcerative lesions shows surface changes like ulceration and crusting.

### **Rare presentations**

One 60 year old male patient presented with large noduloulcerative growth (12×8 cms) on the forehead of 10 months duration and later it was histopathologically diagnosed as basosquamous carcinoma. (Figure 5) Another 62 year old male patient presented patient presented with large noduloulcerative growth (8×6 cms) on the forehead since 3 year duration and later it was histopathologically diagnosed as basosquamous

carcinoma. CECT of head and neck showed that the lesion extended posteriorly and eroded the inner and outer cortex of frontal bone on right side, medially into the frontal sinus, laterally the lesion eroded the right zygomatic process of frontal bone, inferiorly the lesion eroded the roof of right orbit with infiltration into extraconal and intraconal fat of right orbit.

### ***Pigmented BCC***

Patients with pigmented BCC presented with nodular lesions and hyperpigmented plaques with grey-black pigmentation. In our study, 4 patients appeared clinically pigmented.

### ***Superficial spreading BCC***

Superficial BCC usually appear as erythematous, scaly patches that slowly increase in size by peripheral extension with fine thread like border. The patches usually shows superficial ulceration, crusting and sometimes with central atrophic scarring. Superficial BCC usually occurs on the trunk. But in our study one cases of superficial spreading BCC was reported with a crusty hyperpigmented plaque over the left cheek since 3 years (Figure 9).

### ***Histopathological variants of BCC***

The most common histopathological variant in my study is nodular type (33.3%). These findings closely resemble study conducted by Malhotra et al where nodular type (64.7%) was the most common histopathological variant. Metastasis was reported in one case of basosquamous carcinoma which is aggressive and locally invasive.<sup>12</sup>

**Nodular BCC:** It was the most common histological subtype observed in our study. H and E stained smears showed nodules of basaloid cells with peripheral palisade arrangement (Figure 2).

**Pigmented BCC:** It was the second most common histological subtype in our study in 25% of patients. Histological features showed nodular of basaloid cells, in addition there is presence of melanin within tumor cells and macrophages were noted in pigmented variant (Figure 3).

**Superficial BCC:** One cases with histological findings of superficial BCC were reported with typical features of buds and irregular proliferation of tumour tissue attached to the under surface of the epidermis (Figure 10).

**Basosquamous BCC:** In our study we observed two cases with histological findings suggestive of basosquamous carcinoma which clinically appeared as nodulo-ulcerative form of BCC (Figure 6).

Histological features of Basosquamous carcinoma showed tumor cells arranged in lobules and nests. The

nests showed focal keratinization consisting of pearls and an outer row of basaloid cells.

**Morpheaform BCC:** One case of morpheaform BCC was reported (Figure 8).

**Infundibulocystic BCC:** One case with histopathological diagnosis of infundibulocystic type of BCC was reported.

### ***Limitations***

Data on the duration, severity and prognosis of the disease was limited to the time the patients were observed and no follow up of the patients were done.

### **CONCLUSION**

This study highlights the paradoxically increasing trend of BCC with female predilection. Early detection and treatment of lesions are crucial to decrease functional and cosmetic morbidity and costs, this study highlights the importance of improving awareness among general practitioners, public health workers and general population. The clinical and epidemiological data collected in this study may serves as a reference for future research.

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