

Case Report

Basal Cell Carcinoma on Forehead: A Case Report with Clinicopathological Review

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Abstract: Background: Basal Cell Carcinoma (BCC) is locally destructive and rarely metastasizing skin tumor occurring on face in fair skinned people. Chronic exposure to sunlight is the most common precipitating factor for its development. The commonest region for occurrence is on the face and forehead region above an imaginary line joining the angle of mouth to tragus of external ear. **Case Report:** We present a case of BCC in a 57 years old male over left side of forehead region who was managed surgically by wide local excision and rotational flap. The final histopathology report was nodular variant of BCC with clear margins. **Conclusion:** Surgical excision of superficial, low-risk nodular BCC is the most common modality of treatment. Although topical agents like 5% fluorouracil or localized laser ablation or cryotherapy are good alternatives for low -risk superficial BCC, modalities like immunotherapy and radiotherapy should be offered to patients with locally advanced, recurrent or metastatic BCC.

Keywords: Non-melanotic skin tumors; Nodular; Basal cell carcinoma.

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INTRODUCTION

Cancers of the skin are relatively uncommon, but the incidence is progressively increasing in last few decades [1]. Non-melanotic skin cancer (NMSC) comprises of Squamous Cell Carcinoma (SCC) and Basal Cell Carcinoma (BCC). Although BCC is the most common non-melanotic skin cancer worldwide, the incidence of SCC is more common in India [2]. Caucasian and other light-skinned races have a strong predilection towards the development of NMSCs. The usual sites of occurrence of BCC are sun-exposed areas like face, neck, back and trunk. On the face, the commonest site is above an imaginary line joining the angle of mouth to tragus of external ear. Grossly, the lesion of BCC may present as an asymptomatic papule or nodule that can either be pigmented or non-pigmented with pearly rolled borders. Histopathologically, nodular variant is the most common (50%–80%), followed by superficial type (15%). These tumors rarely metastasize (0.5%), but are known to cause local tissue destruction [3]. The diagnosis can be confirmed by imprint cytology, Fine Needle Aspiration Cytology (FNAC) or edge biopsy.

Wide local excision for superficial tumors is the treatment of choice and as the tumor is known for recurrence, regular follow up is necessary for these patients.

CASE REPORT

A 57 years old male patient with type-II Diabetes Mellitus and ischemic heart disease on oral hypoglycemic agents and antiplatelet drugs presented with a lesion on left side of forehead for 10 years. The lesion was slow-growing and there was no history of bleeding or pain associated with the lesion. On examination, the lesion was nodular, pigmented of size 5x5 cms, mobile, non-tender, non-fragile, does not bleeds on touch and was located over left side of forehead 2 cms above and lateral to the lateral end of supra-orbital ridge (Figure-1). There was no cervical lymphadenopathy. FNAC was suggestive of basal cell carcinoma. Patient underwent wide local excision of the lesion (Figure-2) and the cutaneous defect was closed by rotational flap (Figure-3). The histopathology report was nodular variant of BCC with uninvolved margins and without features of perineural or lympho-vascular

invasion. The post-operative course was uneventful and sutures were removed on tenth post-operative day.



Fig-1: Lesion of BCC over left side of forehead



Fig-2: Wide-local excision of BCC taking a minimum 4 mm margin all along



Fig-3: Rotational flap with closure of defect

DISCUSSION

Incidence of skin cancer is relatively lower in India due to protective effect of melanin present in relatively wheatish and dusky colored skin amongst Indian population [4]. Ultraviolet B radiation derived from chronic sun exposure is a major contributing factor for induction of skin cancers. The other carcinogenic agents believed to be the causative agents for NMSC are arsenic (found in insecticides and pesticides), coal tar, radiation therapy and other hydrocarbons [1, 5]. According to Moore and Bennett, there is no gender predilection among Asian community and the malignancy tends to occur in elderly population [6]. Owing to the benign nature of the disease and being asymptomatic in initial stages, patient with BCC tends to present late & give a prolong history of persistence of lesion. Multiple BCCs may develop in the nevoid basal cell epithelioma in Gorlin's syndrome [7]. Various biopsy techniques that are recommended for diagnosis of BCC include imprint cytology, FNAC, punch biopsy, shave (tangential) biopsy and excision biopsy [8]. According to National Comprehensive Cancer Network (NCCN) guidelines [8], the stratification between low risk and high-risk BCC is as follows:

- A) **Low risk BCC:** Location of tumor in area L (Area L consists of trunk and extremities excluding hands, feet, nail units, pretibial and ankles) with size less than or equal to 2cms; location of tumor in area M (area M consists of cheeks, forehead, scalp, neck, and pretibial) with size less than or equal to 1cm; primary tumor with well defined border; with no comorbidities like previous history of irradiation or immunosuppression and final histopathology suggestive of nodular or superficial spreading variant with no perineural or lympho-vascular invasion.
- B) **High risk BCC:** Location of tumor in area L more than 2cms, location of tumor in area M more than 1 cms or location of tumor in area H (area H consists of central face, eyelids, eyebrows, periorbital skin, nose, lips, chin, mandible, preauricular and postauricular skin/sulci, temple, ear, genitalia, hands, and feet) irrespective of size; recurrent tumor or tumor with ill-defined borders; presence of comorbidities like previous history of irradiation or immunosuppression and final histopathology suggestive of aggressive nature of tumor with morpheaform, basosquamous (metatypical), sclerosing, mixed infiltrative, or micronodular features in any portion of the tumor along with perineural or lymph-vascular invasion.

Our patient was satisfying the criteria of low-risk BCC, except for the location of tumor in area M i.e. tumor was located on forehead, left side with size of the lesion 5 x 5 centimeters.

As there is a possibility of subclinical extension of tumor beyond the margins, a wide local excision with a 4-mm margin of uninvolved skin around the tumor along with a depth of the mid-subcutaneous adipose tissue is considered adequate for low risk BCC [8]. In case of a high-risk BCC, a primary closure or skin graft, rotational flap or healing by second intention is recommended. Mohs Micrographic Surgery (MMS) was first described by Dr. Fredric Mohs in 1940s [9]. This technique provides optimal cure rate with maximum tissue conservation resulting in smaller skin defects. MMS is reserved for high-risk, recurrent, poorly defined and sclerosing type of BCC [10].

Non-surgical therapies like cryotherapy, topical therapy using topical imiquimod five times a week for six weeks or topical 5-fluorouracil twice daily application for 6 to 8 weeks can be appropriate for small, low-risk BCC when surgery is impractical or declined by the patient. These topical agents may cause additional adverse effects like redness of skin, itching, crusts, vesicles or tingling sensations [11]. In BCC, radiotherapy is recommended in case of recurrent tumor, incomplete excision of tumor or primarily in cases where surgery is not feasible, contraindicated, or not preferred by the patient⁸. Different modalities of radiotherapy delivered in several to many fractions over few weeks, include superficial radiation therapy, interstitial brachytherapy or external beam radiotherapy. The adverse effects after radiotherapy include skin pigmentation, erythema, alopecia, cartilage necrosis or risk for development of secondary cutaneous malignancy. Avril MF *et al.*, [12], in a randomized controlled trial demonstrated that surgery is a better modality of treatment as compared to radiotherapy for low-risk BCC over face.

In patients with locally advanced or metastatic BCC, smoothened (SMO) inhibitors targeted at the hedgehog pathway like vismodegib, sonidegib or a platinum based chemotherapeutic agents can be used.

A regular and long-term follow-up is needed after completion of treatment owing to the slow-growing nature of BCC and chances of recurrence. The patients should be explained about the benefits of self-screening and they should be made aware of development of new such lesions on other parts of body. Appropriate application of sun-screens and avoidance of sunlight, tanning, sunbath is helpful in prevention of recurrence or development of new lesions.

CONCLUSION

Surgical excision of superficial, low-risk nodular BCC is the most common modality of treatment. Although topical agents like 5% fluorouracil or localized laser ablation or cryotherapy are good

alternatives for low -risk superficial BCC, modalities like Immunotherapy and radiotherapy should be offered to patients with locally advanced, recurrent or metastatic BCC.

Conflict of Interest: None

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