

Basal Cell Carcinoma Of Eyelid: A Surgical Challenge Solved

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ABSTRACT

Basal cell carcinoma is the most common skin malignancy constituting 90% of eyelid tumors. Although it rarely metastasizes, it needs to be addressed with timely diagnosis and prompt treatment to avoid disfigurement of the tissues it invades. We report a case of 72 years old male with basal cell carcinoma of the lateral canthus. The patient was planned for an excision biopsy of the lesion. Despite the excision of a large tumor involving the lateral canthus of the left eye (3*3 cm) and a large portion adjoining the upper and lower eyelids (1.5 cm approximately), we were able to restore the eyelid contour at the lateral canthus. There have been many proposed treatment modalities for basal cell carcinoma; however, excision biopsy remains the gold standard. This article outlines the etio-pathogenesis, clinical features, and various treatment modalities in the management of basal cell carcinoma.

KEYWORDS: Basal Cell Carcinoma, Lateral Canthus, Excision Biopsy.

1. INTRODUCTION

Basal cell carcinoma is the most common periocular malignancy accounting for approximately 90% of malignant eyelid tumors. With slight male preponderance, it affects the age group of 60-80 years. The treatment options consist of full-thickness surgical excision with tumor-free margins, curettage, electrodesiccation and cautery, cryotherapy, topical or intralesional application of 5-fluorouracil, photodynamic therapy (PDT), laser therapy, radiotherapy, and more recently imiquimod. It is a slow-growing tumor with rare metastasis; however, early diagnosis and treatment are imperative to retain the function and aesthetics of eyelids.

We report a case of a 72-year-old male who presented to Eye OPD with chief complaints of mass on left lateral canthus extending both in upper and lower eyelids from past 6-7 months, which was painful and slowly progressive. On ocular examination, the right had visual acuity of 6/6, and the anterior and posterior segments of the right eye were normal. The left eye showed a circular nodulo-ulcerative lesion of size 3*3 cm, involving lateral canthus and extending approximately 1.5 cm into the upper and lower eyelids (Figure 1). The surface of the lesion was rough, ulcerated, and fixed to underlying skin and tarsus. The abduction was restricted to the left eye. The visual acuity of the left eye was 6/9. The anterior and posterior segment of the left eye was normal. Blood investigations such as complete hemogram, liver, and renal function tests, serum electrolytes, platelet count, coagulogram, and electrocardiogram were all within normal limits. The systemic investigations of the CECT head and orbit showed heterogeneous enhancing growth left eyelid with ill-defined fat planes with the left lacrimal gland and enhancing heterogeneous growth of the left temporal region. USG Abdomen was within normal limits, and his X-ray chest showed tubular heart and Emphysematous chest changes consistent with COPD. The patient was planned for an excision biopsy of the lesion. The excision of the lesion with careful dissection by lateral canthotomy and separation from underlying periosteum of lateral orbital margin with 4 mm normal adjoining skin of upper and lower eyelids along with 4mm surrounding normal skin of temporal region was done (Figure 2), which was followed by lateral canthoplasty and reconstruction of the upper and lower eyelid (Figure 3). Post-operatively oral antibiotics, analgesics, topical antibiotic drops, and ointment for local application were given. On the first postoperative day, the eyelid movements were normal. Despite the excision of a large tumor involving the lateral canthus of the left eye and a large portion adjoining the upper and lower eyelids, we were able to restore the eyelid contour at the lateral canthus (Figure 4). The histopathological examination revealed basal cell carcinoma with tumor nest cells and peripheral palisading. Unfortunately, the patient was lost to follow-up.

2. DISCUSSION

Basal Cell Carcinoma (BCC) is the most common periocular malignancy (90%), followed by squamous cell carcinoma (<5%), sebaceous gland carcinoma (1-3%), malignant melanoma (1%), and miscellaneous tumors (<1%) [1]. Basal cell carcinoma is a slow-growing, rarely metastasizing tumor commonly found on the lower eyelids (50%), followed by medial canthus (25%), upper lid (10-15%), and outer canthus (5-10%) [2]. It has a slight male preponderance affecting the age group 60-80

years [3]. Approximately 95% of BCC occurs between 40 and 79 years of age. The present case is a 72-year-old male patient involving the lateral canthus.

The shorter UVB wavelengths (290 to 320 nm) than the longer wavelengths of UVA (320 to 400 nm) have been implicated in its etiology. These UVB radiations lead to mutation in tumor suppressor gene TP53 activating hedgehog intercellular signaling pathway genes (Ptch-1), promoting the development of eyelid BCC. UVB radiations after being absorbed by DNA lead to the formation of photoproducts cyclobutane pyrimidine dimers (CPDs) and 6-pyrimidine 4-pyrimidone dimers (6-4 PPs), which further block polymerases. This UV induces the accumulation of DNA mutations resulting in skin tumors. The other risk factors include skin tumor history in the family, immunosuppression, radiotherapy, and chronic toxic substance exposure [4]. The present case is a resident of hilly terrains and farmer by occupation, so environmental radiation exposure is instrumental in the development of BCC in this patient.

On a clinical basis, it is of three types: nodular (most common), nodulo-ulcerative which is also known as rodent ulcer), superficial, and morphea form (sclerosing type). The nodular and superficial types of BCC are the most common and less aggressive. In contrast, the morphea form is more aggressive, although rare (4-7%). It has a higher rate of positive residual margins after excision and a larger risk of recurrence and metastasis. Long-standing tumors, tumors with recurrence, and incompletely excised tumors lead to more aggressive histological patterns of BCC. The histopathological examination is the gold standard for the diagnosis, but computer tomography and magnetic resonance imaging helps in determining the extension of lesion, soft tissue invasion, and perineural invasion.

The treatment depends upon tumor characteristics and histological invasion types. The surgical excision of the tumor with the excision of wide safe tumor-free margins varying from 2 to 5.5 mm is the gold standard [5,6]. The Mohs micrographic surgery provides the lowest rate of recurrence, but it is costly, consumes time, and is not available at all centers.

The reconstructive procedures depend upon the size and position of the defect. These can be direct closures if the defect is $\leq 25\%$ of the width of the eyelid. If defects are 25–50% of the width of the eyelid, then lateral canthotomy and cantholysis are performed along with direct closure. Tenzel semicircular myocutaneous rotation flap is performed in patients with defects $< 75\%$ of eyelid width. Cutler-Beard bridge flap technique is performed for defects $> 75\%$ of eyelid width. The Hughes procedure is performed in up to 100% of the horizontal eyelid length. The other treatment options for small BCC less than 2 mm include toll-like receptor 7 agonists such as imiquimod therapy, mitosis inhibitor 5-fluorouracil, photodynamic therapy involves 5-aminolevulinic acid or methyl aminolevulinate, a hedgehog pathway inhibitor - Vismodegib, cryotherapy, and laser therapy. The present case was treated with excision of the tumor with 4 mm of tumor-free margins and lateral cantholysis. Direct closure and lateral canthoplasty were performed to reconstruct the upper and lower eyelids.

3. CONCLUSION

Basal cell carcinoma is a slow-growing tumor with rare metastasis; however, early diagnosis and treatment are imperative to retain the function and aesthetics of eyelids.

CONFLICT OF INTEREST

None.

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Figures follow...



Figure 1: Basal cell carcinoma (nodulo-ulcerative) involving lateral canthus and adjoining upper and lower eyelids of left eye.

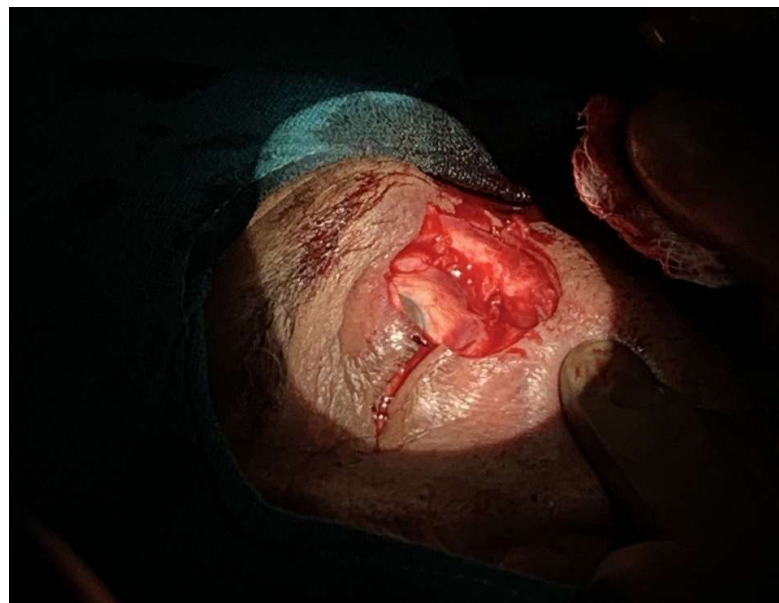


Figure 2: Intraoperative residual defect is seen after excising the tumor.



Figure 3: Intraoperative direct primary closure of the defect.



Figure 4: 1st postoperative day-restoration of eyelid contour at the lateral canthus.