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Case Report

Mustardé Flap Reconstruction after Basal Cell Carcinoma Excision: A Case Report and Literature Review

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Abstract: One of the most challenging tasks to accomplish in reconstructive plastic surgery is reconstructing the eyelids. Following eyelid surgery, function and appeal must be restored. The surgical reconstructive plan depends on the severity of the defect is and the degree to which there is tissue around the eye. Eyesight and quality of life may be considerably compromised by periocular cancers. The lower lid (48%) and the medial canthus (27%) exhibit more periocular malignancies than the upper lid (25%), which is protected from UV rays by the eyebrow. Basal cell carcinoma (BCC) is responsible for 80–92.2% of periorbital cancers. Surgery is suggested for periocular, periorbital, and eyelid BCC. There are several different types of surgery that may be used to fix eyelids. Mustard cheek flaps are a great way to fix problems with the lower and outer eyelids.

Keywords: Lower Eyelid Tumor, Basal Cell Carcinoma Nonmelanotic Skin Cancer, Tumor Excision, Eyelid Reconstruction, Mustarde Flap, Periorbital Defects, Surgical Techniques.

INTRODUCTION

When it comes to reconstructive plastic surgery, one of the hardest parts remains reconstructing the eyelids. There may not be any part of the body where the interplay among anatomy, aesthetics, and function is so complex. The eyelids must be restored to normal function and appearance after eyelid surgery in order to protect the underlying retina and the ability to see, the size and location of the defect and the overall condition of the periorbital tissue will largely determine the reconstruction strategy. It is important to strive for a single-stage reconstruction that preserves both the aesthetic and functional outcomes. Basal Cell Carcinoma (BCC) is the most common periocular malignancy; increased exposure to ultraviolet (UV) radiation causes 80–92.2% of malignant neoplasms in the zone.

CASE REPORT

A 53-year-old female patient presents with an unremarkable medical history. Referred from Ophthalmology department due to suspicions of Basal cell carcinoma to our Reconstructive Surgery Unit. The medical condition developed six years ago as an abnormal growth on the left inferior eyelid. Over the past four years, she has undergone progressive growth accompanied by itching, pain, and ulceration. A clinical examination confirmed the of a 3.5 cm tumoral lesion on the outer surface of the left lower eyelid, characterized by exophytic margins and ulceration.

EYELID BASAL CELL CARCINOMA (BCC)

Basal cell carcinoma (BCC) contributes to 80–92.2% of periorbital cancers, despite low mortality, BCC has high morbidity. The annual incidence of BCC is 14.35 per 100,000. Genetics, gender, and latitude impact lifetime BCC risk, but is most frequent in the elderly,

especially those in their sixth to eighth decade, although up to 15% can develop in children or young people. Fair-skinned persons with sun exposure develop it primarily on the lower eyelid (44%), and medial canthus (37%), then the upper (9%), and lateral canthuses (6%). Celtic, Gaelic (English, Irish, or Scottish), and Scandinavian are most vulnerable. UV light, immunocompromise, thermal injury scars, ionizing radiation, chemicals such a (arsenic, polycyclic hydrocarbons), and smoking are well known risks. Multiple genetic diseases are linked to BCC. Nevus syndrome, also known as Gorlin syndrome, is an autosomal dominant xerosderma pigmentosum condition that is more likely to cause skin cancer because of exposure to sunlight and sulfur early periorbital skin cancer detection is essential. Early signs of malignancy include wrinkle loss, fine scars, skin contracture, fibroids, telangiectasias, blepharitis, conjunctivitis, ocular discharge, sensory abnormalities, and small eye structural alterations. Raised or curled margins, pearly borders, ulceration, vasculature, and gross tissue disintegration are late cancer signs. 10%–40% of diffuse BCC are sclerosing, infiltrative, and micronodular. Perineural subtypes are more common, and microscopical extension can exceed clinical symptoms.

It is suggested that any lesion be biopsied, it is preferred to biopsy a benign lesion than ignore or delay the diagnosis of a malignant lesion. An excisional biopsy is appropriate when a lesion is most probably benign, easy to remove on small lesions, and does not involve the eyelid margin, the canthi, or the lacrimal system. Incisional biopsy is beneficial in the event of a suspected malignancy lesion and for masses on the eyelid margin, the canthi, or the lacrimal system. BCC are normally slow growing and have excellent prognosis. They have high cure rates (95% to 99%) and an extremely rare mortality (<1%). The frequency of BCCS may be prevented or reduced by certain measures, including the appropriate application of UVA and UVB sunscreens, the wearing of wide-brimmed hats and sunshades, and the protection from sun exposure.

EYELID RECONSTRUCTION

For eyelid, periocular, and periorbital skin BCC, surgery is recommended. Excision with complete margin control and MOHS excision are the most effective surgical therapies. The surgeon can reconstruct when all histological margins are tumor-free. BCC cure rates vary from 95% to 99% depending on clinical and histologic features. Compared to older techniques, MOHS excision minimizes healthy tissue removal and maximizes histological clarity. MOHS allows for the evaluation of the tumor's entire 360-degree borders in three dimensions, and is useful for current, large, medial canthus, and lacrimal system lesions.

Many surgical options exist for eyelid reconstruction. The type of repair depends on the size and location of the defect, but other factors like skin color and texture, surrounding tissue mobility, vasculature compromise, and lamella amount must also be considered. The main goals of lower eyelid reconstruction are to protect and maintain the eye and orbital neurovascular system. An eyelid defect of 25% or less may be closed directly, but some authors have reported good results for defects much larger with considerable tension. When combined with cantholysis, a defect occupying 50% or more of the eyelid can be closed directly. In plastic surgery, grafts should be used when there is a suitable vasculature to improve survival. Excess upper and lower eyelid skin and posterior auricular, preoral, and supraclavicular skin are ideal donor sites for anterior lamellar defects. Avoid split-thickness skin grains.

The Mustarde cheek rotation flap is a viable option for substantial lower eyelid defects that also encompass the cheek, involving lateral cheek and zygomatic skin for coverage. Due to the importance of excising a substantial quantity of normal tissue in the cheek region to prevent a dog ear deformity, this flap is optimally utilized for extensive lower eyelid defects that extend into the cheek, rather than for isolated lower eyelid defects. The flap dimensions must be three to four times the area of the primary defect. The first incision must be oriented in an upward and backward curved line over the lateral canthus. Due to the proximity of the facial nerve to the zygomatic bone, dissection must be subcutaneous and superficial over the zygoma to prevent trauma to the facial nerve; another potential site for facial nerve injury is anterior to the ear. An excessively superficial dissection may lead to flap necrosis, whereas an overly deep dissection may unnecessarily traumatize the underlying tissue and inhibit the vascularization of subdermal vessels. It is crucial to recognize that this is a rotation flap rather than a mere advancement, necessitating a substantial degree of undermining.

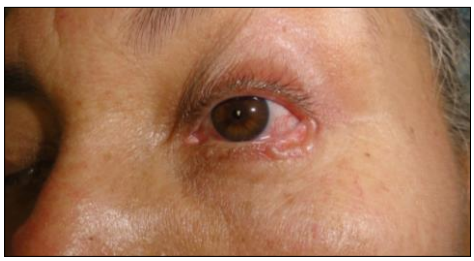

Figure 1: Left inferior eyelid basal cell carcinoma

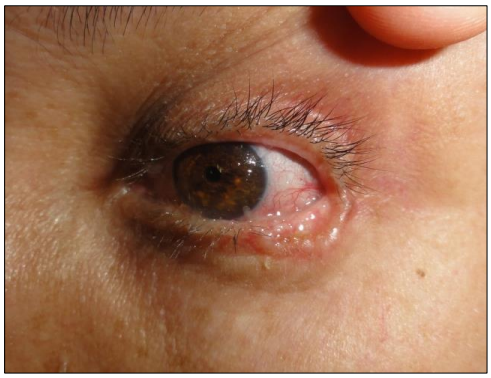

Figure 2: Ulcerative lesion about 3.5 cm on the outside margin of the left lower eyelid

Figure 3: Preoperative Surgical marking

Figure 4: Surgical defect, after excision

Figure 5: Mustarde Flap

Figure 6: 7 days post-eyelid reconstruction using a Mustarde flap

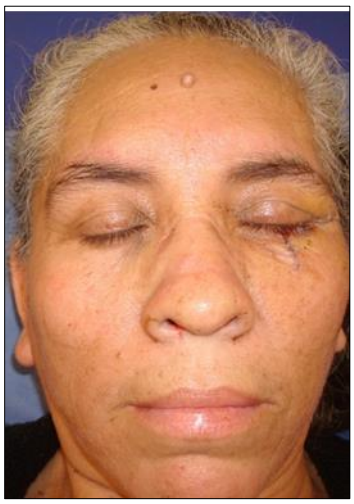

Figure 6: 4 Weeks after Eyelid reconstruction

DISCUSSION

Given its potential for ugly characteristics, seriousness, and rising prevalence on the face, basal cell carcinoma diagnosis and therapy worry the global scientific community. Basal cell carcinoma, the most frequent malignancy, is linked to immunosuppression, sun exposure, and Caucasian race in diverse places. The tumor must be entirely removed for long-term success. Surgical surgery for basal cell carcinoma may cause problems and increase the risk of recurrence. Experts found a link between excision and facial basal cell carcinoma recurrence. Incomplete excision, infiltrative variants, and micronodular variations affect this connection. To avoid keratitis and corneal erosion during orbital-palpebral surgery, disinfectant must be kept away from the eye. Prevent corneal pressure using methylcellulose, saline serum, or artificial tears. Palpebral restoration requires a comprehensive pupil inspection, saline-soaked bandages, hemostasis, and recognition that irregular mydriasis may indicate intra-orbital vasoconstriction. Following surgery, the cornea should be cleaned with saline and inspected for clarity and wateriness. Eyelid surgery requires tremendous caution even for the most expert doctors. Restoration after long neglect frequently requires complex procedures. Ophthalmologists must be included in this reconstructive process to promote professional teamwork and solve difficult problems. This is because the approaches are more compatible. Basal cell carcinoma can cause substantial deformity, high mortality, and rising prevalence in face areas; thus, researchers worldwide are concerned about its detection and treatment.

Basal cell carcinoma, the most common malignancy, is linked to immunosuppression, sun exposure, and Caucasian race in diverse places. Complete tumor removal is essential for long-term success. Surgical intervention for basal cell carcinoma may cause problems and increase its risk of recurrence. Experts found a link between excision and facial basal cell carcinoma recurrence. This includes partial excision, infiltrative variants, and micronodular variations. To avoid keratitis and corneal erosion during orbital-palpebral surgery, disinfectant must be kept away from the eye. Prevent corneal pressure using methylcellulose, saline serum, or artificial tears. Palpebral restoration requires a comprehensive pupil inspection, saline-soaked bandages, hemostasis, and recognition that irregular mydriasis may indicate intra-orbital vasoconstriction. Avoid delivering vasoconstrictor drugs behind the septum to avoid vascular problems. Due to mechanical laceration, the surgical node should be placed carefully to avoid corneal contact. Topical antibiotics in the lower conjunctival sac may relieve ocular dryness. The cornea should be clear and watery after applying saline solution and being examined post-surgery. Eyelid surgeries need

extraordinary caution from even the most qualified practitioners. When concerns are ignored, complex fixes are needed. The ophthalmologist must be included in this reconstruction process to handle difficult cases and promote healthcare professional teamwork. This is because the approaches are more compatible.

CONCLUSION

There are numerous types of lower eyelid defects that necessitate and implement an appropriate reconstruction, which may involve a combination of multiple techniques. The plastic surgeon's pleasant challenge is to select the appropriate flaps from the palette of alternatives and to apply them to the unique and individual needs of the patient positioned on the operating table.

Conflicts of Interests

The authors declare no conflicts of interest. The patient has signed the informed consent form and consented to the use and publication of confidential information and images for scientific and non-profit purposes. The submitted paper has been read and endorsed by all authors.

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