

Block Resection of Secondary Basal Cell Carcinoma on the Eyelid: A Case Report

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ABSTRACT

Basal cell carcinoma (BCC) is the most common malignant skin tumor, particularly in the periocular region, where its locally invasive growth can compromise important structures. In advanced cases requiring block resection and enucleation, careful reconstruction is crucial to restore both function and aesthetics. The temporalis flap, with its excellent vascularization and volume-enhancing properties, has become an effective reconstructive option for covering extensive orbital defects. This flap, harvested from the temporalis muscle, is dissected and rotated into the orbital cavity, providing a secure and stable coverage. Despite potential complications such as progressive atrophy or flap retraction, outcomes are generally satisfactory. In the case presented, the patient experienced excellent postoperative progress, with proper flap integration and no major complications. This case emphasizes the significance of surgical reconstruction using the temporalis flap for orbital defect rehabilitation following malignant tumor resections like basal cell carcinoma, demonstrating its effectiveness in both functional and aesthetic terms.

KEYWORDS: Basal cell carcinoma, block resection, enucleation, orbital reconstruction, temporalis flap, temporalis muscle, orbital defects, reconstructive surgery, periocular tumor, facial reconstruction.

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INTRODUCTION

Basal cell carcinoma (BCC) is the most common skin cancer, accounting for approximately 75-80% of malignant cutaneous tumors. It originates from the basal cells of the epidermis and is characterized by slow growth and low metastatic potential. Despite its low mortality rate, BCC can be highly locally invasive, causing significant tissue destruction if not treated properly.

BCC is the most prevalent cancer globally, with its incidence rising in recent decades due to increased ultraviolet (UV) radiation exposure, aging populations, and improved early detection. It is most commonly observed in individuals over 50 years of age, although its incidence in younger people has been increasing. It is more common in fair-skinned individuals, particularly those with Fitzpatrick skin types I and II.

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Chronic, cumulative sun exposure, especially in areas like the face, neck, and back of the hands, is the primary risk factor for BCC. Other contributing factors include fair skin, personal or family history of skin cancer, exposure to ionizing radiation, immunosuppression, occupational arsenic exposure, and advanced age.

BCC diagnosis is primarily clinical, confirmed by histopathological studies. Clinically, it presents as a pearly skin lesion with superficial telangiectasias, which may exhibit central ulceration in more aggressive forms. Variants include nodular, superficial, morpheaform, and pigmented. Dermoscopy reveals characteristic patterns like arborizing vessels and “wheel-and-spoke” structures. A skin biopsy confirms the diagnosis by identifying basaloid cells arranged in a palisade pattern with a fibromyxoid stroma. Advanced cases may require imaging techniques such as CT scans or MRIs.

Treatment of BCC depends on the size, location, histological subtype, and presence of high-risk features. Medical options include topical therapies like imiquimod or 5-fluorouracil for superficial lesions, photodynamic therapy with aminolevulinic acid, and Hedgehog pathway inhibitors like vismodegib and sonidegib for locally advanced or metastatic cases not suitable for surgery.

Surgical treatment is the first-line approach for most cases. Conventional excision requires safety margins of 3-5 mm for low-risk lesions and up to 10 mm for more aggressive tumors. Mohs surgery is the technique of choice for high-risk, recurrent lesions, or those located in areas of high functional and aesthetic value, as it allows for intraoperative evaluation of surgical margins. Other procedures include electrosurgery and curettage for small tumors, cryotherapy with liquid nitrogen, and radiotherapy for patients unfit for surgery or with unresectable tumors.

CASE PRESENTATION

The patient is a 40-year-old male who presented approximately five years ago with a “spot on the right lower eyelid,” which progressively increased in size. He sought medical attention and was referred to the surgical oncology department (Figure 1). A protocol for block resection was initiated, including enucleation of the right eye and block resection. The temporalis fascia was released, and the flap was rotated while preserving its pedicle (Figure 2). A full-thickness inguinal graft was performed (Figure 3). Surgical findings confirmed basal cell carcinoma (Figure 4).



Figure 1. Right eyelid tumor.



Figure 2. Tumor resection.

DISCUSSION

The temporalis flap is a widely used reconstructive option for covering extensive orbital defects secondary to block resection of malignant lesions, particularly basal cell carcinoma, which is the most common skin tumor in the periocular region. In cases where tumor invasion compromises deep structures such as the eyelids, conjunctiva, orbital muscles, or even the periosteum and bone, enucleation

and block resection are necessary to ensure adequate oncological margins. However, these procedures create significant defects that require planned reconstruction to restore both functionality and aesthetics.

The temporalis muscle is an ideal candidate for such reconstruction due to its anatomical proximity, excellent vascular supply, and ability to provide volume and coverage to the exposed orbital cavity. This muscle is primarily

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supplied by the anterior and posterior deep temporal arteries, branches of the maxillary artery, ensuring reliable vascularization during transfer. Additionally, its innervation from the mandibular nerve through the deep temporal nerve can preserve residual functionality if handled appropriately. The surgical technique begins with a coronal or preauricular incision, depending on the required access. The temporalis fascia is identified, and the muscle is carefully dissected while preserving its vascular pedicle. Once freed, the flap is rotated into the orbital cavity, ensuring minimal tension to avoid perfusion disturbances. In some cases, partial resection of the zygomatic arch may be required to allow greater mobility without compromising the flap's vascularity. Once in place, the flap is fixed with sutures to the bone and surrounding tissues to ensure stability and proper integration. If extensive periocular skin has been resected, partial skin grafts or local flaps can be used to provide adequate skin coverage.

Advantages of the temporalis flap for orbital reconstruction include its excellent vascularization, which reduces the risk of necrosis, its ability to provide volume, and its relative ease

of harvest. However, it also has some drawbacks, such as the potential for progressive muscle atrophy over time, leading to volume loss in the orbital cavity, and flap retraction, which in some cases may cause functional or aesthetic limitations requiring secondary procedures. Additionally, some patients may experience temporary restriction in mouth opening due to manipulation of the temporalis muscle, though this typically resolves over time.

Postoperative care requires close monitoring for complications such as infection, hematoma, flap retraction, or exposure of prosthetic material if an orbital implant is placed. Early rehabilitation with movement therapy is recommended to prevent contractures and enhance flap adaptation to the orbital cavity. In some cases, secondary surgical touch-ups may be needed to improve orbital contour or facial symmetry. Overall, the temporalis flap has proven to be an effective and versatile reconstructive option for orbital rehabilitation following extensive resections of aggressive tumors such as basal cell carcinoma, providing stable coverage and minimizing long-term complications.



Figure 3. Inguinal full thickness graft.

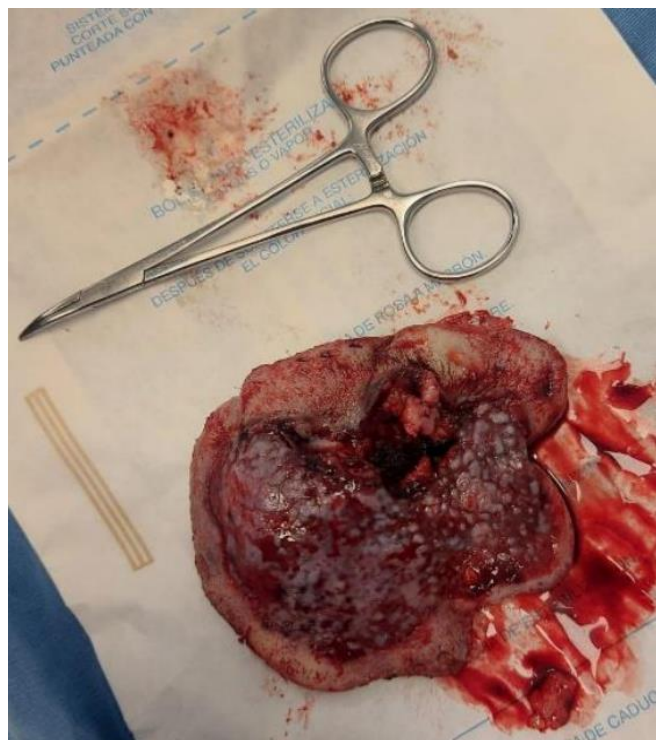


Figure 4. Product of tumor resection right eyelid.

CONCLUSION

Basal cell carcinoma is the most common malignant skin tumor, and its location in the periocular region poses challenges in both oncological treatment and aesthetic-functional reconstruction. Its slow yet locally invasive growth can compromise important periocular structures, requiring extensive resections, including enucleation and block resection, to ensure disease-free margins. In such cases, careful reconstruction is needed to protect underlying structures, restore orbital volume, and improve the patient's

aesthetic appearance. The temporalis flap has proven to be an effective option for reconstructing extensive orbital defects due to its excellent vascularization, ease of mobilization, and ability to provide volume. The technique involves careful dissection of the temporalis muscle while preserving its vascular pedicle, rotating it into the orbital cavity, and securing it with sutures to surrounding tissues. Despite potential drawbacks, such as progressive atrophy and retraction over time, the flap generally provides satisfactory outcomes with minimal complications. In the case presented,

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the patient had an excellent postoperative recovery, with proper integration of the temporalis flap and no signs of necrosis or exposure of underlying structures, achieving stable and aesthetically acceptable coverage. Postoperative follow-up showed good flap adaptation with minimal retraction, leading to favorable functional and aesthetic outcomes, illustrating that the temporalis flap remains a valuable reconstructive strategy in the rehabilitation of orbital cavities following extensive resections due to basal cell carcinoma.

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