

Resection of basal cell carcinoma of the right malar region using the Limberg Flap technique.

A case report

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Case Report

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Background: Objective: To describe the surgical management of a basal cell carcinoma located in the right malar region, treated with wide local excision and reconstruction using a Limberg flap.

Introduction: Basal cell carcinoma (BCC) is the most common cutaneous malignancy worldwide. Lesions located in the malar and periorbital regions represent a reconstructive challenge due to aesthetic subunit considerations and proximity to critical structures. Local flaps, such as the Limberg flap, provide reliable vascularity and favorable cosmetic outcomes in medium-sized facial defects.

Case report: A 78-year-old male presented with a two-year history of a necrotic macular lesion on the right cheek that progressively enlarged, ulcerated, and bled. Biopsy confirmed basal cell carcinoma. Wide local excision with oncologic margins was performed, followed by reconstruction using a Limberg flap at the right palpebral-malar junction. The flap was secured with Nylon 4-0 sutures. The patient demonstrated adequate postoperative healing and satisfactory aesthetic outcome during follow-up.

Conclusion: Wide excision followed by Limberg flap reconstruction represents a safe and effective option for managing basal cell carcinoma in the malar region, providing both oncologic control and optimal aesthetic results.

Keywords: Basal cell carcinoma, Limberg flap, facial reconstruction, malar region, oncoplastic surgery.

Basal cell carcinoma (BCC) accounts for the majority of non-melanoma skin cancers and primarily affects elderly patients with chronic sun exposure. The head and neck region is the most frequently involved anatomical area. Lesions located in the malar and infraorbital regions require meticulous surgical planning to preserve both function and aesthetic harmony.

Current literature emphasizes complete surgical excision with histologically negative margins as the gold standard treatment for BCC. Reconstruction of facial defects must consider relaxed skin tension lines, aesthetic subunits, and vascular supply. Rhomboid (Limberg) flaps have demonstrated versatility and reliability in reconstructing moderate-sized facial defects.

We present the case of an elderly male patient with basal cell carcinoma of the right malar region managed with wide local excision and reconstruction using a Limberg flap

Case report

A 78-year-old male presented with a two-year history of a necrotic macule located on the right malar

region. The lesion progressively increased in size and was associated with ulceration and intermittent bleeding. He was referred to the surgical oncology service for evaluation.

Physical examination revealed an ulcerated lesion with irregular borders at the right cheek, involving the palpebral-malar junction. Incisional biopsy confirmed the diagnosis of basal cell carcinoma. (Figure 1)

The patient was scheduled for elective surgical management. Wide local excision was performed with appropriate oncologic margins. After confirming complete resection, a rhomboid Limberg flap was designed adjacent to the defect, taking into consideration skin laxity and tension vectors. (Figure 2)

The flap was elevated in the subcutaneous plane, rotated into the primary defect, and secured using Nylon 4-0 sutures. Adequate hemostasis was achieved, and wound closure was performed without tension. (Figure 3)

Postoperative care included local wound management and outpatient follow-up. The patient demonstrated satisfactory healing, preservation of eyelid function, and acceptable cosmetic outcome. He



Figure 1. Lateral view of the right malar affected area



Figure 2. View of the basal cell carcinoma marked with Limberg technique.

was subsequently discharged and continues periodic surveillance in outpatient consultation.

Discussion

Basal cell carcinoma (BCC) is the most common form of skin cancer. In the advanced stage, BCC exhibits aggressive behavior, leading to local tissue destruction. Thus, a multidisciplinary approach and specialized treatment strategies are required for effective disease management and improvement of the patient quality of life. (1)

Nearly a century ago, a new surgical approach was introduced for reconstructing rhombus-shaped defects by designing a highly versatile, geometrical, transpositional local flap, combining rotation and lateral shift. Known as the Limberg flap, this unique design is also known as the rhombic flap or, less



Figure 3. Surgical wound of flap with Limberg technique.

precisely, the rhomboid flap. The rhombic flap is a full-thickness flap with a random pattern of blood supply, relying on vascularization from the dermal-subdermal plexus. It offers minimal donor site morbidity, reliable neurovascular supply, and a favorable aesthetic outcome. Over time, rhombic flaps have been widely adopted for the closure of small to medium-sized defects resulting from various clinical conditions across different anatomical regions. (2)

Rhomboid flap is quickly and easily designed, does not require any special instruments, and provides excellent contour, texture, thickness, color match, long-term good cosmesis and high patient satisfaction. (3)

The Limberg flap is one of the most versatile local flaps that can be used for reconstruction of a wide range of skin defects in different parts of the body. the Limberg flap turns out to be a rapid and reliable option that could be easily applied for small (size around 1-2 cm) and medium-sized (size around 2-4 cm) cutaneous defects of the face even for the oldest and/or emaciated patients. (4)

Conclusion

Wide local excision with histologically clear margins remains the cornerstone of basal cell carcinoma treatment. The Limberg flap represents a reliable reconstructive option for malar defects, offering excellent functional and cosmetic outcomes in elderly patients.

Conflicts of interests

The authors declare that there are no financial, personal, or institutional conflicts of interest that could have influenced the work reported in this manuscript.

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