

## Reconstrução de um Defeito Cirúrgico Complexo do Canto Interno

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**RESUMO** – O carcinoma basocelular é a neoplasia cutânea maligna mais frequente na região periorbitária. Os autores apresentam um caso de um carcinoma basocelular ocupando toda a região do canto interno, pálpebra inferior e vertente direita do nariz e cuja excisão cirúrgica originou um defeito complexo da região periorbitária. Os autores descrevem “passo a passo” a reconstrução cirúrgica deste defeito respeitando subunidades estéticas e utilizando uma combinação de retalhos clássicos com um excelente resultado funcional e estético.

**PALAVRAS-CHAVE** – Carcinoma Basocelular; Neoplasias da Pele; Neoplasias das Pálpebras; Procedimentos Cirúrgicos Reconstructivos; Retalhos Cirúrgicos.

## Reconstruction of a Complex Defect of the Medial Canthal Area

**ABSTRACT** – Basal cell carcinoma is the most common skin malignancy of the periorbital region. The authors present a clinical case of a large tumor of the medial canthus which excision results in an extensive periorbital defect. Herein, the authors report a “step-by-step” reconstruction by separated aesthetic units using a simple combination of standard flaps, achieving an excellent final result.

**KEYWORDS** – Carcinoma, Basal Cell; Eyelid Neoplasms; Reconstructive Surgical Procedures; Skin Neoplasms; Surgical Flaps.

### INTRODUCTION

Basal cell carcinoma is the most common skin malignancy of the periorbital region. Because it is a slow-growing tumor that rarely metastasizes is often undervalued. However, if inadequately treated, it can cause extensive local tissue destruction and morbidity. Over 70% occur on the lower eyelid followed, in order of frequency, by the medial canthus, upper eyelid and lateral canthus.<sup>1</sup> Surgical reconstruction of an area where different cosmetic units are involved constitutes a real challenge to dermatologic surgeons. In this specific anatomic area, tumors are often associated with incomplete excisions and high rates of recurrence, leading to more aggressive surgical sequelae. Moreover, from a surgical

point of view, the medial canthal region represents the most difficult periorbital zone to reconstruct.<sup>1,2</sup>

### CLINICAL CASE

An 84-year-old woman was referred for surgical treatment of a nodular basal cell carcinoma (BCC) located on the right medial canthal region (Fig.1A). After the complete removal of the tumor, the resulting surgical defect corresponded to an extensive periorbital defect involving the medial canthus along with 50% of the lower eyelid, infraorbital region, nasal root and virtually all of the right nasal sidewall subunit (Fig.1B).

How Do You Close This Surgical Defect?

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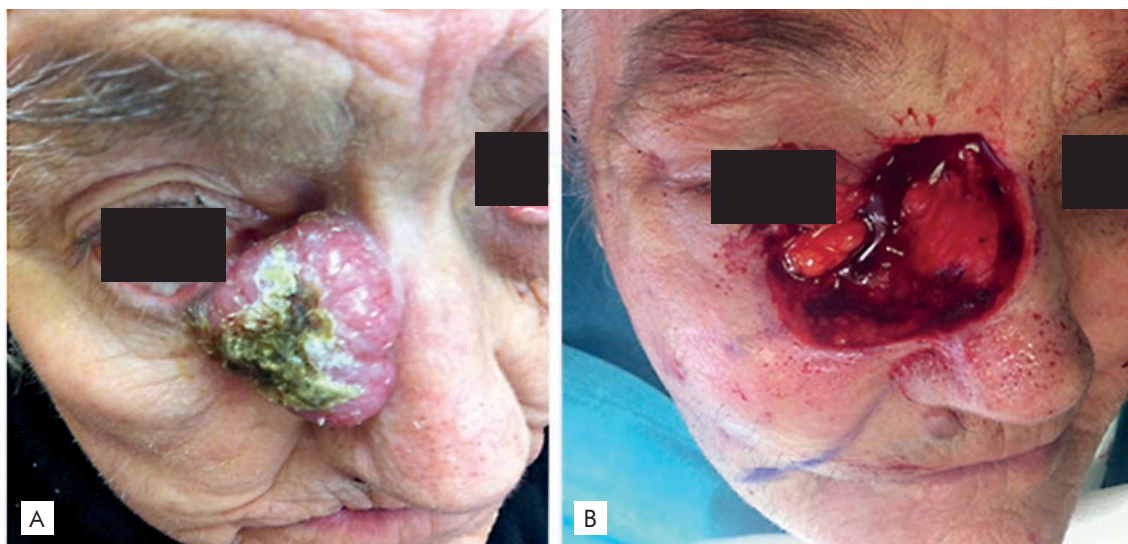
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**Figura 1** - (A) - Clinical image of the tumor before surgery. (B) - Resulting surgical defect after complete removal of the tumor.

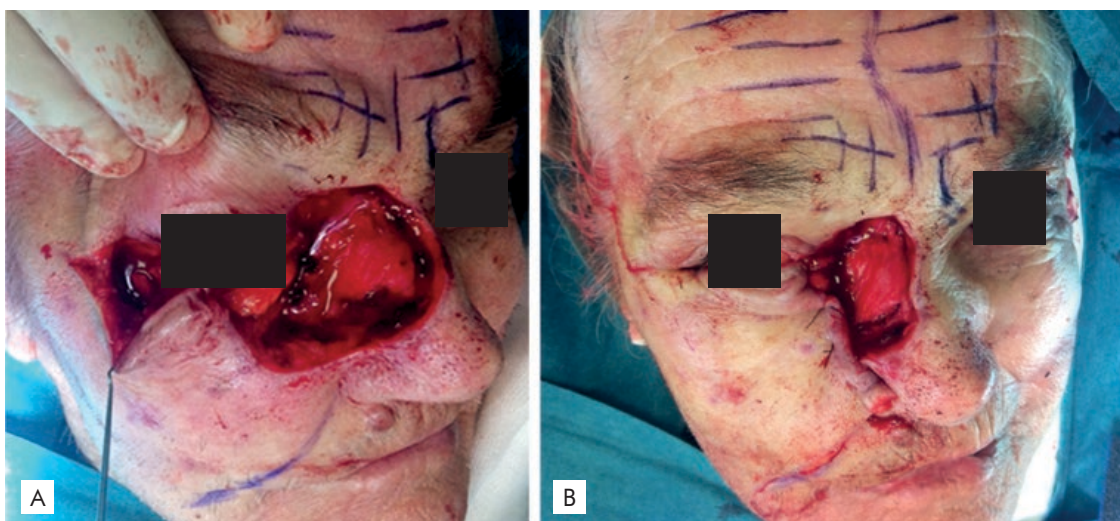
Herein, the authors report a “step-by-step” reconstruction of an extensive and complex surgical defect by separated aesthetic units with a simple combination of standard flaps, achieving an excellent reconstructive result. A contralateral interpolated paramedian forehead flap was used for reconstruction of the nose, whereas a Tenzel flap associated with a malar advancement flap were used for the reconstruction of the lower eyelid and infraorbital region.

This reconstruction approach by subunits keeps facial skin quality, hides scars and restores contour and landmark symmetry, maintaining the normal facial anatomy.

### SURGICAL TECHNIQUE

Anaesthesia was obtained through neural block of the

infraorbital, supraorbital and supratrochlear nerves with 1% lidocaine and adrenaline. A 5 mm margin from the tumor was designed. The tumor area was infiltrated with the same local anesthetic to produce hidrodissection and vasoconstriction. The lesion was removed and the resulting surgical defect corresponded to an extensive periorbital defect involving the medial canthus along with 50% of the lower eyelid, infraorbital region, nasal root and virtually all of the right nasal sidewall subunit (Fig.1B). To guarantee complete tumor removal, the tear drainage system could not be preserved. For the surgical reconstruction of this large and complex surgical defect, a “step-by-step” approach was performed, regarding the different anatomical areas, always respecting the aesthetic facial subunits.



**Figura 2** - (A) - Adaptation of the Tenzel flap after canthotomy. (B) - Association of the malar advancement flap to the Tenzel flap to reconstruct infraorbital region.



**Figura 3** - (A) - Adaptation of the paramedian forehead flap to reconstruct the right side wall nasal defect. (B) - The final result after 6 months of follow-up.

For the lower eyelid defect we used the Tenzel semicircular flap (Fig.2A). This was dissected in a suborbicularis plane, beginning at the lateral canthus and extending superiorly in a semicircular pattern with a little slope. The musculocutaneous flap was elevated and the dissection was carried down to the lateral orbital rim. A lateral canthotomy was performed, followed by lysis of the lower-lid tendon at the canthal angle and the eyelid and flap were advanced medially to close the defect. A double-armed 4-0 nylon suture with half-circle needle was used between the cut edge of the Tenzel flap and the periosteum of the lateral orbital rim. The double-armed suture was then tied externally 3 to 4 mm from the rim's edge.

The cutaneous defect of the cheek was corrected with a malar advancement flap with the incision made inferior to the cheek defect, paralleling to the melolabial crease. The adjacent cheek skin was advanced and secured to the nasal facial sulcus (Fig.2B).

For closure of the nasal defect, the authors used a contralateral paramedian interpolated forehead flap (Fig.3A). The flap was designed with a pedicle width of 1 to 1.2 cm using the glabellar frown line as an anatomical marker for the underlying supratrochlear artery and flap pedicle origin. The authors did not use the Doppler to identify the axial vessel. During dissection, the corrugator complex and frontalis in the base of the pedicle were meticulously incorporated for reliable flap viability and likely inclusion of the supratrochlear artery. The width of the flap not exceed 3 to 3.5 cm in order to close directly the donor defect in the forehead. The length of the flap was measured by a length of suture extending from the distal end of the surgical defect to the level of the medial eyebrow. Holding it at the brow, the suture was rotated 180° toward the midline in the coronal plane

to the most distal recipient site on the nose. The flap was then outlined on the forehead with a skin marker. Before the flap incision through the skin, subcutaneous tissue, muscle, and fascia, the authors always mark the horizontal forehead wrinkles as reference marks for closure the donor site. The flap was elevated from superior to inferior in the subfascial plane, just superficial to the periosteum of the frontal bone. When the corrugator supercilii muscle was encountered, the muscle was dissected away from the underlying periosteum bluntly with scissors. Donor site closure was accomplished by extensive undermining of the forehead skin in the subfascial plane from the anterior border of one temporalis muscle to the other. The muscle and subcutaneous fat tissue from the distal portion of the flap were removed to make the flap thin, pliable and easily contoured to fit in the nose defect. After thinning, the flap was pivoted in an arc toward the midline and reflected downward toward the nasal defect. The distal flap was sutured in position with 4-0 vycril sutures and interrupted 5-0 nylon vertical mattress cutaneous sutures. Following placement of vertical mattress sutures, a continuous 6-0 nylon suture was used to precisely approximate the epidermis of the flap to the adjacent nasal skin (Fig.3A).

On the seventh postoperative day sutures were removed. Histopathology confirmed the diagnosis of a BCC with no involvement of surgical margins.

Paramedian forehead flaps used as interpolated flaps for nasal reconstruction require a second operation to separate the pedicle. Three weeks after first intervention, pedicle separation was performed under local anaesthesia with 1% lidocaine containing epinephrine injected into the base of the pedicle and around the attached flap. The base of the pedicle was returned to its donor site in such a fashion to restore the normal inter eyebrow distance. Just as with the inset of

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the flap at the recipient site, it is often necessary to remove early scar deposition in the donor area to enable the pedicle to lie flat between the eyebrows. All the scars were submitted to mechanical dermabrasion to improve the cosmetic result. On seventh postoperative day of the second surgical stage, sutures were removed.

After 6 months of follow up, the final result preserves the aesthetic appearance of the periorbital region (Fig.3B). The only defect was a discrete asymmetry of the canthal regions, meaningless for the patient that is very happy with the cosmetic and functional result.

### CONUNDRUM KEYS

When planning closure of such a large defect on the periorbital region a second intention healing should be avoided as the scar contraction must be considered because its proximity to the lower eyelid may result in ectropion.<sup>3</sup> Skin grafts provide a poor match in thickness and color, and should be only considered as a temporary measure. The combination of different flaps is useful in the closure of defects that involve several cosmetic units.<sup>2</sup>

Forehead skin, when compared with nasal skin, provides a source of skin with an excellent color and texture match. The disadvantages of the paramedian forehead flap are the donor site scar and the need of a two-stage procedure.<sup>4,5</sup>

For lower eyelid defects ranging from 40% to 60% of the lid, the Tenzel semicircular flap is preferred as a workhorse flap.<sup>6</sup>

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