



Dermatology Reports

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eISSN 2036-7406



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Please cite this article as:

Tchernev G, Tchernev Jr KG, Kordeva S. Dermatosurgical pearls: melolabial advancement flap for tension-free closure of a basal cell carcinoma defect under the eyelid. Dermatol Rep 2025 [Epub Ahead of Print] doi: 10.4081/dr.2025.10649

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Submitted 15/10/25 - Accepted 29/10/25

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Dermatosurgical pearls: melolabial advancement flap for tension-free closure of a basal cell carcinoma defect under the eyelid

Georgi Tchernev,^{1,2} Konstantin Georgiev Tchernev Jr,² Simona Kordeva¹

¹Department of Dermatology and Venereology, Medical Institute of Ministry of Interior, Sofia;

²Onkoderma - Clinic for Dermatology, Venereology and Dermatologic Surgery, Sofia, Bulgaria

Correspondence: Dr Simona Kordeva, Department of Dermatology and Venereology, Medical Institute of Ministry of Interior, General Skobelev 79, 1606 Sofia, Bulgaria.

E-mail: simonakordeva97@gmail.com

Key words: dermatologic surgery; melolabial advancement flap; basal cell carcinoma; infraorbital region.

Conflict of interest: the authors have no conflict of interest to declare.

Ethics approval and consent to participate: no ethical committee approval was required for this case report by the Department, because this article does not contain any studies with human participants or animals. Informed consent was obtained from the patient included in this study.

Consent for publication: the patient gave his written consent to use his personal data for the publication of this case report and any accompanying images.

The case

A 73-year-old man presented to the dermatology department with a history of a tumor in the right infraorbital region, present for approximately 2-3 years, which had shown progressive enlargement in recent months. Dermatological examination revealed a nodular, tumor-like lesion, elevated above the surrounding skin, with visible telangiectasias and crusts, clinically suspected to be basal cell carcinoma (Figure 1a). Family history of skin cancer was unremarkable. The patient denied frequent sun exposure during child- or adulthood. Routine blood tests showed mild anemia, dyslipidemia, and hyperuricemia. Surgical excision of the lesion was recommended.

Our choice

Due to the complexity of the primary wound defect and the sensitive anatomical region – given the close proximity of the angular and infraorbital arteries and veins, as well as the inferior nasolacrimal canal – secondary wound healing or closure with single interrupted sutures was deemed unsuitable. Furthermore, the final outcome must align with the facial cosmetic units. Due to these considerations, our team opted for defect reconstruction using a flap.

Procedure

The tumor formation (Figure 1a) was preoperatively marked (Figure 1b) and removed with an oval excision under local anesthesia using 1% lidocaine, maintaining a 4 mm safety margin (Figure 1c). Hemostasis was achieved. Two incisions were designed: 1) a caudal incision beginning at the medial edge of the primary defect, extending parallel to the lateral nasal sidewall toward the right cheek, and terminating at the right alar sulcus; and 2) a perpendicular incision extending from the caudal incision toward the midface, ending just below the periobital region. The melolabial flap was carefully undermined lateral to the incision and advanced medially to cover the primary defect, while ensuring preservation of its vascular supply (Figure 2 a,b). The secondary wound defect was closed with single interrupted 5-0 polypropylene sutures (Figure 2c). A sterile dressing with povidone-iodine was applied.

Histopathological evaluation revealed nodular basal cell carcinoma with focal epidermal ulceration, clear resection margins, stage 1 T1NxMxR0. Mild postoperative edema was noted. Postoperative bleeding occurred but was promptly and successfully managed. All sutures were completely removed two weeks after the surgical intervention (Figure 2d).

Comment

Facial reconstruction requires not only surgical precision and expertise but also careful selection of the most appropriate technique, tailored to the patient's skin elasticity and individual facial wrinkle pattern.¹ This ensures an individualized approach for each case. The melolabial advancement flap is often the preferred choice in older patients with a well-defined melolabial crease.² Positioning the caudal incision within or parallel to the melolabial crease provides maximum scar camouflage.³ Although it is associated with relatively low donor site morbidity, careful and atraumatic elevation of the flap is essential to preserve its vascular supply.⁴ The cheek skin in the region between the melolabial fold and lateral to the melolabial crease has a rich vascular supply from branches of the facial artery, with venous drainage through the facial angular vein.³

In this case, the melolabial advancement flap proved to be the most appropriate reconstructive option, as it allows for optimal redistribution of tension vectors, ensures reliable blood supply, and provides excellent scar camouflage within the patient's natural facial units, thereby offering both functional and aesthetic advantages for defect coverage in the infraorbital region.

The outcome

Figure 2d illustrates the outcome at the 2-week follow-up.

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Figure 1. Preoperative marking: nodular, tumor-like lesion, elevated above the surrounding skin, with visible telangiectasias and crusts, clinically suspected to be basal cell carcinoma (a,b). Intraoperative view: primary circular defect after excision (c).



Figure 2. Intraoperative view: the melolabial flap was carefully undermined lateral to the incision and advanced medially to cover the primary defect, while ensuring preservation of its vascular supply (a,b). The secondary wound defect was closed with single interrupted 5-0 polypropylene sutures (c). Postoperative view: 14-day postoperative results (d).

