

Malar region advancement flap for reconstruction of nasojugal groove defect: case report

Abstract

Basal cell carcinoma (BCC) is the most common skin cancer. When located in the region of the nasojugal groove (tear drip), reconstruction of the resulting defect can become very challenging, due to local cosmetic and functional peculiarities. We report the use of an advancement flap to reconstruct the tear trough with satisfactory results, both in terms of aesthetics and the resulting functionality.

Keywords: basal cell carcinoma, surgical flaps, surgical technique, lower eyelid

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Introduction

Basal cell carcinoma (BCC) is the most common type of skin cancer.¹ Depending on the size and location, complete excision of this type of tumor requires the creation of a flap to close the resulting defect.^{1,2} Reconstructions in the lower eyelid region, including the nasojugal region (tear trough), become more challenging for the dermatologic surgeon due to local characteristics such as aesthetic, functional, and structural aspects, given the proximity to the tear duct.³

The advancement flap (AF) is one of the options for closing larger skin lesions, in which a portion of skin is slid or linearly advanced to fill a defect immediately in front of the flap. The proportions of skin used in the flap vary according to the surgeon's needs and experience.⁴

We report a case of a patient who underwent AF for reconstruction of an anatomical gutter defect, utilizing the entire malar region rather than just a portion of a flap segment. This technique took advantage of the natural facial grooves to avoid more visible scars. The objective of this case report is to exemplify and demonstrate an alternative technique for correcting defects in this region, with easy execution, a single surgical procedure, and satisfactory aesthetic results.

Case report

A 58-year-old white male patient presented to the university's dermatology outpatient clinic with complaints of a facial lesion that began as a progressively growing erythematous papule approximately 1 year earlier. He reported no diabetes mellitus or hypertension. Dermatological examination revealed an 11-mm plaque (mm) with telangiectasia in the left nasojugal region (left anatomical sulcus). An incisional biopsy was performed, and histopathological examination confirmed BCC. The lesion was excised with 4-mm safety margins. The resulting defect measured 19 mm in its longest axis, and the left malar region was selected as the flap donor site (FA) (Figure 1 & Figure 2).



Figure 1 BCC located in the anatomical groove (nasojugal groove). Prior surgical marking of the flap incisions.



Figure 2 Surgical defect and flap incisions.

Technique description:

- a. Patient in horizontal supine position.

- b. Marking the lesion with methylene blue or a surgical pen, with a 4-mm margin, and the flap incision sites. Flap marking begins at the outer corner of the left inferior orbital region, in the infraorbital sulcus, extending medially until it meets the inferior margin of the lesion, reaching the nasofacial fold and following the left nasolabial fold, ending at the level of the left buccal angle (Figure 1 & Figure 2).
- c. Antisepsis with 10% topical polyvinyl iodine.
- d. Placement of surgical drapes.
- e. Infiltration anesthesia with 2% lidocaine and vasoconstrictor.
- f. Incision of the lesion with a 15-blade blade and en bloc excision of the specimen down to the subcutaneous layer.
- g. Hemostasis.
- h. Incision of the flap, as previously marked, starting at the outer corner of the left inferior orbital region, in the infraorbital sulcus, extending medially until it meets the inferior margin of the lesion, reaching the nasofacial fold and following the left nasolabial fold, ending at the level of the left buccal angle (Figure 2).
- i. Subcutaneous flap detachment (Figure 3).
- j. Advancement of the flap from the malar region to the defect in the anatomical groove region (Figure 4).
- k. Fixation of the AF over the defect and closure of the donor area with 5.0 mononylon sutures, single stitches.
- l. Local cleansing with saline solution.
- m. Occlusive dressing.



Figure 3 Flap detached at subcutaneous level.



Figure 4 Flap advanced over the defect and sutured.

Results

The patient had an uneventful recovery in the first few days after surgery. Healing and accommodation were good, with a satisfactory aesthetic result in the late postoperative period (Figure 5).



Figure 5 One year after surgery.

Discussion

The anatomical groove region (nasojugal sulcus), because it is a centropacial location,⁵ close to the lacrimal duct and palpebral tarsus, can pose a significant challenge for dermatologic surgeons, especially when primary closure is not possible.³

Flaps can be used in the reconstruction of the anatomical groove.⁶ The AF has a linear configuration, unlike rotation flaps, which have a curvilinear configuration. A segment of skin and subcutaneous tissue is used that projects forward along an axis until it reaches the defect.⁴

The recommended width to length ratio for the advancement flap would be 1:3, but this can vary from case to case, depending on the size of the defect, the affected region, and the surgeon's experience.⁷

The present authors created a proportionally large flap for a relatively small defect that would not close initially. We chose to make the incisions in the natural facial creases, which resulted in a large skin detachment, but the final result would be a better aesthetic outcome.

Despite the large flap, the present authors consider this type of procedure a good surgical option, as in the case reported, given the barely visible scars and the uniformity of the skin across the malar region maintained by the AF, which would not be achieved with grafting.

Conclusion

The use of AF can be a good option for resolving defects in the region of the nasojugal groove (tear drip), given that it resolves in a single surgical procedure, with good cosmetics and functionality.

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Conflict of interests

The authors declare there is no conflict of interest.

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References

1. Kondo RN, Gon AS, Pontello Junior R. Recurrence rate of basal cell carcinoma in patients submitted to skin flaps or grafts. *An Bras Dermatol*. 2019;94(4):442–445.
2. Kondo RN, Singh BS, Ferreira VP, et al. Upper eyelid transposition flap for the reconstruction of a lower eyelid defect: a case report. *Surg Cosmet Dermatol*. 2022;14:e20220156.
3. Subramanian N. Reconstructions of eyelid defects. *Indian J Plast Surg*. 2011;44(1):5–13.
4. Shew M, Kriet JD, Humphrey CD. Flap basics II: advancement flaps. *Facial Plast Surg Clin North Am*. 2017;25(3):323–335.
5. Lee JH, Hong G. Definitions of groove and hollowness of the infraorbital region and clinical treatment using soft-tissue filler. *Arch Plast Surg*. 2018;45(3):214–221.
6. Bhandari PS. Reconstruction of medial canthal defects by local/loco-regional flaps. *J Craniofac Surg*. 2022;33(3):e287–e290.
7. Kruter L, Rohrer T. Advancement flaps. *Dermatol Surg*. 2015;41 Suppl 10:S239–S246.