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Dermatosurgical pearls: the East-West advancement flap for reconstruction of primary defects following skin cancer excision in the nasal region

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The case

A 62-year-old male presented to the dermatology department with a primary complaint of an achromatic tumorous lesion protruding above the surrounding skin, with central atrophy, irregular borders, and visible telangiectasias, located on the nasal distal third, slightly toward the left nasal dorsum (Figure 1). Based on the clinical presentation, basal cell carcinoma was suspected and surgical excision under local anesthesia was recommended.

Our choice

The nose represents a major aesthetic unit and a sensitive anatomical area due to its structural complexity and cosmetic significance. Given the nose's central role in facial aesthetics, individuality, and overall expression, careful selection and planning of the surgical technique are essential.

Reconstruction in the facial region must take into account the complexity of the defect, the risk for potential functional impairment, and the potential for postoperative scarring.

Primary closure was not feasible due to the limited elasticity of the skin and the size of the defect, which could result in significant distortion and disfigurement of the unit.

Although skin grafting may offer a simpler approach, factors such as the need for postoperative immobilization, delayed functional recovery, and potential color and texture mismatch deemed the option suboptimal.

The skin on the nasal tip is relatively thick and has more pilosebaceous units. This makes it difficult to obtain skin of a similar thickness from adjacent or distant donor sites, which can lead to suboptimal results.

Thick and non-elastic skin may pose challenges for flap transposition, as it can increase wound tension and predispose to the formation of cutaneous deformities. In contrast, advancement flaps can provide a superior match in color and texture, minimize tension vectors, preserve nasal architecture, and achieve more favorable aesthetic outcomes.

We present a case involving a small-to-medium-sized supratip primary defect following surgical excision of a cutaneous lesion within the nasal facial unit. Reconstruction was performed using an East-West advancement flap. Although alternative flap techniques, including the bilobed flap and nasal tip rotation flap, among others, could have been considered, the East-West flap was selected due to its simpler design and superior aesthetic outcome. This technique uses adjacent horizontal tissue, allowing a flatter contour and minimizing excess thickness, in contrast to the bilobed flap, which may be associated with trapdoor deformity and a higher likelihood of secondary refinement scar procedures.

Procedure

The defect was carefully outlined prior to excision. The flap design was then outlined, consisting of a superiorly placed vertical triangle incorporating the defect, along with an additional release triangle positioned inferiorly and laterally (Figure 2).

A 1×1 cm tumor located on the distal third of the nose, in the supratip subunit, slightly toward the left nasal dorsum, was preoperatively marked and excised with appropriate surgical margins under local anesthesia using 1% lidocaine.

The superior triangle was designed to match the width of the defect and was extended in length to prevent saddle deformity on the lateral view, while the inferior triangle was made narrower to preserve as much tissue as possible. The triangles were subsequently excised, followed by careful hemostasis and meticulous undermining of the surrounding tissue across the dorsal midline (Figure 3 a,b). The ipsilateral edge of the nasal sidewall and the medial alar rims were also carefully undermined. Careful distribution of tension vectors is essential to prevent alar flaring. The remaining secondary defect was closed with single interrupted 4-0 and 5-0 polypropylene sutures, with the first key suture placed at the midpoint of the superior triangle and the second at the midpoint of the inferior triangle (Figure 4). No postoperative functional impairment was observed (Figure 5).

Comment

Cutaneous defects of the lateral nasal supratip and the inferior and lateral sidewall following skin cancer excision may present a reconstructive challenge.¹ In cases of nasal tip defect where the skin is tightly adherent to the underlying cartilage, primary closure and skin grafting are generally not recommended.^{2,3}

Primary closure may generate excessive tension vectors, increasing the risk of facial distortion and functional impairment, while skin grafting may result in visible color and texture mismatch, as well as contour depressions, leading to suboptimal aesthetic outcomes.^{2,3}

Reconstructive options in such cases could be the bilobed transposition flap, island pedicle flaps, advancement flaps, and interpolation flaps.¹ Bilobed or trilobed flaps, as well as skin grafting, were not considered due to their increased design complexity and the potential, although rare, for nasal valve compromise.³

The dorsal nasal rotation-advancement flap, also known as the Rieger flap, is a single-stage local flap used for the reconstruction of moderate-sized defects located on the lower half of the nose. The Marchac modification of this flap, which is an axial-pattern flap designed from the glabellar region, could also be considered.⁴ Although the Marchac flap could provide aesthetic incision lines that are well hidden within cosmetic subunit junctions, both it and the original Rieger flap are associated with

greater complexity and a potential need for corrective procedures, as well as the possibility of unwanted alar elevation or nasal tip distortion due to the patient's markedly thick and relatively immobile skin.⁴ In contrast, the East-West advancement flap is conceptually straightforward, supported by a robust vascular pedicle, and provides excellent tissue compatibility while preserving nasal architecture and symmetry and achieving favorable aesthetic outcomes.⁵ It is primarily indicated for larger noses with small defects, typically less than 1.5 cm in diameter, particularly located on sebaceous skin.⁵

The outcome

The outcome is shown in Figure 5: 1-month postoperative follow-up.

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Figure 1. Preoperative view. An achromatic tumorous lesion protruding above the surrounding skin, with central atrophy, irregular borders, and visible telangiectasias, located on the nasal distal third, slightly toward the left nasal dorsum.



Figure 2. Preoperative markings. The East-West flap design: the flap is outlined, consisting of a superiorly placed vertical triangle incorporating the defect, along with an additional release triangle positioned inferiorly and laterally.



Figure 3. Intraoperative view. The East-West advancement flap: the triangles are excised, followed by careful hemostasis and meticulous undermining of the surrounding tissue across the dorsal midline.



Figure 4. Intraoperative view. The remaining secondary defect is closed with single interrupted 4-0 and 5-0 polypropylene sutures.



Figure 5. Postoperative view. 1-month follow-up.

