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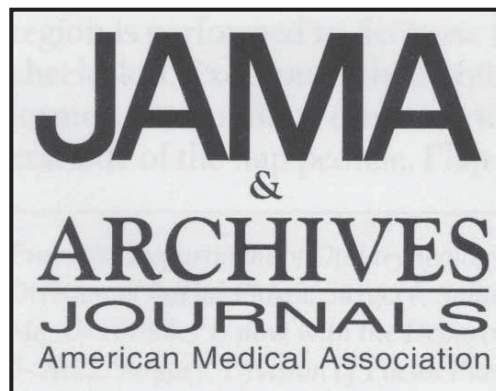
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The Dorsal Nasal Flap Revisited

Aesthetic Refinements in Nasal Reconstruction

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RECONSTRUCTING SURGICAL DEFECTS of the nasal tip and lower third of the nose presents a unique challenge for the facial plastic surgeon. Treatment options include: secondary intention healing, full- and split thickness skin grafts, and local and distant flaps. Owing to the unique texture and color of nasal skin, it is always preferable that like tissue be replaced by like tissue. Scars are best placed at the junction of aesthetic units while reconstruction should adhere to nasal subunit principles.

The work of Burget and Menick¹ raised the standard for nasal reconstruction; however, the popularized paramedian forehead flap is a distant flap with significant donor site morbidity and requires second-stage reconstruction. The dorsal nasal flap is a local flap that uses nasal skin for a single-stage reconstruction. It involves rotation advancement of dorsal nasal skin from the upper two thirds of the nose and glabella to the lower nose. The dorsal nasal flap is certainly not our original concept; this article is to support previous works, further demonstrate its usefulness and versatility, and describe detailed refinements to achieve improved and predictable aesthetic results.

SURGICAL TECHNIQUE

The dorsal nasal flap is used for defects of the distal third of the nose that are at least 5 mm away from the alar rim (**Figure 1**). We use a broad random pedicle that is typically based ipsilateral to the lesion to improve flap rotation. Flap design starts above the inner canthus and extends into glabellar frown lines, but should avoid extending above the medial brow (**Figure 2**). The skin of the dorsum, through the defect, is undermined in a submuscular plane with Kaye scissors before flap incision. Using a No. 15 blade the skin-muscle flap is incised; however, in the glabellar region, only skin is elevated with the flap. Meticulous hemostasis is achieved with bipolar cautery, making sure not to injure the undersurface of the flap. If more advancement or rotation is required, the skin incision can be lengthened to the level of the medial canthal ligament. The lateral incision should be placed at the nasofacial junction, making sure not to violate the nasal sidewall subunit. A small amount of lateral undermining in the cheek region is performed to decrease flap tension by advancing cheek skin. Excision of the stand-

ing cone deformity is performed in an oblique direction to the defect on the ipsilateral side of the flap pedicle. Flap contour and inset are optimized by sculpting the undersurface of the flap and thinning the soft tissue of the recipient bed. The glabellar donor site is closed in a V-Y fashion. All incisions are closed in 2 layers, with No. 5-0 polyglactin 910 (Vicryl) subcuticular and No. 6-0 polypropylene (Prolene) sutures for skin. Particular attention with meticulous skin eversion is performed at the tip level and lateral nasofacial junction, making sure to allow for discrepancies in skin thickness. Tension is minimized at the distal aspect of the flap to prevent alar retraction or asymmetries secondary to flap tension. We routinely evaluate for incisional interface dermabrasion at 6 weeks postoperatively (**Figure 3**).

COMMENT

The dorsal nasal flap was originally described by Gillies² as a bishop's mitre flap. However, in 1967 Rieger³ pub

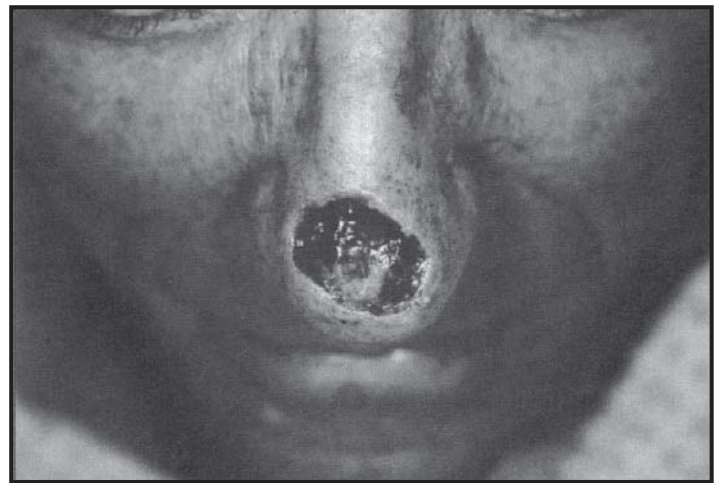


Figure 1. A 1.7x 2.2-cm nasal tip Mohs defect.

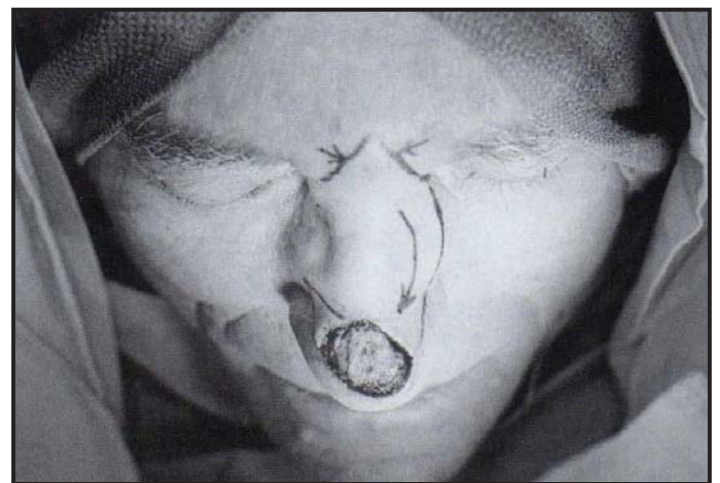


Figure 2. Flap design. Donor incision within glabellar frown lines with limited cranial extension to the level of the medial brow. Lateral incision at nasofacial junction that does not violate nasal sidewall subunit. Obliquely marked standing cone deformity excision is ipsilateral to the flap pedicle.

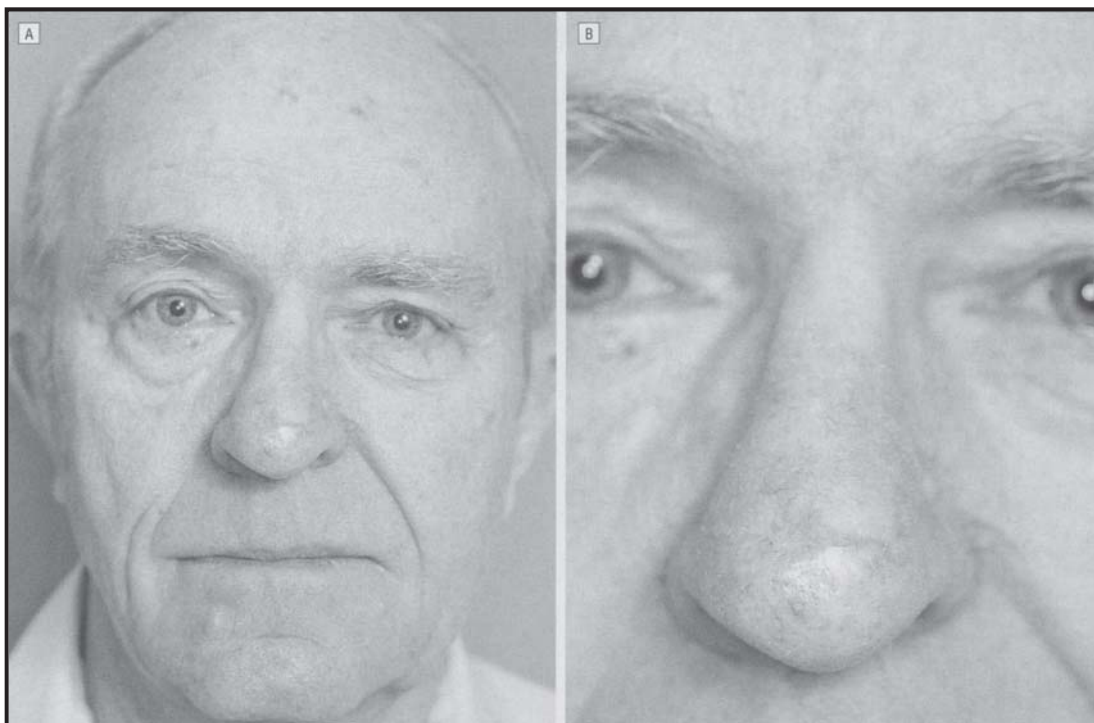


Figure 3. A, Six-month follow-up after incisional interface dermabrasion. B, Close-up view.

lished his design that popularized the flap for its use in defects of the nasal tip. He described a random flap with caudal rotation advancement of the dorsal nasal skin and Z-plasty closure of the glabellar defect. In 1970 Marchac⁴⁴ described a modified Rieger flap design based in an axial fashion on a branch of the angular artery. Marchac further described closure of the glabellar defect in a V-Y fashion, excision of the standing cone deformity, and flap elevation in a submuscular plane. In 1993 de Fontaine et al⁵ described their modification for lateral tip defects by placing the pedicle ipsilateral to the defect rather than on the standard contralateral side.

We prefer the nasal dorsal flap for distal nasal defects because it is a 1-stage reconstruction that replaces like tissue with skin of similar kind. Reconstruction of nasal skin defects should use remaining nasal skin whenever possible to preserve the unique color and texture of the nose. Incisions are designed at aesthetic unit junctions resulting in well-camouflaged scars while applying subunit concepts to nasal reconstruction. Best results are obtained when the thickness of the recipient edge of the defect is the same as the leading edge of the flap. The flap typically responds well to dermabrasion and frequently the scar is further enhanced by this technique at 6 weeks postoperatively.

The key elements for success with using the dorsal nasal flap include the following:

- Placing donor site incisions in glabellar frown lines while minimizing cephalad extension to the level of the medial brow.
- Lateral incisions at the nasofacial junction,

making sure not to violate the nasal sidewall subunit.

- Contouring the undersurface of the flap and soft tissue recipient bed before flap inset.
- Postoperative incisional interface resurfacing at 6 weeks with diamond fraise dermabrasion.

We describe detailed refinements in flap harvest, contouring, inset, and donor site incisions resulting in design modifications that enhance overall cosmetic results. These refinements have enabled us to achieve improved and consistent aesthetic results for nasal reconstruction in a 1-staged procedure.

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