

Frontonasal Flap Reconstruction for Nasal Tip, A Practical Review

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ABSTRACT

The frontonasal flap is a versatile, single-stage local cutaneous flap used for reconstruction of nasal tip and alar defects, most commonly following oncologic resection or trauma. Harvested from the nasal dorsum and glabellar region, it benefits from the robust vascular network of the upper nose, allowing safe transposition with predictable outcomes. Proper flap design—adapted in size, curvature, and scar placement—enables tailored reconstruction according to defect location, laterality, and patient-specific anatomy. Compared with larger axial flaps such as the paramedian forehead flap, the frontonasal flap offers a less invasive option for select defects, avoiding multistage reconstruction. Reported complication rates are low, with high aesthetic and functional satisfaction. This article reviews the indications, design principles, advantages, limitations, and current evidence surrounding the frontonasal flap, emphasizing its role as a reliable alternative in nasal reconstruction.

KEYWORDS: Frontonasal flap; nasal reconstruction; nasal tip defects; alar defects; local flap; glabellar flap; forehead flap; cutaneous flap.

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INTRODUCTION

Reconstruction of nasal tip and alar defects poses a unique challenge due to the complex topography, limited local skin redundancy, and central aesthetic importance of the nose. The frontonasal flap, first popularized in modern plastic surgery literature as a reliable single-stage solution, offers an effective option for restoring contour and texture in small to moderate defects of the nasal tip, supratip, and ala.

Designed from the nasal dorsum and glabella, the frontonasal flap utilizes adjacent tissue with a close color and texture match. Its vascularity derives from a rich subdermal plexus supplied by branches of the angular, dorsal nasal, and

supratrochlear arteries. By preserving this subdermal vascular network, the flap can be safely elevated and transposed with high survival rates (1–2).

While the paramedian forehead flap remains the gold standard for large or full-thickness nasal defects, the frontonasal flap fills an important niche by allowing single-stage reconstruction of smaller, partial-thickness defects with minimal donor morbidity and concealed scars (3–4). This article summarizes the principles, applications, and outcomes associated with the frontonasal flap and highlights distinctions from forehead-based flaps.



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DISCUSSION

Anatomical Basis

The frontonasal flap is classified as a random-pattern local flap, relying on the dense vascular plexus of the upper two-thirds of the nose and glabella. Blood supply is derived from: Supratrochlear artery branches

Angular artery branches

Dorsal nasal vessels

This robust network allows reliable perfusion even with large arcs of rotation.

Design and Technique

The flap is typically planned as an advancement-rotation flap originating from the glabella, nasal dorsum, or both. Key design considerations include:

Flap size and arc of rotation based on whether the defect is central (tip, supratip) or lateral (ala).

Orientation of incisions placed along natural dorsal and glabellar rhytides to minimize visible scarring.

Thickness matching the nasal defect to maintain contour and avoid trapdoor deformity.

Dog-ear management at the glabellar donor site to optimize cosmesis.

Scheufler described multiple design variations—horizontal, oblique, extended, and paramedian-based configurations—tailored to defect geometry (1).

Indications

The frontonasal flap is most appropriate for:

Nasal tip defects up to ~2.5 cm

Supratip defects

Partial alar defects

Defects after Mohs micrographic surgery

Small traumatic avulsions or necrosis

For larger, full-thickness, or multi-subunit defects, a forehead flap is typically preferred.

Advantages

Single-stage reconstruction (major advantage over the classic 2- or 3-stage forehead flap)

Excellent color and texture match because donor and recipient zones share sebaceous nasal skin

Low complication rates, including flap loss, infection, or contour deformity

Minimal donor-site morbidity with scars hidden in dorsal nasal lines

Multiple studies report good to excellent aesthetic outcomes and high patient satisfaction (1–2, 5).

Distinguishing the Frontonasal Flap from the Forehead Flap
Although sometimes confused in lay descriptions, these are distinct procedures:

Feature	Frontonasal Flap	Forehead Flap
Type	Local random-pattern flap	Axial flap (supratrochlear artery)
Donor site	Nasal dorsum and glabella	Forehead
Stages	Single-stage	Typically 2–3 stages
Indications	Small/moderate nasal tip/alar defects	Large/multisubunit nasal defects
Advantages	Less invasive, fewer stages	Can reconstruct large, complex defects

The forehead flap remains essential for major nasal reconstruction (3–4), but the frontonasal flap offers a conservative, cosmetically appealing choice for smaller defects.

Outcomes and Complications

Most reported series demonstrate:

High flap survival (>95%)

Minimal contour irregularities

Rare complications such as alar notching, hypertrophic scarring, or trapdoor deformity

Good symmetry and texture match

Alternative local flaps—such as bilobed, nasolabial, and dorsal nasal flaps—may also be considered, but the frontonasal flap provides a unique combination of reach, vascularity, and aesthetic integration (6–7).

Conclusion

The frontonasal flap is a dependable, single-stage option for reconstruction of nasal tip and alar defects, offering excellent color match, robust vascularity, and minimal morbidity. When carefully designed and executed, it provides high-quality aesthetic and functional outcomes, serving as an ideal alternative to more extensive multistage flaps for appropriately selected patients.

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Frontonasal Flap Reconstruction for Nasal Tip, A Practical Review

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