Defects of the Nose, Lip, and Cheek: Rebuilding the Composite Defect

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Background: The face can be divided into regions (units) with characteristic skin quality, border outline, and three-dimensional contour. A defect may lie entirely within a single major unit or encompass several adjacent units, creating unique problems for repair. Composite defects overlap two or more facial units. Nasal defects often extend into the adjacent lip and cheek. The simplest solution may appear to be to simply “fill the hole”—just replace the missing bulk. Poor contour, incorrect dimension, malposition, asymmetry, poor blending into adjacent normal tissues, and a patch-like repair often follow.

Methods: The following principles of regional unit repair were applied to guide these complex reconstructions: (1) reconstruct units, not defects; (2) alter the wound in site, size, shape, and depth; (3) consider using separate grafts and flaps for each unit and subunit, if appropriate; (4) use “like” tissue for “like” tissue; (5) restore a stable platform; (6) build in stages; (7) use distant tissue for “invisible” needs and local skin for resurfacing; and (8) disregard old scars.

Results: Clinical cases of increasing composite complexity were repaired with local, regional, and distant tissues. Excellent aesthetics and function were obtained.

Conclusions: Careful visual analysis of the normal face and the defect can direct the choice, timing, and technique of facial repair. Regional unit principles provide a coordinated approach to the vision, planning, and fabrication of these difficult wounds. The entire repair should be intellectually planned, designed step by step, and laid out in a series of coordinated steps, with general principles applied to successfully repair composite defects of the nose, lip, and cheek. (Plast. Reconstr. Surg. 120: 887, 2007.)

Visually, the face is seen as a confluent, unified gestalt of flowing expansive spaces and complexly contoured features. Aesthetically and anatomically, it can be divided into interrelated regions, each with its own unique character—individual geographic areas defined by expected facial skin color, surface character (smooth, pitted), skin thickness, hair quality (fine, matte, beard, scalp), mobility, subcutaneous fat distribution, muscle expression, and three-dimensional shape. Surgeons describe these topographic areas as facial units. Each unit and subunit are visually defined by their characteristic skin quality, border outline, and three-dimensional contour. The peripheral units are the forehead, cheek, and chin. They are flat, expansive areas with a variable outline and (like a picture frame) are of secondary visual interest.

In contrast, the central units of the nose, lips, and eyelids are highly three-dimensional and with a fixed border outline. They demand our primary gaze. Because the entire area of these central units is seen in most views, its contralateral comparison with the opposite normal side (e.g., ala with ala) demands symmetry in position, outline, and shape. The restoration of appearance after reconstruction requires the restoration of the “normal”—the facial units.1,2

The cheek is broad, flat, and expansive, joining the nose in a gentle advancing slope into the nasal sidewall while abutting the lip at the well-defined change in contour defined by the nasolabial fold. Note that the ala sits medial to the nasolabial fold where it rises from the lip (not the cheek). A hairless triangle of lip lies between the alar base and the nasolabial fold. The nasolabial fold extends upward lateral to the normal alar crease.

The gently contoured soft-tissue landmarks of the lip are marked by the philtrum columns, the cupid’s bows, and the symmetrical vermillion.
The skin, subcutaneous fat, and muscle of the lip are supported by the underlying maxilla. The lip unit projects slightly forward of the facial mass. The superior border of the lip abuts the alar base and nostril sill.

The nose projects from the central facial platform of the lip and cheek. Its delicate and complex three-dimensional contours define the nasal subunits and establish the requirement for precise symmetry and spatial relationships to the contralateral nasal subunits and to all adjacent facial features, defining the length, width, and position of the nose.

When tissues are missing because of cancer ablation, trauma, or congenital deficiency, a wound may lie entirely within a single major unit. Frequently, however, a defect encompasses several adjacent units, creating unique problems for repair. Composite defects are those that overlap two or more facial units. Often a nasal defect extends into the adjacent lip and cheek, presenting as a large, three-dimensional loss that encompasses several units. Remember that aesthetic and anatomical tissue deficiencies and, thus, the requirements for repair of each facial area vary in cover, lining, support, and soft- and hard-tissue deficiency and in quality, outline, and contour.

The simplest solution may appear to be to simply “fill the hole”—just replace the missing bulk. Although a healed wound is a worthy objective, the most important function of the face is to appear normal. Therefore, success is determined by aesthetics, not simple wound closure. Several traps await the unsuspecting surgeon when repairing a composite wound.

First, the defect may not reflect the actual tissue loss. Wounds are enlarged by edema, local anesthesia, gravity, or tension or diminished by scar contraction or previous attempts at reconstruction. If a flap or graft that is too small is positioned within the defect, it displaces adjacent landmarks inward. If too large a flap is used, it pushes the adjacent tissues outward, displacing normal facial landmarks and creating permanent asymmetry and malposition. Thus, missing tissue must be replaced in exact volume, depth, and outline. The solution is to design flaps from precise templates based on the contralateral normal or ideal, not the defect.

Second, it is helpful to alter a wound in site, size, shape, and depth when reconstructing units. The “subunit principle” is often applied in nasal reconstruction. If a defect encompasses more than 50 percent of a convex nasal subunit and a transposition flap is planned to resurface the nose, it is useful to discard adjacent normal tissue within the subunit and resurface the entire subunit, rather than only patching the defect. As originally described, the reconstructive implications of units and subunits did not distinguish clearly between peripheral and central units or among convex, flat, or concave subunits. Over time, it has become evident that the subunit principle should be applied to central convex subunits (seen in primary gaze and requiring contralateral symmetry between the normal and reconstructed side) when using skin flaps. Flaps pincushion; grafts do not. Trapdoor contraction occurs in the recipient bed under flaps (but not grafts). When an entire convex subunit is resurfaced, the pincushion effect created by wound maturation in the recipient site and around its 360-degree peripheral scar causes the flap to bulge, effectively augmenting the effect of cartilage support grafts in recreating a convex external unit shape. This avoids the patch-like trapdoor effect that may occur when a small flap is placed within part of the round tip or alar subunits. Flaps should often be designed to replace topographic units, not defects. This applies, primarily, to convex central units being repaired with a transposition flap— not to the dorsum or sidewall.

Third, the obvious temptation when repairing a composite defect is to fill the single defect with a single flap (often during a single operation). Unfortunately, it is difficult to reproduce the delicate three-dimensional character of multiple units with a single flap. Revisional procedures undertaken to divide a single flap into a cheek, lip, and nose usually fail. Frequently, the single flap appears as a bulging, oversized, stuffed patch. Geometrically, however, the shortest distance between two points is a straight line. In fact, a single large flap may represent a tissue shortage, rather than excess, which prevents the surface skin from following the required complex three-dimensional shapes of the nose, lip, and cheek. Scar contraction also draws a single flap into a dome-like mass, outlined by patch-like peripheral scars. Use of separate flaps (or grafts) for each facial unit should be considered when repairing composite defects.

Fourth, although contour is the primary determinant of normal, each unit is distinguished by its unique, geographic areas of skin color, texture, hair quality, and thickness. Donor materials should be chosen that most exactly replace each
Fifth, the difficulty in facial reconstruction derives from the unique character of the face. By necessity, distant free flaps have become a first choice for large, complicated wounds. Unfortunately, distant tissue does not match facial skin in color, texture, or thickness; nor does it have a facial shape. Distant skin always appears as a mismatched patch within residual normal facial skin. Thus, initially, free flaps should be supplied to a complex facial defect to provide bulk, protect vital structures, revascularize local tissue, and reestablish a facial platform. At a later stage, local tissues are used for aesthetic cover. Distant tissue provides for the “invisible” requirements (lining and support) but is not used to replace surface skin. Only local grafts and flaps “match” residual facial skin. Only local facial skin should be used to resurface the face.

Sixth, the nose sits on a platform of lip and cheek at a precise location and angle. Displacement of a successful nasal repair, even when malpositioned by only a few millimeters, can create significant distortion. It must be remembered that soft tissues frequently shift because of the early effects of resolving local anesthesia and edema, and the late effects of gravity, tension, and scar contraction. If the underlying lip-cheek platform is unstable, it may shift and drag a reconstructed ala inferiorly and laterally over time. The larger and deeper the defect, the greater the risk. Thus, in deep, larger defects, the lip and cheek should be repaired initially. Then, the nose is rebuilt at a later stage when the underlying platform is stable.

Seventh, surgeons frequently fail to appreciate the many advantages of surgical staging. Time permits a repair to “mature”—ensuring a stable platform, verifying vascular viability, and permitting the use of excess material for hinge-over flaps or other secondary applications such as delay or prefabrication, and intermediate soft-tissue sculpturing. “Difficult” facial repairs require a clear visualization of the desired end result and a carefully formulated plan before the initial surgical interven-

tion. Poor results lead to patient dissatisfaction, not the number of stages or the complexity of individual procedures. Time to observe and plan is vitally important. Define a goal, adopt a plan, and proceed in stages with the ideal in mind.

Eighth, late attempts to subdivide and shape a single, large, haphazard repair into individual units require overcoming the patient’s and the surgeon’s fear of “scars.” Traditionally, to “debulk” a flap, its edges are elevated in stages through peripheral border incisions. However, the exposure is poor; the “debulking” is vaguely planned and crudely performed during multiple stages over months. In fact, old scars should be disregarded. Using accurate templates based on the contralateral normal or ideal, the expected three-dimensional concavity of the alar crease or nasolabial fold is marked with ink and incised. Under direct view, the underlying soft tissue is delicately sculpted in three dimensions. The overlying skin is reaproximated to the newly contoured subcutaneous shaped framework with quilting sutures and the wound closed. Although a new “scar” is present, it lies “hidden” in the expected unit border outline. The old peripheral flap scar “disappears” because the visual shape of the unit is correct.

Ninth, cover and lining replacements must be thin and conforming so they do not bulge inward, obstructing the nasal airway, or outward, distorting the external shape. However, the primary determinant of facial shape is its three-dimensional middle architectural layer. Cartilage and bone grafts should be positioned during nasal repair before wound maturation to support, shape, and brace cover and lining against scar contraction. They can be placed primarily at the time of flap transfer or in a delayed primary fashion at an intermediate operation before forehead flap division. If placed secondarily, months later, the late fixed fibrosis of unsupported soft tissue prevents remodeling of the covering flaps during late revisions. Detailed three-dimensional sculpture of subcutaneous fat, frontalis muscles, and scar during the intermediate operation of a three-stage forehead flap nasal repair or when recreating the subtle contours of the alar crease and nasolabial fold during later revisions (disregarding old scars) is very helpful. Remember that surface contour reflects the underlying shape of the soft- and hard-tissue architecture and must be reestablished in three dimensions. Use primary and delayed
primary support and detailed soft-tissue sculpture to recreate facial three-dimensional contour.

**PATIENT STUDY 1: SUPERFICIAL COMPOSITE DEFECT OF THE ALA, LIP, AND UPPER LIP**

The defect after excision of a recurrent basal cell carcinoma of the left alar base extended into the adjacent subcutaneous tissues of the ala, cheek, and upper lip (Fig. 1, *above, left*). Each individual unit was reconstructed separately. The regional units of the nose and lip were outlined with methylene blue. The left nasolabial fold was incised and the residual lip skin was rotated medially and superiorly, resurfacing the upper lip and alar base (Fig. 1, *right*). The defect of the left ala was enlarged by excision of the remaining normal tissue within the left alar subunit. An exact pattern of the right contralateral alar subunit was outlined just above the left nasolabial crease. Because the residual cheek defect included the cutaneous portion of the nasolabial flap, the nasolabial flap was designed with a subcutaneous pedicle, perfused by axial perforators from the facial and inferior orbital arteries. A conchal cartilage graft was fixed to the residual lining with fine polypropylene sutures. It acted as an internal scaffold, maintaining rim support and alar contour. The flap was thinned distally to 3 mm of subcutaneous fat and transferred to resurface the entire alar subunit (Fig. 1, *below, left*). Three weeks later, after division of the pedicle, the residual cheek defect was closed by cheek advancement and the alar base inset completed. Months later, most of the

![Fig. 1.](image-url)
residual scars are hidden in the normal contour lines of the face. The three-dimensional character of the alar base is restored (Fig. 2).

PATIENT STUDY 2: DEEP COMPOSITE DEFECT OF NOSE, LIP, AND CHEEK

A more significant defect of a left ala, cheek, and upper lip is present after Mohs’ excision of a twice recurrent basal cell skin cancer previously treated by excision and later by radiation therapy. A modest amount of the superior orbicularis muscular sphincter has been excised. A repair is planned to replace missing tissues with like tissues, restoring each individual unit to its exact outline, size, and three-dimensional contour (Fig. 3, left).

When a full-thickness defect of the entire height of the upper lip is present, a cross-arterial Abbé flap that transfers skin, orbicularis muscle, vermilion, and mucosa is the first choice. However, if the upper lip loss is incomplete and the muscle sphincter in the inferior one-half of the lip is intact, a cheek skin flap and fat flap transposition can be used to fill the soft-tissue void in the superior lip anterior to the maxilla. Such a flap is static and provides no muscular function. The missing external skin is replaced with cheek skin and the soft-tissue defect is “filled” with local fat. Adjacent nasolabial skin can be transposed as an extension of a superiorly based cheek flap or as a nasolabial flap based on the subcutaneous perforators from the facial and angular arteries. Subcutaneous fat under the residual cheek, lateral to the defect, is hinged-over, like the page of a book, to provide missing bulk.

At the first stage, the regional units of the nose were outlined, as were the lip and nasolabial fold landmarks. The nasolabial fold was incised and the cheek elevated with 3 to 4 mm of subcutaneous fat. The underlying fatty soft tissue, based medially, was incised as a turnover flap and hinged-over to fill the soft-tissue defect anterior to the maxilla (Fig. 3, above, right). The cheek skin was then rotated superiorly and medially using a backcut at or above the commissure to resurface the cheek defect. The upper lip defect was resurfaced as a small extension of the cheek flap (Fig. 3, below, right). The lip-cheek platform was restored. Note that the left nasolabial fold was obliterated by the displacement of cheek skin within the lateral lip unit. The nose was not reconstructed at this initial operation.

One month to 6 weeks later, the platform was stable. The nose was repaired. Exact templates were made of the contralateral normal upper lip and ala. The upper lip template was used to mark the ideal width and position of the new alar base, sill, and nasolabial fold. Using the contralateral alar subunit template as a guide, the outline of the ideal left ala was marked, and residual normal skin was excised. Skin from the residual ala was hinged-over for lining. A primary cartilage graft, based on the contralateral normal ala, was designed to support and shape the reconstructed left ala. The same pattern was used to design a two-stage forehead flap that was transferred to resurface the entire alar subunit (Fig. 4). The forehead flap pedicle was divided 3 weeks later. Four months later, slight fullness at the junction of the left dome and ala was sculpted by reopening the anterior aspect of the alar unit incision. The ideal left nasolabial fold, based on a pattern of the contralateral normal ala, was marked and directly incised to allow subcutaneous sculpturing to restore the expected flat upper lip surface and the full nasolabial fold. The aesthetic contours of the lip, cheek, and nose join are satisfactory after repair.

The distracting scar of the cheek flap extension used to resurface the superior aspect of the upper lip has “disappeared” because the nasolabial crease, created by direct incision, has reestablished the expected facial contour (Figs. 5 and 6).

A massive recurrent basal cell carcinoma, originating in the right alar base and upper lip, required full-thickness excision of the right cheek, two-thirds of the upper lip, the entire columella, and the right ala and nasal sill (Fig. 7, left). Cover, lining, and support for the nose, lip, and cheek were missing. The aesthetic reconstruction of an upper lip full-thickness defect requires replacement of all missing components (cover, lining, and muscular support) with tissue that functions as a lip and cosmetically reestablishes a normal appearance. Only the lower lip has the surface appearance, form, and muscular function required for a major full-thickness loss of the upper lip. Such a complex defect of the nose, lip, and cheek must be reconstructed in stages with ideal materials.

The nasolabial fold normally extends inferiorly, lateral to the alar groove, and passes laterally around the oral commissure and into the mental crease. Thus, the nasolabial and submental folds were marked and incised. An inferior laterally based cheek flap was rotated to resurface the cheek defect. This restored the missing cheek skin and positioned the scar within the nasolabial fold and submental crease. The residual dog-ear at the upper end of the rotation would be revised at a later stage. The lining defect was closed primarily.
alar base, and columella. This full-thickness lower lip flap was incised and rotated 180 degrees on a 1-cm-wide pedicle based on the posterior vermilion and mucosa (Fig. 7, right). Two weeks later, at a second stage, the lip pedicle was divided. The dog-ear at the right infraorbital margin was excised. Unlike the traditional cross-lip Abbé flap, which is positioned to straddle the defect and to replace only one-half of the defect to limit lower lip deformity, this subunit flap is designed as an exact pattern of the missing tissue and in the mid-line of the lower lip, regardless of the site or size of the defect. On donor closure of the lower lip, symmetry of the lower lip and its commissures are maintained. Because the ala sits on a platform of the lip and cheek at a precise facial location and angle, no attempt was made to reconstruct the right ala at this time. Once the platform was stable, at a second stage 2 months later, the right ala was reconstructed as an exact subunit with a prefabricated right paramedian forehead flap designed from a template of the contralateral normal ala.

Eight months after the initial reconstruction, like tissue (nose, cheek, and lip) was replaced in kind. Border scars were positioned aesthetically and the orbicularis sphincter was reconstituted with an intact and symmetrical commissure and upper lip and lower lip symmetry. Spontaneous reinnervation of both sensory and motor function occurred within 1 year. The left nasolabial crease had been previously distorted by past excisions. The right upper lip was reconstructed to match it (Fig. 8).
Fig. 7. (Left) Defect after excision of the upper lip, columella, nasal sill, right ala, and medial cheek. (Right) At the first stage, the cheek is repaired with a laterally based cheek rotation advancement flap that follows the nasolabial fold into the submental crease. Based on a pattern of the left contralateral normal residual lip, a subunit cross-lip Abbé flap is designed and positioned in the middle of the lower lip. The lip flap includes additional tissue to replace the nasal sill and columella. At a second stage, based on a pattern of the contralateral left normal ala, a subunit reconstruction of the missing right ala is accomplished with a right paramedian prefabricated forehead flap for cover, lining, and support. (Reproduced with permission from Menick, F., and Burget, G. Nasal reconstruction: Creating a visual illusion. Adv. Plast. Reconstr. Surg. 6: 193, 1990.)

Fig. 9. Massive defect after squamous carcinoma of the septum and failed irradiation rhinectomy, medial maxillectomy, and total excision of the upper lip with an inadequate repair with fan flaps. (Reproduced with permission from Menick, F. Facial reconstruction with local and distant tissue: The interface of aesthetic and reconstructive surgery. *Plast. Reconstr. Surg.* 102: 1424, 1998.)

Fig. 10. *(Left)* At a first stage, the fan flaps are divided, a split rib graft is fixed to the maxillary tuberosities, and the oronasal defect is separated with a wraparound latissimus dorsi free flap and skin graft. *(Center)* At a second stage, excess skin and subcutaneous tissue of the latissimus free flap are excised. The lip unit is resurfaced with a right superficial temporal artery island hair-bearing scalp flap. Both cheeks are advanced to resurface the medial cheek defects. The major components of the lip and cheek units have been restored. *(Right)* During a third stage, nasal lining was supplied with a free radial forearm flap for lining that was covered externally with a split-thickness skin graft for temporary cover. Because scalp hair grew within the hairless triangles of the upper lip, both cheek flaps were further advanced to resurface the hairless triangles of the lip while maintaining hair-bearing scalp to create a mustache. Later, at a fourth stage, the split-thickness skin graft is discarded. A rib bone–cartilage dorsal cantilever graft and a columellar strut are positioned. (Reproduced with permission from Menick, F. Facial reconstruction with local and distant tissue: The interface of aesthetic and reconstructive surgery. *Plast. Reconstr. Surg.* 102: 1424, 1998.)
Fig. 11. (Above, left) Nasal cover is supplied with a paramedian forehead flap. (Above, right) At a fifth stage, during the intermediate operation of a three-stage forehead flap, the forehead skin is elevated with a few millimeters of subcutaneous fat. Underlying excess soft tissues are sculpted by excision. Delayed primary support grafts for the ala, sidewall, and tip are placed over thin lining. The forehead flap is returned to the recipient site. (Below) At a sixth stage, the forehead flap pedicle is divided. Disregarding all scars, direct incisions are made in the ideal nasolabial folds. The soft tissues are sculpted to restore the flat surface of the upper lip and the rounder, fuller surface of the medial cheeks, defined by the nasolabial crease. (Reproduced with permission from Menick, F. Facial reconstruction with local and distant tissue: The interface of aesthetic and reconstructive surgery. Plast. Reconstr. Surg. 102: 1424, 1998.)
PATIENT STUDY 4: MASSIVE CENTRAL FACIAL LOSS

A 69-year-old man presented years after radical nasectomy, bilateral partial maxillectomy, and total upper lip resection for a multiply recurrent squamous cell carcinoma of the septum unresponsive to previous radiation therapy, chemotherapy, and surgery. Bilateral fan flaps had been moved to recreate a soft-tissue upper lip partition. His palate remained unrepaired. His visible deformity, unintelligible speech, requirement for tube feeding, and constant drooling motivated repair (Fig. 9). Staged reconstruction using local and distant tissue was planned.4

At the first stage, the upper lip fan flaps were split. A rib graft was positioned “in the breeze” from one maxillary tuberosity to the other to provide central facial support and projection. This bony scaffold was covered with free latissimus dorsi myocutaneous flap anastomosed to the left facial vessels. The nasal “palate” surface was covered with back skin and the “oral” surface with a split-thickness skin graft. This separated the oral and nasal cavities and established a central midfacial platform (Fig. 10, left). At a second stage, soft tissue was sculpted by excision of excess latissimus skin and subcutaneous tissue to improve the contour of the cheek and upper lip. Bilateral cheek flaps were rotated and advanced to resurface the medial cheeks. A scalp flap based on the right superficial temporal vessels was passed under the right cheek flap to resurface the upper lip with hair-bearing scalp, allowing the later growth of a mustache (Fig. 10, center). At a third stage, a free radial forearm flap, anastomosed to the right facial vessels, was positioned skin inward to provide nasal lining. Its external raw surface was temporarily skin grafted. Hair-bearing scalp skin, which had been moved, within the normally “hairless” triangle of the superior lip medial to the nasolabial fold was excised, allowing the right and left cheek flaps to be further advanced to the expected junction of the hairless upper lip and mustache. Subsequently, the skin graft was excised, the free flap thinned for nasal lining, and an osteocartilaginous dorsal rib graft and columellar strut positioned to restore a central nasal support. This was covered with a left paramedian forehead flap (Fig. 10, right, and Fig. 11, above, left). At a later date, the forehead flap was elevated, soft tissue sculpted in an

Fig. 12. Postoperative result after free flap reconstruction of the face to supply a maxillary platform, oronasal separation, and nasal lining. Local facial tissues were used to resurface the nose, lip, and cheek. (Reproduced with permission from Menick, F. Facial reconstruction with local and distant tissue: The interface of aesthetic and reconstructive surgery. Plast. Reconstr. Surg. 102: 1424, 1998.)
intermediate operation, and further rib and conchal ear positioned to support the alae, sidewalls, and tip (Fig. 11, above, right). Subsequently, the forehead flap was divided. The ideal nasolabial fold was marked. Nasolabial creases were reconstructed by incising each cheek flap at the site of the ideal nasolabial fold and sculpting the subcutaneous tissues to recreate the contour of the expected hairless flat triangle of the upper lip and its border with the ideal full nasolabial fold (Fig. 11, below).

Postoperatively, the patient can speak clearly, maintain oral input, and no longer drools. The oral and nasal cavities are separated, facial projection is restored, and the expected contours and skin quality of a normal face are reestablished. He remains well 9 years after reconstruction (Fig. 12).

**DISCUSSION**

The first prerequisite for facial reconstruction is clear visualization of the goal and a commitment to achieve it. The entire repair should be intellectually planned, designed step by step, and laid out in a series of coordinated steps. General principles should be applied to successfully repair composite defects of the nose, lip, and cheek.

1. The alar base subunit must be precisely positioned on a stable, newly reconstructed platform.
2. Exact patterns based on the contralateral norm allow the correct positioning of landmarks and incisions and the exact replacement of missing tissues.
3. Preexisting scars can often be ignored. Contour is the primary determinate of what is normal, and direct incisions (disregarding old scars) often allow more precise subcutaneous sculpture.
4. Alter the wound in site, size, shape, and depth as necessary to recreate the expected units.
5. Avoid the use of “one hole” and “one flap” when reconstructing composite defects that encompass multiple facial units.
6. Use like tissues for like. Use local tissue for facial resurfacing and distant tissue for invisible needs.
7. Use primary and delayed primary cartilage and bone grafts to create a hard-tissue architecture, and use detailed subcutaneous sculpture to shape soft tissues into a middle supportive architecture during the intermediate operations of a three-stage forehead flap and during revisions.
8. Build in units.
9. Use surgical staging to advantage.

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**DISCLOSURE**

The author has no financial interest in any of the products, devices, or drugs mentioned in this article.

**REFERENCES**