The Nasofacial Sulcus as a Primary Donor Site for Full-Thickness Skin Grafts of the Nasal Alar and Distal Nose

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Because of the high incidence of nonmelanoma skin cancers occurring on the nose,[1] those involved in the surgical management of skin cancer frequently perform the repair of defects after tumor extirpation at this site.

Full-thickness skin grafting (FTSG), from a number of potential donor sites (Table 1), is a well-established, efficient, and commonly used repair technique for superficial defects of the alar nasi.[2] Reconstructive surgeons aim to choose a good tissue match (in terms of texture, actinic damage, and sebaceous quality) for the removed skin while also considering the repair of the donor site and any associated postoperative morbidity. Although adjacent skin optimizes tissue match between removed and grafted skin, it has been said that this is rarely a practical option for anything but the smallest of nasal defects[2]. Herein we describe the utility of the nasofacial sulcus as a primary donor site for FTSG repair of small to medium-sized defects of the alar and distal nose.

Figure 1A illustrates a superficial defect encompassing the entire left nasal alar after Mohs tumor extirpation of a basal cell carcinoma. The skin on either side of the junction of the nasal sidewall and medial cheek (along the nasofacial sulcus) was deemed to provide the best tissue match. An ellipse was designed to provide an appropriately sized FTSG and orientated such that, upon closure, the incision line would fall within the aforementioned nose–cheek junction.

Under local anesthesia, the ellipse was incised and the FTSG harvested and defatted in the standard fashion. It was trimmed to size and sutured in place with 6/0 polypropylene nonabsorbable sutures to be removed in 5 days. To stabilize the graft, minimize shearing forces, and maximize contact between the graft and the recipient wound bed, a nasal plug wrapped in paraffin impregnated gauze serving also as a bolster dressing was secured in place (Figure 1B). The donor site was closed primarily using buried absorbable vertical mattress sutures and 6/0 polypropylene surface sutures to the skin, also to be removed in 6 days. Judicious undermining enabling a relatively tension-free closure of the donor site, meticulous attention to wound edge eversion, and precise placement of sutures parallel to the free margins of the lower eyelid and ipsilateral alar rim ensure an optimal donor site scar.

There are a number of advantages of our proposed method. The nasofacial sulcus acting as the donor site allows the procedure to occur in a single surgical field. If required, a larger graft may be harvested

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TABLE 1. Reported Donor Sites for Full-Thickness Skin Grafts on the Nose

Donor site
Pre- or postauricular skin[6]
Burow's graft[2]
Supra- or infraclavicular[7]
Conchal bowl[8]
Glabellar[5]
Inner arm[2]
Nasolabial fold[4]

with greater ease than from the conchal bowl, for example. We have also found that, in elderly patients with hearing aids, the use of the conchal bowl as a donor site is not feasible. In addition, for deep alar defects, our proposed donor site has the added benefit of enabling volume replacement through the creation of a myocutaneous hinge flap, which may be elevated from the same elliptical excision and then resurfaced using a FTSG from the same donor site. (Under such circumstances, the inferior apex of the donor site ellipse should extend up to the highest point of the ipsilateral alar crease. Undermining of the lateral aspect of the ellipse at a subdermal level then allows a myocutaneous flap to be elevated as a transposition flap or as a hinge flap[3] and inset into the deep alar defect, providing volume replacement in addition to a well-vascularized wound bed upon which to place the FTSG.)

Aesthetically, by using skin in close proximity to the defect, the inherent benefits of tissue match are obvious, superseding that provided by potentially larger donor sites of the clavicular region or inner arm, for example. For this reason, in a review of FTSG on the nose by Silapunt and colleagues, Burow's grafts were seen to provide the best clinical outcomes.[2]

In some men, the hair-bearing potential of the melolabial skin may preclude it as a donor site.[4] In other patients, particularly women aged 30–50, the melolabial crease itself may be subtle, so creating a donor site scar in addition to the potential loss of the natural fat roll at this cosmetically sensitive area of the central face is best avoided (Figure 2).

Although our proposed donor site also creates a scar on the central face, like the glabellar skin, for example,[5] it can be well concealed at the junction of cosmetic units and, in our opinion, provides skin with a better match than that of the glabellar.

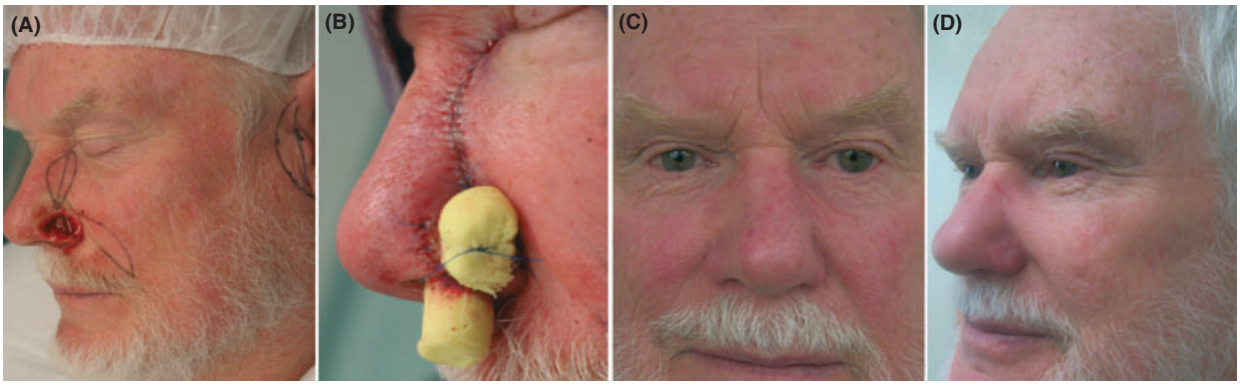

Figure 1. 1.3- × 2.1-cm Mohs surgical defect of the left nasal alar after removal of a basal cell carcinoma. Potential donor sites—nasofacial sulcus, melolabial fold, and preauricular skin—are marked. The nasofacial sulcus was assessed as providing the best tissue match for the removed alar skin. Note how the majority of the ellipse involves the nasal sidewall skin in an attempt to optimize the texture, sebaceous quality, and degree of actinic damage of the removed alar skin. (A) Full-thickness skin graft secured in place using a paraffin-impregnated gauze bolster dressing and nasal plug. (A 4/0 polypropylene suture is placed from one edge of the graft into the nasal vestibule and looped round the nasal plug. The suture is then passed back through to the external alar surface and tied on top of a bolster dressing, sandwiching the graft between the two pressure dressings as shown). (B) Four-week follow-up (no revision procedure performed). Frontal view: the donor site incision is barely perceptible. The incision line sits well at the nose–cheek junction. (C) Although the graft is somewhat prominent, even at this stage, the favorable color and texture match is evident.

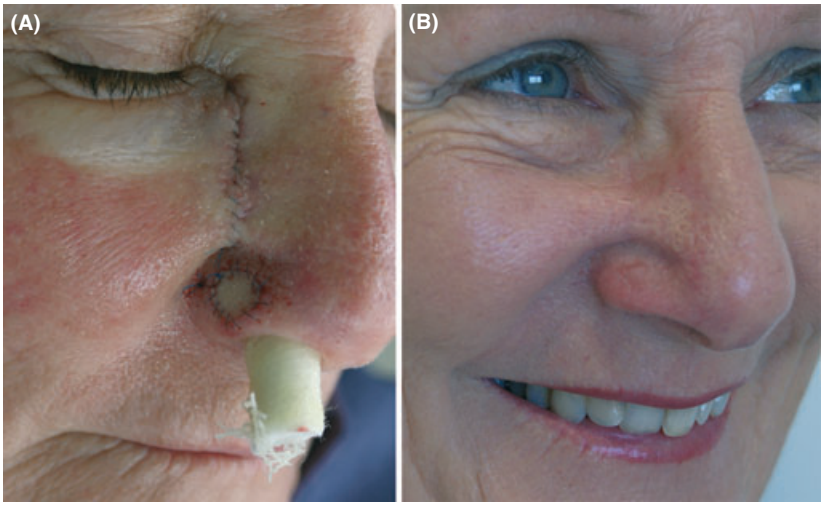

Figure 2. (A) Immediately at closure after a full-thickness skin graft repair harvested from the nasofacial sulcus. (B) Four-week follow-up (no revision procedure performed). The donor site scar is again well concealed. Avoiding the melolabial fold under such circumstances avoids the potential loss of the natural fat roll of this aesthetically important site.

There are a number of disadvantages of using nasofacial skin as a primary donor site for FTSG repair. This area may harbor potential skin cancer and, because of potential problems with the donor site, is best avoided in individuals who have seborrheic dermatitis. Furthermore, unlike the conchal bowl, allowing the donor site to heal by secondary intention is not practical.

In conclusion, the nasofacial skin provides reconstructive surgeons with a hitherto underreported valuable primary donor site when performing FTSG repair of the nasal alar and distal nose.

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