Reconstruction of Complex Nasal Dorsal Sidewall Defects

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ABSTRACT

Objective: To demonstrate improved outcomes of nasal sidewall defects through advancement of contralateral nasal skin and extended use of cheek flaps.

Numerous benefits were encountered by repairing nasal sidewall defects with contralateral nasal skin and extended cheek flaps, and the overall outcome in this series was felt to be superior to the results which would be expected with more traditional methods of repair.

INTRODUCTION

The nasal subunit principle, as put forth by Burget and Menick in 1985,1 is a well-accepted technique for achieving optimal cosmetic results in nasal reconstruction (Figure 1 & 2). Alone, the nasal subunit principle is insufficient and an experienced surgeon will also take into account other factors such as skin color, texture, contour, and sun changes.2,3 Through the process of balancing the doctrine of nasal subunits with these other factors, consistent and satisfying results are achieved.

With complex nasal sidewall defects involving greater than 50% of the subunit, the accepted approach is to resect the remainder of the involved subunit and then reconstruct the defect.1 Methods for reconstruction traditionally include skin grafts and regional flaps such as glabellar flaps and paramedian forehead flaps. These options allow for preservation of the nasal dorsal sidewall unit but fail short in that there is either a poor skin match, unsatisfactory scars on adjacent facial units, or increased morbidity with staged procedures. Our experience has shown that complex nasal sidewall defects are often best reconstructed with advancement of contralateral nasal skin and extended use of cheek flaps. We have also found that adherence to the nasal subunit principle is not necessary in the poorly defined nasal sidewall unit.

RESULTS

Fig. 1. Facial units including the nasal unit of which the nasal subunits of dorsum, tip, and right ala are a part.

Fig. 2. Nasal subunits including the dorsum, tip, columna, paired alae, sidewalls, and soft triangles.

Fig. 3. (Top row) Preoperative defect involving the nasal sidewall (Bottom row, left) Closure of defect. (Bottom row, right) Four-month postoperative result.

Fig. 4. (Top row) Preoperative defect involving the nasal sidewall, dorsum, tip, and ala. (Second row, right & third row, left) Closure of defect. (Third row, right) Postoperative necrosis of cheek flap. (Bottom row) Three-month postoperative result after readvancement of right cheek flap.

Fig. 5. (Top row) Preoperative defect involving the nasal sidewall, dorsum, tip, and ala. (Bottom row, left) Closure of defect. (Bottom row, right) Closure of defect. (Bottom row, left) Postoperative necrosis of cheek flap. (Bottom row, right) Repair with paramedian forehead flap.

Fig. 6. (Top row, left) Preoperative defect involving the dorsum and nasal sidewall. (Top row, right) Skin is marked for possible forehead flap versus extended cheek advancement flaps. (Middle row, right) Closure of defect. (Bottom row) Postoperative results one and a half years after repair.

Fig. 7. (Top row) Preoperative defect involving the nasal sidewall, ala, and cheek. (Bottom row, right) Three-month postoperative result.

Fig. 8. (Top row) Preoperative defect involving the nasal sidewall, dorsum, ala, and tip. (Middle row) Closure of defect. (Top row) Repair with paramedian forehead flap.

PATIENTS & METHODS

All patients were referred to the Geisinger Medical Center Facial Plastics Department for repair of Mohs defects. All patients in this series had a defect that involved more than 50% of the nasal dorsal sidewall, and in many patients this defect was more extensive, involving adjacent subunits. In particular, patients were selected who would traditionally be repaired using skin grafts or regional flaps such as glabellar flaps and paramedian forehead flaps.

In each patient, initial reconstruction was performed with extended cheek flaps and/or advancement of contralateral nasal skin. Postoperative results showing long-term outcome were included as available. For each patient, relevant medical comorbidities are documented and discussed.

DISCUSSION

Numerous benefits were encountered by repairing nasal sidewall defects with contralateral nasal skin and extended cheek flaps, and the overall outcome in this series was felt to be superior to the results which would be expected with more traditional methods of repair.

One advantage is that tissue from the cheek and contralateral nasal skin is an ideal match.2 Another advantage is that scars violating adjacent facial units are avoided. While the nose is foremost in prominence of the facial aesthetic units, preservation of the nasal unit at the expense of other facial aesthetic units should be avoided if at all possible. Additional advantages included a satisfactory outcome in a patient who was a suboptimal candidate for a paramedian forehead flap due to a low-lying hairline and the avoidance of staged procedures.

Two patients experienced necrosis of their flaps, with one patient who was tobacco-dependant experiencing complete failure of her flap. These patients demonstrate the limits of this random vascular flap.

The nasal subunit principle was often violated during the reconstruction of these nasal sidewall defects. This proved to be inconsequential.

CONCLUSIONS

In conclusion, for simple and complex nasal dorsal defects, cheek flaps with advancement of contralateral nasal skin is an alternative, and in many cases, a superior method of reconstruction over traditional methods.

REFERENCES