OLGU SUNUMU CASE REPORT

DOI: 10.5336/dermato.2018-60062

Extended Nasolabial Flap for Reconstruction of a Complex Nasal Tip and Columella Defect in an Elderly Polymorbid Patient

Polimorbid Yaşlı Bir Hastada Kompleks Burun Ucu ve Kolumellanın Esnetilmiş Nazolabial Flep ile Rekonstrüksiyonu

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Received: 05.02.2018
Received in revised form: 21.03.2018
Accepted: 28.03.2018
Available online: 11.07.2018

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ABSTRACT In this article, we describe an extended variant of the traditional nasolabial flap, utilized for coverage of a complex nasal tip and columella defect originated after basal cell carcinoma excision in a polymorbid elder patient. Although not the standard option for nasal tip coverage, the extended nasolabial flap proves to be an appropriate choice in the context of elder and polymorbid patients, achieving satisfactory results with a reduced surgical time and a simple technique. Therefore, in certain patients with large nasal tip defects with scars that impair the use of the paramedian forehead flap, or that reject the use of the forehead as donor site, or in cases of patients that require oxygen masks, the extended nasolabial flap could be the technique of choice.

Keywords: Nasal reconstruction; basal cell carcinoma; nose neoplasms; plastic surgery

ÖZET Bu makalede, polimorbid yaşlı bir hastada bazal hücreli karsinomun çıkarılmasından sonra burun ucu ile kolumelladaki kompleks defektin geleneksel nazolabial flebin genişletilmiş varyantıyla kapatılmasını sunuyoruz. Burun ucu kapatılmasında genişletilmiş nazolabial flep standart seçenek olmamakla birlikte, cerrahi işlemin süresini kısaltan ve basit bir teknik olarak polimorbid yaşlı hastalarda iyi sonuçlar alınmasını sağlamaktadır. Bu nedenle, paramedian önyüz flebin kullanımını imkânsız kılan skarlı burun ucu geniş defektlerde, donör yeri olarak önyüzün kullanılmasını kabul etmeyen hastalarda veya oksijen maskesi takılmasının zorunlu olduğu durumlarda en iyi seçenek "genişletilmiş nazolabial" flebtir.

Anahtar Kelimeler: Nazal rekonstrüksiyon; bazal hücreli karsinom; burun neoplazileri; plastik cerrahi

Basal cell carcinoma is the most common cancer in white-skinned people with increasing incidence rates worldwide.[1] Ultraviolet radiation is the major environmental risk factor for this type of cancer, but other environmental, genotypic and phenotypic characteristics have significant relation with its incidence.[2]

The complexity of the structure of the nose and its prominent position in the face makes it a very challenging region for reconstruction.[3] Classic flaps used for nasal tip defect coverage are the forehead flap and the dorsal nasal flap.[4] Although the nasolabial flap has not traditionally been considered the optimal option for tip reconstruction, certain types of patients and defect locations can benefit from its use, with minimal drawbacks respect to

classical flap options.[5,6] Until date, the use of the extended nasolabial flap has only been reported for the treatment of intraoral defects caused after oral submucous fibrosis excision.[7,8]

In this article, we report the case of an elder patient with a complex nasal defect affecting the nasal tip, columella and both alas, after basal cell carcinoma excision, which was successfully covered with an extended nasolabial flap.

CASE REPORT

We present the case of an 84-year-old woman that presented at our Plastic Surgery department for treatment of a recurrent basal cell carcinoma affecting both the nasal tip and columella (Figure1). As regards her medical records, she suffered from type II diabetes mellitus, arterial hypertension, chronic obstructive pulmonary disease requiring continuous oxygen therapy, and she had undergone a triple coronary bypass six years earlier.

SURGICAL TECHNIQUE

The tumour was resected performing Mohs surgery, resulting in a defect measuring 36x32 mm (Figure 2). The defect affected the nasal tip, the columella, and part of both nasal alas. The procedure was performed under general anaesthesia, and the defect was immediately reconstructed with an extended nasolabial flap after excision. The nasolabial fold was marked preoperatively with ink and the superiorly based extended nasolabial flap was designed, reaching the left jaw angle, with a shape and size adapted to the morphology of the defect. A thin plastic template was utilized to design the shape of the distal part of the flap. The defect template was also used to design a left ear conchal cartilage graft aimed to support, brace and shape the soft tissues of the flap. Medial and lateral ends of the cartilage graft were sutured to underlying remaining cartilages.

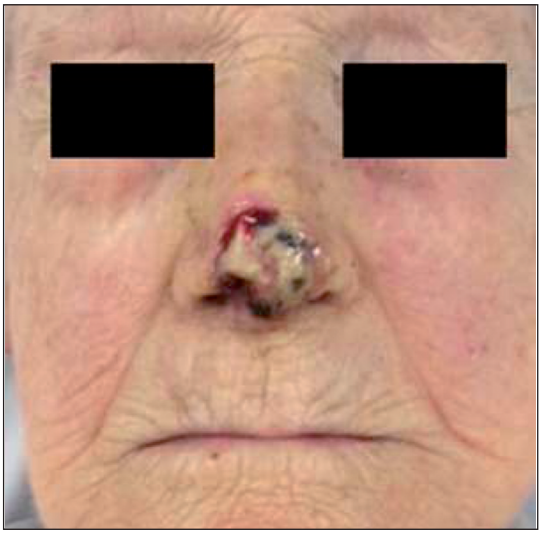

FIGURE 1: 84 year-old woman presenting at our plastic surgery department, suffering from a recurrent nasal basal cell carcinoma.

FIGURE 2: Aspect of the defect after tumor resection. The inset of the cartilage graft can be seen in this photograph.

The flap was incised and elevated starting from its distal part. Flap depth was increased as dissection proceeded proximally, leaving facial muscles undisturbed. When flap length was enough for its distal end to completely reach and cover the whole defect, it was sutured with one layer of 5-0 nylon simple stitches. The donor site was closed with subcutaneous stitches of vycril 3-0, and nylon 5-0 simple stitches for skin closure (Figure 3). The pedicle was covered with betadine gel ointment and gauzes. A second stage surgery was performed three weeks later under local anaesthesia, in which the pedicle was sectioned and the flap was thinned, readjusted and positioned. Optimal coverage of the defect was achieved, without the apparition of any complications, and with a satisfactory aesthetical

and functional result (Figure 4). No tumor recurrence appeared in 15 months follow-up.

DISCUSSION

The standard of care for nasal tip reconstruction promotes the use of forehead and dorsal nasal flaps, but certain features present in elder and polymorbid patients, such as the requirement of a continuous positive airway pressure mask or an oxygen mask, support the use of nasolabial flaps, providing this choice with at least the same priority as other options.[9] The continuous use of any type of mask for respiratory assistance could compress the pedicle of a forehead flap, with the potential risk of compromising the flap vascularization, and also, causing discomfort during the post-operative period. Also, patients with forehead scars, and patients that disregard the utilization of the forehead as a donor site would not be candidates for a forehead flap.[9] In the case of the dorsal nasal flap, despite being an ideal option for tip defect coverage, it is considered to be a poor choice for the coverage of complex defects that extend under the nasal tip-defining points.[10]

FIGURE 3: Aspect of the reconstruction six days after first surgery.

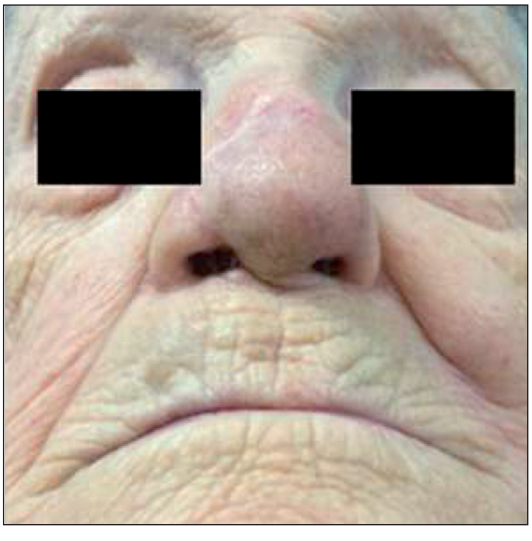

FIGURE 4: Final result, five months after last surgery.

The nasolabial flap is a traditionally supported option for use in alar, sidewall, columella and intraoral reconstruction.[5] Many features make this flap ideal for nasal reconstruction, such as the similarity in colour and texture to that of the nose, the proximity to the defect, and the low donor-site aesthetic morbidity, as the donor scar is concealed in the nasolabial fold. Notwithstanding, when facing a complex nasal defect that requires a larger flap for complete reshaping of the defect, the traditional nasolabial flap might not provide enough soft tissues, being the extended nasolabial flap a better reconstructive option for these cases. Vascularity of this flap provides it with a high level of viability. Its primary blood supply comes from multiple vessels originated from the facial and angular arteries; and because of its deep axial blood supply, a wide proximal skin pedicle is not necessary.[6] Tissue laxity present in elder patients make their cheeks a donor site capable of providing a wider amount of tissue than the traditional 2 cm of width traditionally described for this flap.[5,6] Also, the decreased surgical time required to perform a nasolabial flap is a remarkable aspect, in the context of a patient that presents a weak health situation.[9] The structural reinforcement provided by the cartilage graft provides the nasolabial flap with enough firmness to simulate the natural convexity of the nasal tip.

Although the extended nasolabial flap has already been described in scientific literature, its use for reconstruction of nasal defects has never been reported.[7,8] In fact, it has only been described for

the treatment of intraoral defects caused after submucous fibrosis excision.[7,8]

CONCLUSION

Although we do not consider the extended nasolabial flap as the first option for nasal tip reconstruction in every case, certain cases of complex nasal defects including tip affection, in elder polymorbid patients, patients requiring the use of mask devices for respiratory assistance, and patients in which the use of paramedian forehead flaps is not indicated, this option should be considered for reconstruction.

Informed Consent

This article does not contain any studies with human participants performed by any of the authors. The investigation has been approved by our Institutional Review Board, and we have obtained written informed consent from the patient.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Enrique Salmerón-González, Eduardo Simón-Sanz;* ***Design:*** *Enrique Salmerón-González;* ***Control/Supervision:*** *Elena García-Vilariño, Enrique Salmerón-González;* ***Data Collection and/or Processing:*** *Elena García-Vilariño, Enrique Salmerón-González;* ***Analysis and/or Interpretation:*** *Elena García-Vilariño, Enrique Salmerón-González, Eduardo Simón-Sanz;* ***Literature Review:*** *Elena García-Vilariño, Enrique Salmerón-González;* ***Writing the Article:*** *Elena García-Vilariño, Enrique Salmerón-González;* ***Critical Review:*** *Elena García-Vilariño, Enrique Salmerón-González, Eduardo Simón-Sanz.*

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