

## Modified Keystone Island Flap Design for Lateral Nasal Defect: Aesthetic Subunit Consideration

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Sir:

**D**escribed in 2003 by Behan,<sup>1</sup> the interest for keystone island flap continues to grow and gain followers, mainly in dermatological oncology.

Its 2-fold vascularization (perforating skin vessels and lateral by preservation of subcutaneous vessels on the edges) makes it a very reliable flap, and its innovative design is an excellent alternative to many local flaps. This flap allows one sometimes to get out of difficult situations, which previously would have required one to perform free flaps.<sup>2</sup>

The authors report their initial experience with the use of a modified keystone island flap procedure for lateral nasal defect on 5 patients (3 men and 2 women) aged between 70 and 84 years (mean, 74

years). In this indication, our preferred technique was originally the Rybka's flap.<sup>3</sup> All the defects resulted from prior basal cell carcinoma excision. The average defect size after debridement was 1.9 cm of diameter (range of 1.7–2.1 cm). It was type I keystone flap (KF), and the average time of flap harvesting was 12 minutes (range of 10–14 minutes) under local anesthesia. No temporary venous insufficiency was observed, nor suffering of the flaps or scar dehiscence. All flaps healed successfully, and the patients were satisfied with the aesthetic results.

All patients underwent a 1-stage procedure. Typically, we strictly avoid rotation or transposition flap in 1-stage for skin tumors. Instead, advancement flap as the KF will not modify the initial location of the tumor. Thus, in case of insufficient resection margins, or in case of recurrence, there is no risk of having modified the tumor location.

The KF is based on the random perforating vessels and does not require prior identification by an acoustic Doppler.<sup>4</sup> This makes it accessible to all practitioners quite easily. For the defects located on the lateral nasal sidewall, the KF will perfectly respect the aesthetic subunit as described by Burget and Menick.<sup>5</sup> The 2 V-Y advancement at each end reduce the longitudinal tension, creating skin laxity and allowing a direct closure. In some situations, this flap can avoid performing a forehead flap that is sometimes refused by patients.

We report the case of a 76-year-old man presented to clinic with a basal cell carcinoma involving the lateral nasal sidewall (Fig. 1). We performed excision margin of 4–5 mm. The defect was reconstructed using a modified keystone island flap, designed to respect nasal subunit principle. The KF offers the alternative to replace like with like and respect the aesthetic unit. Aesthetically, the scar is almost inapparent at 6 months follow-up due to placement between aesthetic subunits with a harmonious contour of the alar rim (Fig. 2).

We believe that this flap is difficult to adapt to defect larger than 2.2 to 2.5 cm, but we are convinced that in this very specific indication it has a place. Finally, the KF could be considered as a first-line option when direct closure is unfeasible.

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**Fig. 1.** A 76 year-old-man presented to clinic with a basal cell carcinoma involving the lateral nasal sidewall. Operative technique: the flap is designed according to the keystone island flap procedure. Laterally, 2 V-Y advancement at each end reduce the longitudinal tension, creating skin laxity and allowing a direct closure.



**Fig. 2.** Six-month postoperative result. We can see complete flap integration.

### DISCLOSURE

*The authors have no financial interest to declare in relation to the content of this article. The Article Processing Charge was paid for by the authors.*

### PATIENT CONSENT

*The patient provided written consent for use of images.*

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