

## Crescentic Nasojugal Flap for Nasal Tip Reconstruction

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**BACKGROUND** Carcinomas of the tip of the nose are very common, and the nasal tip defect is one of the most challenging subunit to reconstruct. There are numerous available procedures for the reconstruction of the tip of the nose. We have developed a flap for the management of a tissue loss from the tip of the nose and report the use of this flap for 11 patients.

**OBJECTIVE** The purpose of this presentation is to report a refinement of a nasojugal flap for the reconstruction of a nasal tip defect. The flap we describe has the characteristic of excising the dog-ear, created by the movement of the flap, in a crescent shape of skin in the perialar area, allowing the mobilization of the skin of the lateral surface of the nose and cheek.

**METHODS** Eleven patients presenting tissue loss from the tip of the nose after excision of carcinoma underwent surgery using the flap.

**RESULTS** The flap described constitutes a good alternative for reconstruction of nasal tip defect, up to 2cm of diameter, with excellent aesthetic results.

**CONCLUSION** Numerous flap options are available to reconstruct tissue loss from the tip of the nose. The nasojugal flap we describe, due to its great reliability, yields excellent functional and cosmetic results, and we believe that it is a valuable alternative to other techniques of reconstruction for defect of the nasal tip. For the 11 patients who underwent surgery with this flap, no major complication was reported. The aesthetic result was never compromised, and the scars result was very satisfactory.

*Jack Smadja, MD, has indicated no significant interest with commercial supporters.*

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In reconstruction of the tip of the nose, compliance with certain Basic principles is necessary to obtain the optimum aesthetic result. The principles are of three orders. The first is to very precisely determine the characteristics of the tissue loss: its topography, extent, and depth. The second is to replace the missing tissue by its best equivalent: the nearby nasal skin. The third principle is to comply with the aesthetic units of the nose, distinguished into aesthetic subunits by Burget and Menick,<sup>1</sup> and to locate the scars in the natural folds and grooves of the nose.

Nose tip reconstructions usually make use of local flaps, which have the clear advantage, versus skin grafting and secondary intention healing, to respect these three principles. The flap presented here is char-

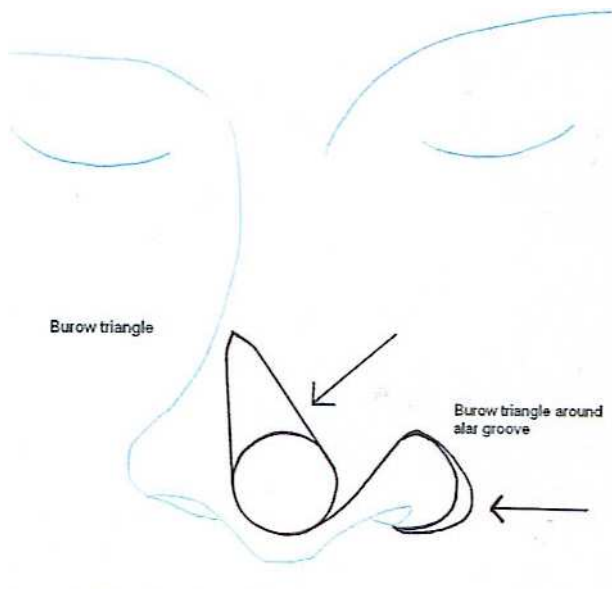
acterized by using a crescentic perialar skin excision, instead of a triangle, to enable the advancement of the cheek. This modified Burow's triangle is used to correct the dog-ear created by the movement of the flap (Figure 1). This flap replaces the initial tissue loss by adjacent skin using the tissue laxity of the skin of the lateral surface of the nose and cheek. It places the scars in the natural alar and alar-labial groove (Figure 2).

### Surgical Technique

The reconstruction presented herein has been conducted on 11 patients. The drawing (Figure 3) begins at the inferior part of the defect of the tip of the nose, continues in an arc shape to meet the alar groove, and then continues inferiorly in the alar-labial groove at its junction with the upper lip.

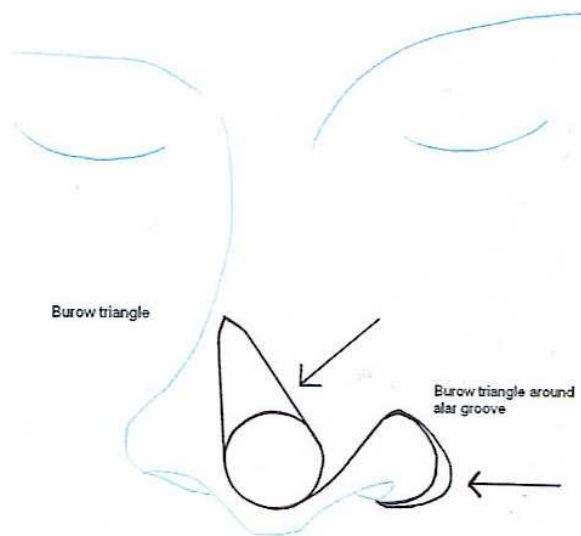
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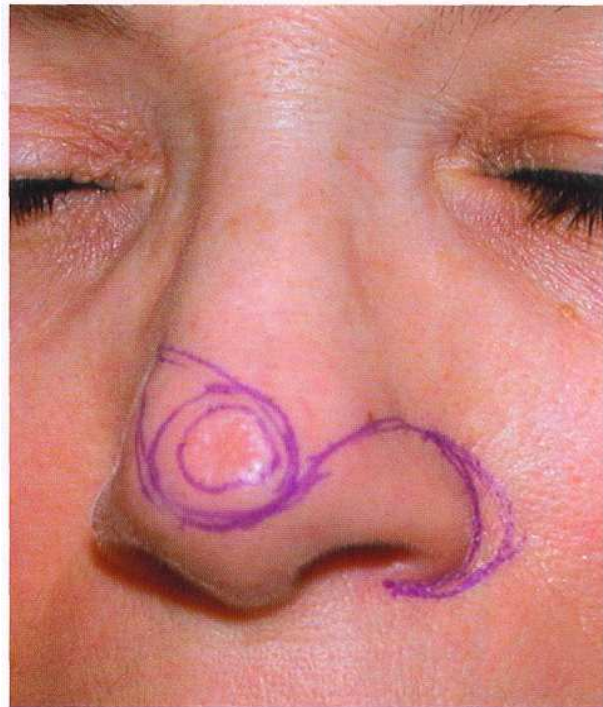


**Figure 1.** The drawing of the flap presented here allows the mobilization of the skin of the lateral surface of the nose and cheek thanks to an excised dog-ear, in a crescent shape taken from the skin around the alar groove. The upper dog-ear, created by the closure of the flap, is excised.

After having completely excised the skin tumor under local anesthesia, rounded tissue loss from the tip of the nose is present. The exact area and topography of the defect is determined. The relationships with other neighboring subunit, in particular with the columella, soft triangles, the alar nostril-sill, the



**Figure 2.** The final line of the closure of the flap.



**Figure 3.** The drawing begins at the inferior part of the defect of the tip of the nose and continues in an arc shape to meet the alar groove; it continues inferiorly in the alar-labial groove at its junction with the upper lip. . . .

sidewall, and the dorsal part of the nose, and with the deep alar cartilages are also determined.

The first incision follows the drawing, starting from the bottom of the middle part of the defect along the alar groove onto the cheek, and then turning all around the alar lobule ending at the alar labial groove. A deep submuscular dissection (Figure 4), below the nasal SMAS (superficial muscular aponeurotic System), is conducted from the lateral nasal surface and may extend to the junction part of the cheek. Debulking the nasalis muscle is not necessary.

As the flap is positioned, a superior dog-ear is created that requires excision. A second dog-ear around the nasal lobule, as a skin Burow's triangle, is excised in the shape of a crescent, to facilitate mobility of the cheek. The width of the crescent is adapted to the diameter of the tissue loss and the laxity of the skin (Figure 5).

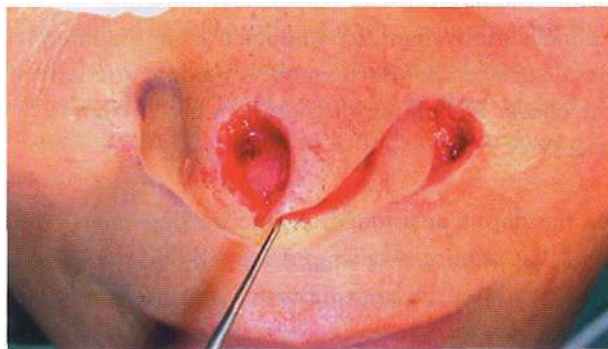


**Figure 4.** Undermining of the flap gives rise to little bleeding due to the submuscular cleavage plane.

The subcutaneous stitches are made with 5-0 poliglecaprone (Monocryl, Ethicon, Inc., Somerville, NJ) to close the cheek and the alar crease. Another 6-0 nylon (Ethilon, Ethicon, Inc.) is used to approximate wound edges.

**Results**

We report 11 cases, 6 men and 5 women, from 48 to 76 years old, who underwent surgery for basal cell



**Figure 5.** A skin Burow's triangle is excised, around the alar lobule, in the form of a crescent, to facilitate mobility of the cheek.



**Figure 6.** Follow-up at 20 days.

carcinoma of the tip of the nose with reconstruction using the crescent nasojugal flap. The follow-up period was ranging from 1 month to 4 years. Six defects were on the median site and five on paramedian site. Fives cases were on tip (Figures 6 and 7) of the nose and six on the supratip of the nose (Figures 8-12). The minor complications reported were restricted to simple ecchymosed or inflammatory reactions to the sutures. No necrosis of the tip of the flap and no cases of hematoma or infection occurred. In the longer term, the scars showed very marked attenuation and were almost imperceptible. No "trapdoor effect" was described.

An inevitable but minimal blunting of the upper cutaneous lip triangle near the lateral alarfacial sulcus is inherent to the design of this flap and has to be mentioned. It is masked, however, by the shade of alar lobule and has never been pointed out by the patients.

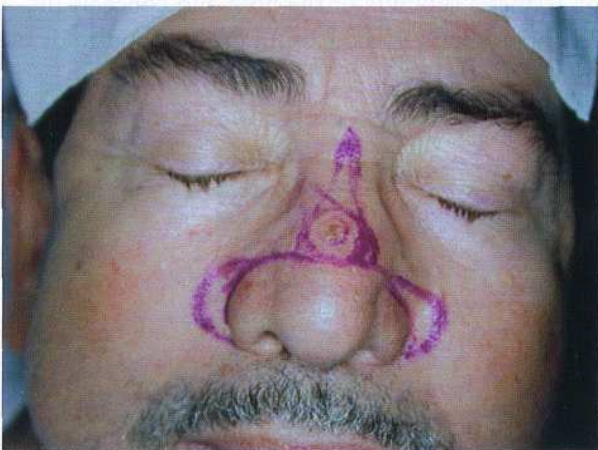


**Figure 7.** Frontal and oblique views at 10 months after surgery.

The postoperative period can be marked with a little distortion that resolved in less than 2 months. The flap shows a very satisfactory result in 11 cases with both respects of the aesthetic result and postoperative follow-up.

### Discussion

Webster<sup>1</sup> first described a perialar crescentic advancement flap for repairing the upper cutaneous lip defect. Many published articles involving nasal tip reconstruction discuss the advantages of flaps for



**Figure 8.** Skin cancer on the supra tip of the nose, if necessary the flap can be made on both side.

nasal tip defect.<sup>1-10</sup> Our flap described here is inspired by the flaps presented by Snow and coworkers,<sup>3</sup> Yoo and Miller,<sup>4</sup> and Wheatley and coworkers.<sup>5</sup> The refinement brought here is the crescent shape



**Figure 9.** Elévation of the nasal flap.



**Figure 10.** Closure of the crescent alar defect.

resection of the Burow's triangle all around the alar groove that will allow the advancement of the flap to the tip of the nose and hide the scar in the alar groove.

The vertical or oblique part of the scar, along the ridge of the nose, is located in the most luminous area of the tip of the nose where no



**Figure 11.** Closure of the superior Burow's triangle.

shadow is projected. It thus becomes very unobtrusive. This flap is indicated in the reconstruction of superficial tissue losses not exceeding 20 mm in diameter and located in the nasal tip of the nose on the median and paramedian site.

The vascular network of the nose and the large pedicle of the flap are promoting very good viability at the tip. It has numerous positive points in the context of this type of reconstruction, particularly in that it uses the skin adjacent to the initial tissue loss. The flap complies with the principles of aesthetic subunits of the nose and conceals the secondary scars in the natural grooves and folds of the alar.



**Figure 12.** Follow-up at 4 years, front and side view.

## Conclusion

Defect of the tip of the nose is still a real challenge to reconstruct. Great variety of techniques and flaps had been described in this localization. The crescentic nasojugal flap presents the refinement of using a Burow's triangle in a shape of a crescent around the alar lobule that allows the mobility of the adjacent skin. The crescentic nasojugal flap used in 11 cases of nose tip reconstruction achieved excellent aesthetic and functional results with no major complications.

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