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## BRIEF COMUNICACION

# Repair of Nasal Tip Defects Using the Crescentic Nasojugal Flap: A Series of 13 Cases<sup>☆</sup>



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### KEYWORDS

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### PALABRAS CLAVE

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Colgajo quirúrgico;  
Procedimiento  
quirúrgico;  
Reconstrucción punta  
nasal

**Abstract** Reconstruction of the tip of the nose following the excision of skin cancer is a cosmetic and surgical challenge. We propose using a crescentic nasojugal flap, also known as a perialar crescentic advancement flap, to repair such defects. We present a series of 13 cases in which cutaneous carcinoma (mostly basal cell carcinoma) was excised from the lateral nasal tip with clear margins and the defect repaired with a crescentic nasojugal flap. The technique was successful in all cases. None of the patients developed notable surgical complications and the postoperative outcomes were satisfactory, with no significant functional or cosmetic problems. The crescentic nasojugal flap is therefore a good option for repairing medium-sized defects on the tip of the nose.

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### Colgajo crescéntico nasoyugal en la reconstrucción de defectos de punta nasal: una serie de 13 casos

**Resumen** La reconstrucción tras la extirpación de neoplasias cutáneas localizadas en punta nasal supone un reto cosmético-quirúrgico. Proponemos el colgajo crescéntico nasoyugal, también conocido como colgajo perialar en semiluna, como recurso quirúrgico para la cobertura de estos defectos. Presentamos una serie de 13 casos de carcinomas cutáneos, en su mayoría carcinomas basocelulares, extirpados con bordes libres, localizados en región excéntrica de punta nasal en los que la reconstrucción se realizó mediante este colgajo. Los 13 pacientes

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presentaron buena evolución, sin presencia de complicaciones quirúrgicas reseñables junto con resultados postquirúrgicos satisfactorios. No se objetivaron alteraciones funcionales y estéticas significativas. Por consiguiente, el colgajo crescéntico nasoyugal constituye una adecuada opción reconstructiva para la cobertura de defectos de tamaño medio de punta nasal.

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## Introduction

Crescentic nasojugal flap was described by Smadja<sup>1</sup> in 2007 as a new approach for closure of defects on the tip of the nose. Reconstruction after excision of carcinomas on the tip of the nose is a cosmetic and surgical challenge. The aim of this study was to present a surgical alternative that uses skin from the side of the nose to cover defects in the tip.

## Material and Methods

We present a series of 13 patients with skin tumors on the nasal pyramid who underwent surgical excision with disease-free margins in a major outpatient surgery setting under local anesthesia and sedation. In all cases, reconstruction was performed by crescentic nasojugal flap to close defects in an eccentric position on the tip of the nose.

## Results

Thirteen patients were included, 7 women and 6 men, with a median age of 82 years (range, 59 to 94 years) and diagnosis of nasal skin cancer. On recording personal history, particular attention was paid to diabetes mellitus, hypertension, and anticoagulant and antiplatelet agents. Two patients had diabetes, 8 were hypertensive, and 4 were receiving anti-coagulant or antiplatelet agents (1 was using antiplatelet agents and 3 direct-acting anticoagulants) out of a total of 12 patients (the personal history of 1 of the patients was not known).

Twelve of the patients underwent the intervention for histologically-confirmed basal cell carcinomas and 1 patient had a pathological diagnosis of squamous cell carcinoma. The tumors were located in eccentric regions of the tip of the nose. In two patients, the carcinomas extended towards the dorsum (Fig. 1, patient no. 10) and the ipsilateral nasal ala. The flap even enabled reconstruction of 2 defects created after simultaneous excision of the corresponding carcinomas on the nasal pyramid: Case 1, Defects on the left tip of the nose and contralateral nasal ala (Fig. 1, patient no. 8); and Case 2, Left tip of the nose and ipsilateral nasal dorsum (Fig. 1, patient no. 4). The maximum size of the defects reconstructed in eccentric regions of the tip of the nose was 4 cm, including cases with presence of concomitant nasal tumors and/or those that had spread beyond the esthetic subunit of the tip of the nose. More specifically, the defects with greater size had diameters of 1 × 4 cm and 2.5 × 3 cm (Fig. 1 patients no. 4 and no. 10).

Good outcomes were obtained with the flap in the 13 patients, with no surgical complications of note, that is, no signs of skin impairment, and with satisfactory wound healing. However, mild postoperative complications were observed in 4 of the 13 patients: 2 cases of surgical wound dehiscence and another 2 cases with presence of inflammation and/or congestive appearance of the flap requiring prophylactic antibiotics. The patients with reconstruction following excision of 2 carcinomas were prescribed oral antibiotic prophylaxis (cefalexin 500 mg every 6 hours for 7 days) on discharge given the extent of the excised area, their history, and the duration of the intervention.

The postoperative outcomes were satisfactory, with no significant functional or esthetic impairment (Fig. 1). Although it is true that mild asymmetry of the nasal fossae was observed in some cases, this was considered acceptable given the large size of the defects created (see supplementary material).

## Discussion

The nose, given its projection and central site, is more exposed to sunlight and therefore more susceptible to developing skin cancer.<sup>2</sup> On the other hand, the nose is one of the most important facial features. Therefore, reconstruction after excision of carcinomas, specifically those located on the tip of the nose, present a cosmetic-surgical challenge. The reconstructions follow 3 basic principles<sup>1</sup>: 1, Determine the characteristics of the excised tissue (localization, extension, and depth); 2, Cover the defect with its best equivalent, which is usually skin taken from adjacent nasal skin; and 3, Respect the esthetic subunits established as described by Burget and Menick.<sup>3</sup>

Crescentic nasojugal flap,<sup>1</sup> also known as halfmoon perialar flap, consists of an advancement flap, based on the horizontal J rotation flap, described by Snow et al.,<sup>4</sup> the crescentic advancement flap described by Yoo and Miller,<sup>5</sup> and the modified nasal flap described by Wheatley et al.<sup>6</sup> This flap enables the surgeon to cover defects on the tip of the nose, whether eccentric or medial using skin from the side of the nose and cheek. The design is based on a main direction of movement in form of a sine wave, previously described by Hussain.<sup>7</sup> The surgical technique is as follows (Fig. 2).

1. The first incision starts in the lower pole of the resulting circular defect, and is directed towards the alar groove then goes around the nasal alar until reaching the nasolabial groove. This was how it was originally described by Smadja,<sup>1</sup> although in clinical practice, we



**Figure 1** Clinical images that show the design and postoperative outcome of reconstruction by means of crescentic nasojugal flap in 10 patients after excision of carcinomas from the tip of the nose.

usually shorten the length of incision, cutting up to half of the nasal ala or the start of the nasogenian fold.

2. A deep submuscular incision should be made below the aponeurotic muscle plane, extending from the lateral face of the nose to the cheek.
3. When mobilizing the flap, we should triangulate the defect in the upper part and eliminate the contralateral perialar halfmoon, though this is not strictly necessary.

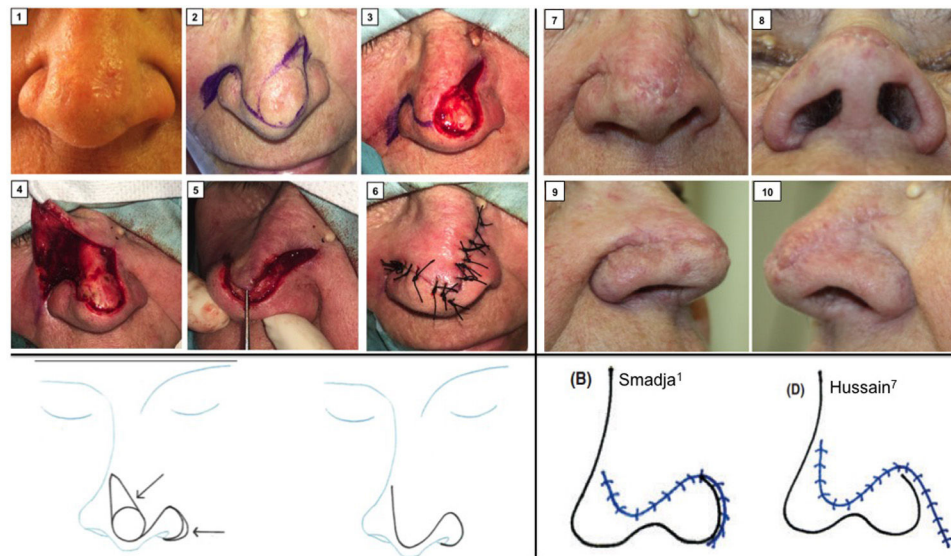
Both the crescentic nasojugal flap<sup>1</sup> and the sine wave flap described by Hussain<sup>7</sup> have the same main line of movement. The main difference lies in the localization of the discharge triangle. Whereas the crescentic nasojugal flap<sup>1</sup> locates the halfmoon of the discharge triangle in the perialar region, the wave flap localizes the triangle of Burrow in the nasogenian fold (Fig. 2). Therefore, this approach avoids modification of cosmetically important areas such as the api-

cal triangle of the upper lip and the nasal ala. However, in our experience, on making the perialar incision to half of the ala and/or start of the nasogenian fold, a few times we have needed to excise the discharge halfmoon. Of note, on those occasions in which they have been excised, the incisions are hidden under natural folds, without any significant observable cosmetic changes.

## Conclusion

Many different types of flap can be used to cover defects on the tip of the nose. The crescentic nasojugal flap has good esthetic and functional outcomes without notable postoperative complications and with satisfactory wound healing, while maintaining esthetic nasal subunits intact. It is therefore an appropriate option for reconstruction of defects of up to 4 cm on the tip of the nose.





**Figure 2** Clinical images that show the surgical technique for performing the crescentic nasojugal flap (1-6) and the postoperative outcome after 1 month (7-10). Bottom left: Image from the article by Smadja<sup>1</sup> showing the schematic of the crescentic nasojugal flap. Bottom right: Image from the article by Hussain<sup>7</sup> showing the scars resulting from performing crescentic nasojugal flap (B)<sup>1</sup> and the sine wave flap (D).<sup>7</sup>

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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## Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.ad.2019.07.009>.

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