



## PARANASAL FLAP FOR NASAL ALAR LOBULE AND MARGIN RECONSTRUCTION: A CASE REPORT

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### 1. INTRODUCTION

The nasal ala is a paired part of the nostril that is vital for maintaining nasal symmetry and functionally important in the maintenance of the nasal opening. Defects of the nasal alar region are challenging and difficult to reconstruct, given its complex structure. Successful repair of these defects needs to provide aestheticsymmetry and preserve nasal function.<sup>2</sup>

Advantage of the paranasal flap is a donor site that is a good match for the ala and lacks terminal hairs. Additional advantages have become evident with time. First, the axis of rotation is 90 degree or less, thus necessitating a shorter flap and placing less torsional constriction on the flap's vascular pedicle. This is a novel flap whose use is in patients with small-medium defects. The advantages include excellent final cosmetics with regard to contour, color, texture, lack of hair transfer, minimal risk of alar margin distortion and cheek asymmetry, and overall lower morbidity.<sup>1</sup>

### 2. MATERIALS AND METHODS2.1 PATIENTS

Patient reported to the OPD of Department of OMFS, Mahatma Gandhi Dental college and Hospital. The patient gave history of RTA on 18<sup>th</sup> Nov. 2021. The patient collided with a car and fell on road which lead to laceration over the right nostril.

Examination revealed a structural deficit and partial loss of the right alar region and of the columella as well as the part of nasal lobule . A scar on the right alar crease, extending into the nasal vestibule, was retracted, additionally de-forming the region, leading to reduction of nasal cavity volume to less than half. (FIG.1 )



**FIG 1. – Preoperative picture showing right nasal deformity**

## **2.2 Treatment planning**

Reconstruction of nasal – alar defect is based on the depth of the defect and size of the defect.

Here the defect is due to loss of tissue (<1cm), reducing the right nasal cavity less than half and scar tissue formed due to secondary healing at the center of nasal lobule involving alar margin.

Since it is a case of late revision, dimension and volume are incorrect. An additional operation to further refine the nasal landmarks, such as the alar crease, may be required through direct incisions later on.

The main indications and considerations that need to be taken into place are:

1. The vertical height of the alar wound must be equal to the horizontal distance of the flap's design in the paranasal region.
2. The mobility of the medial cheek and native eyelid position and tone must be carefully assessed.
3. Facilitate a good donor closure

Relative contraindications: excessive lower lid laxity or lack of adequate donor site reserves, who have had recent surgery in the area of the flap donor site, poor mental status who may be prone to disassembling interpolation flaps

## **2.3 Developing and placing paranasal flap**

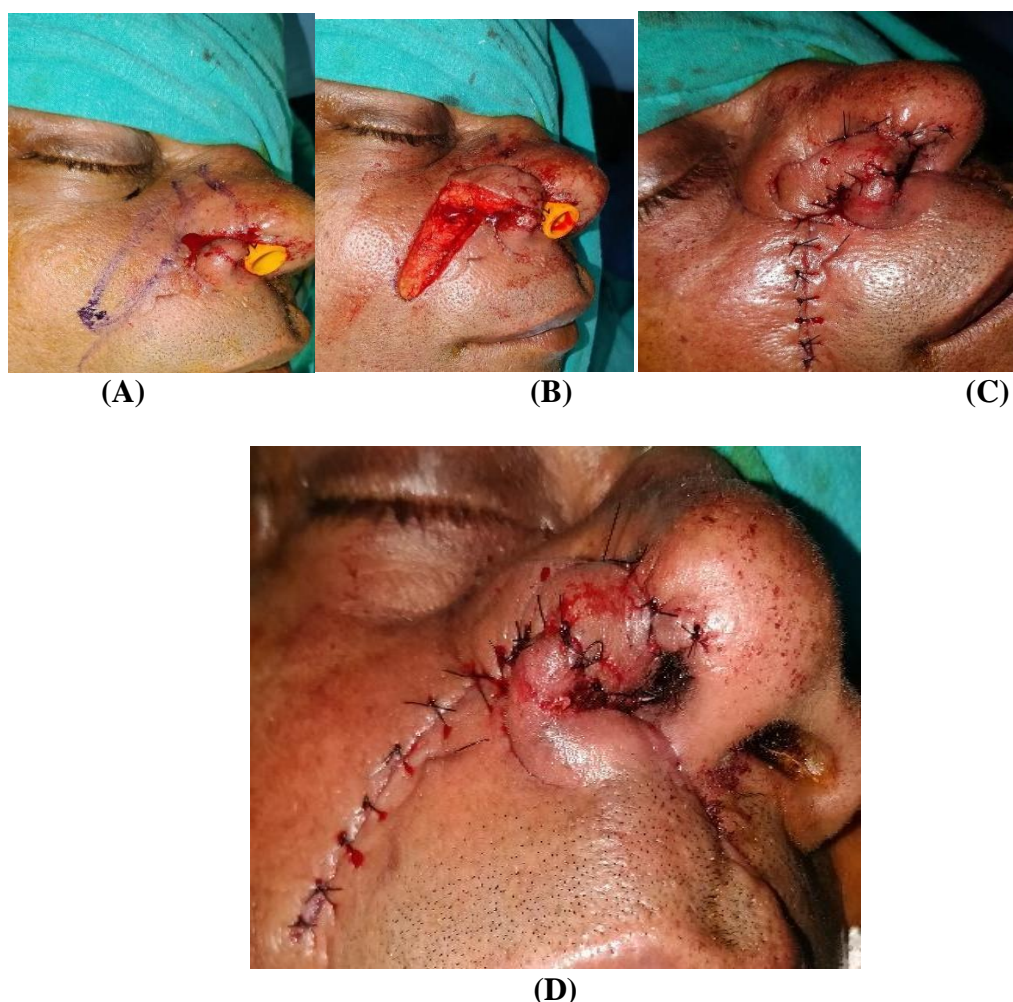
Patient was operated under general anesthesia. Patient with right nasal deformity involving nasal ala and alar margin due to trauma. Right nasal deformity constriction was released, marking of paranasal flap done on right side and rotational flap was raised, debulking and inset done on right side to cover and correct the nasal deformity and secured. Nasal packing done on right side with rubber stent.

The paranasal flap is a random-pattern flap that loosely derives its vascular supply from branches of the angular arterial branch of the facial artery. The medial incision of the flap is originated immediately lateral to the alar margin, carried cephalad in the melolabial fold, and continued cephalad in the nasofacial sulcus. (In cases in which more tissue width is needed, it is advantageous

to place this incision medial to the nasofacial sulcus and thus center the flap around the nasofacial sulcus.) The length of the flap must account for rotational shortening and the limitations of movement due to the preserved vascular pedicle. The lateral flap incision essentially parallels the medial incision. The width of the flap is equal to the height of the alar defect. At the cephalic end of the flap, the medial and lateral incisions are tapered toward each other to create a standard 30 degree taper. Beginning at the cephalic end of the flap, undermining is performed at a depth that will create a flap that is slightly thinner than the recipient site.

The recipient site, scar tissue is removed and the margin are freshened up to produce bleeding margins. Interrupted sutures are used to finely approximate the epidermis of the flap and the recipient site. Sutures are taken out 10 to 14 days after the first stage. Division and inseting, is usually performed at 4 weeks after initial reconstruction.

The groove at the lateral alar must be preserve; thus, the paranasal flap shall be used in an interpolation manner. Local flaps should be designed in a manner that they do not cross the borders that separate aesthetic regions, especially if the border's topography is concave similar to the alar facial sulcus<sup>3,4,5</sup>.



**FIG 2. – Intra operative pictures (A) paranasal flap markings on right side offace (B)paranasal flap approximation to recipient site (C)and closure done using 4-0 ethilon by simple interrupted sutures.**



**FIG.3** – 2 months postoperative pictures (a) and (b)

### 3. DISCUSSION

Paranasal flap is a local flap for nasal reconstruction especially alar part. Cosmetic reconstruction of the alar region is difficult due to its three dimensional anatomy.

The size of defect precludes the use of local flap. Still interpolated melolabial flap and paramedian forehead flap is primary choice in most patient needing subtotal alar replacement.

Paranasal flap can be considered in cases with minimal, small to medium alar defect in nasal reconstruction.

### 4. CONCLUSION

- With the use of para-nasal flap satisfactory aesthetic result were obtained and the donor site scar was well hidden in the naso-labial fold.
- It is a novel flap whose primary use will be in patients with small to medium defects of the nasal ala and alar margin.
- The advantages include good cosmetic result with regard to contour, color, texture, lack of hair transfer, minimal risk of alar margin distortion and of striking cheek asymmetry, and overall lower morbidity than other flaps.

### 5. REFERENCES

1. The Interpolated Paranasal Flap: A Novel and Advantageous Option for Nasal-Alar Reconstruction GALEN H. FISHER, MD, AND JOEL W. COOK, MD DOI: 10.1111/j.1524-4725.2009.01106.x
2. Comprehensive Algorithm for Nasal Ala Reconstruction: Utility of the Auricular Composite Graft Collin Chen, MD,<sup>1</sup> Ruchin Patel, MD,<sup>1</sup> and John Chi, MD<sup>1</sup> DOI: 10.1055/s-0038-1639581
3. Shan R. Baker Chapter 12: Melolabial Flap in Local Flaps in Facial Reconstruction (2nd Ed.), Elsevier, China (2007)
4. Berish Strauss, Luis O. Vasconez, Charles K. Herman, Bernard T. Lee Grabb Encyclopedia of Flaps Head and Neck Volume One (4th Ed.), LWW (2015)
5. S.R. Baker, T.M. Johnson, B.R. Nelson The importance of maintaining the alar facial sulcus in nasal reconstruction Arch.Otolaryngol. Head Neck Surg., 101 (1995), p. 617