



Case Report

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Modified Para-Median Forehead Flap Reconstruction for Nasal Defects

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Abstract:

Background:

Nasal reconstruction has been one of the most challenging procedures in reconstructive plastic surgery, the modern-day forehead flap has developed as a result of improvements in technique.

Material and Methods:

We selected a case report from one of the patients admitted in our clinic 2021, who came presented with extensive columellar defect that resulted from previous rhinoplasty, which presented a great candidate for paramedian forehead flap reconstruction.

Conclusion:

We used a flap that was only supported by the left supratrocheal artery, allowing us to rotate the flap without distorting the vessels.

In such cases, the modified paramedian flap is still the safest aesthetically and functionally for the patient, to achieve good coverage with the smallest donor site defect possible.

Introduction

Nasal reconstruction has been one of the most challenging procedures in reconstructive plastic surgery. Minor nasal defects may be sutured closed or covered with small local flaps or skin grafts. However, in the case of large nasal defects, a greater source of color and texture matching tissue is needed to ensure functional and aesthetic outcomes.¹

Therefore, the paramedian forehead flap is the ultimate reconstructive method for repair of extensive nasal defects.²

Sushruta Samita presented the first nasal reconstruction using forehead flaps in 600 B.C. Specialists have known since ancient times that the forehead is an ideal donor site for nasal defects, with a strong color and texture match.³

Because of its vascular support, it is extremely versatile. The paramedian forehead flap is an axial flap on the medial side of the eyebrow that is centered on a single supratrochlear/supraorbital artery and is centered on the supraorbital or supratrochlear arteries. A central broad pedicle with both supratrochlear vessels is used in the conventional median forehead flap procedure.⁴

For a variety of reasons, preoperative evaluation is extremely crucial in forehead flaps. There are two types of evaluations. The first is to determine if the flap is feasible for the specific patient. The second group involves determining what needs to be accomplished in order to successfully correct the defect. What donor resources are available to aid in the reconstruction, and what are the drawbacks of the donor tissues.⁵

Case Report

A 27 years old female came to our clinic presented with a total columellar defect after undergoing 7 rhinoplasties in several different clinics.

In order to mark the flap the Doppler device was used to locate the arterial supply.

After marking the flap the patient underwent general anesthesia and then was locally anesthetized in the areas of incision.

The incision was done using a blade (15) in the forehead to harvest the paramedial flap from the left side that is supported by the supratrocheal artery, then an endo-nasal incision and pointed scissors for subperiendocondrial dissection was done to obtain a path for the graft from inside the nose, this modification has several advantages:

- Huge improvement in the psychological well-being of the patient due to the invisibility of the flap.
- The flap guided internally was functioning aesthetically as a bridge for the nose.

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Epithelialization of the flap to be placed inside the nose as a septal graft.

After the graft was placed at the base of the medial crus it was sutured with 5.0 vicryl and the frontal skin was closed with 3.0 vicryl and 5.0 vicryl and dressed with sterile strips.

Locating arterial supply



Figure.1. Accurate monitoring of tissue perfusion in microvascular surgery is paramount to flap survival. Many methods have been proposed for monitoring of flaps, but none have achieved widespread acceptance. The laser Doppler has been shown to be beneficial in monitoring flap perfusion.

Doppler device was used to locate the arterial supply.

Marking the incision



Figure.2. Marking the incision



Figure.3.

Incision:



Figure.4

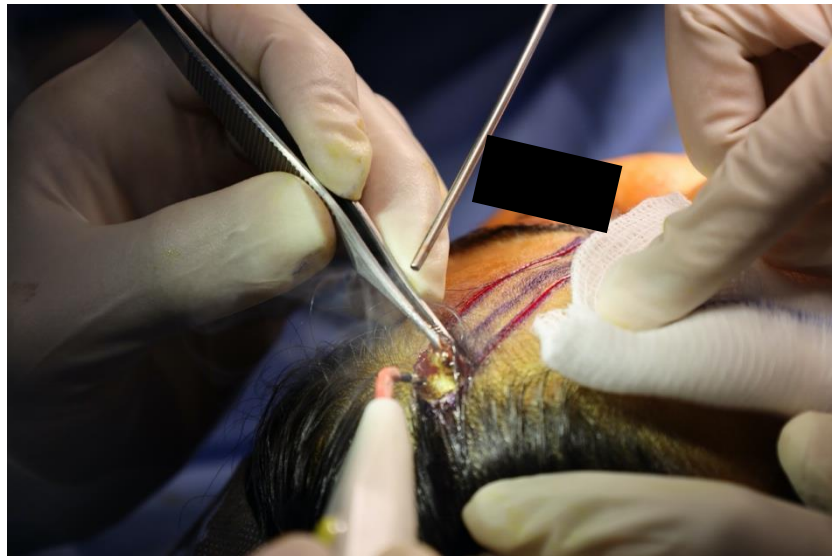


Figure.5.

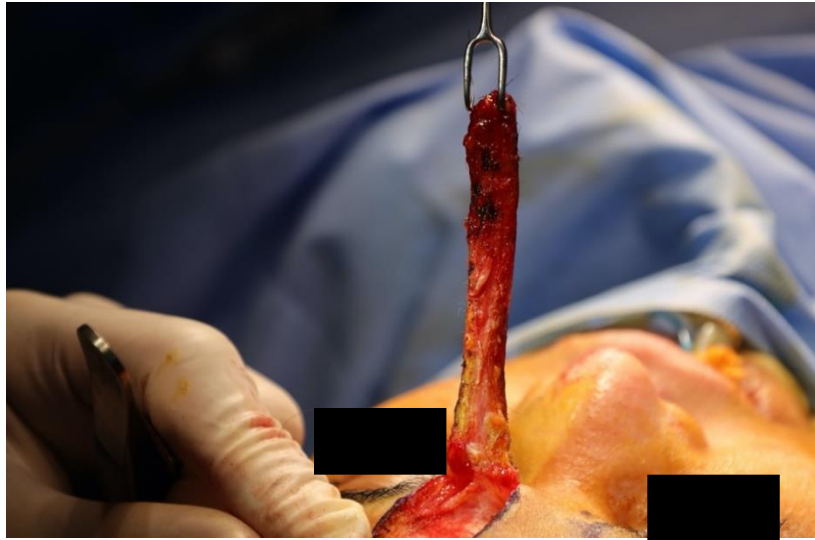


Figure.6.





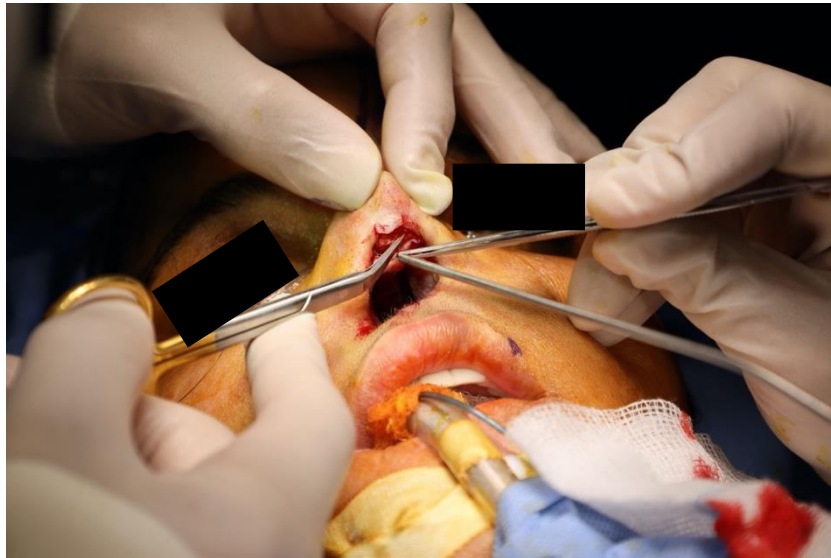




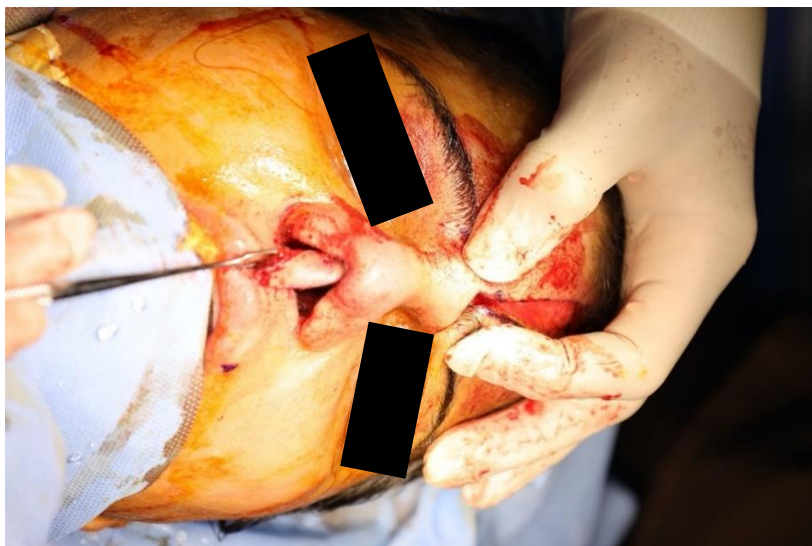
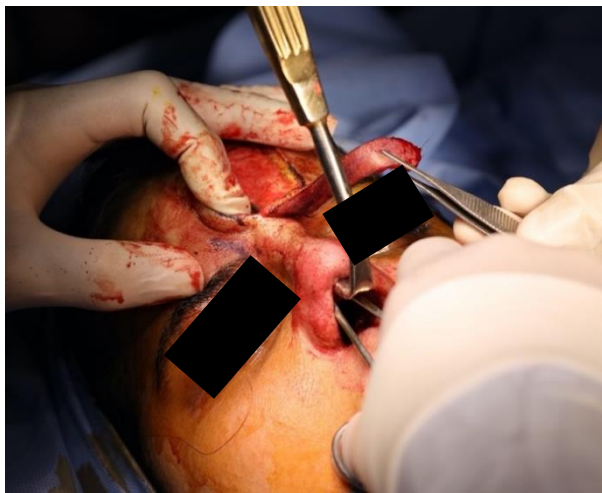
Endonasal incision and dissection:





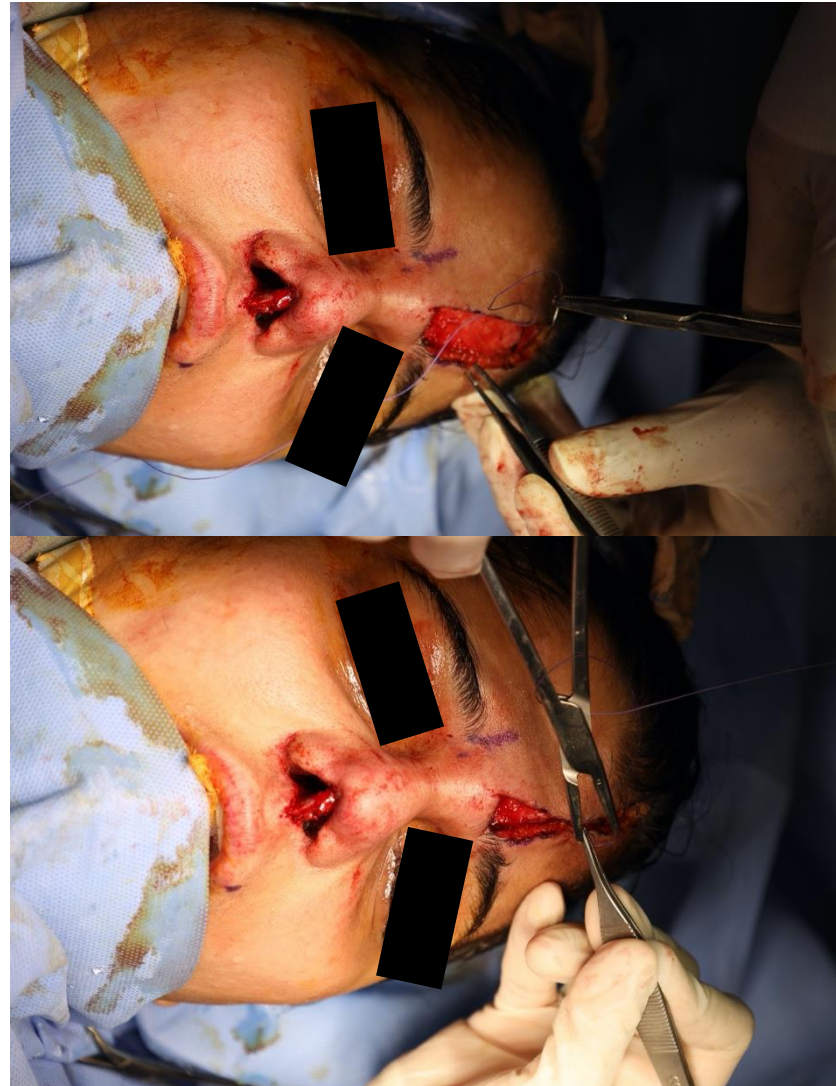


Guiding of the Graft:

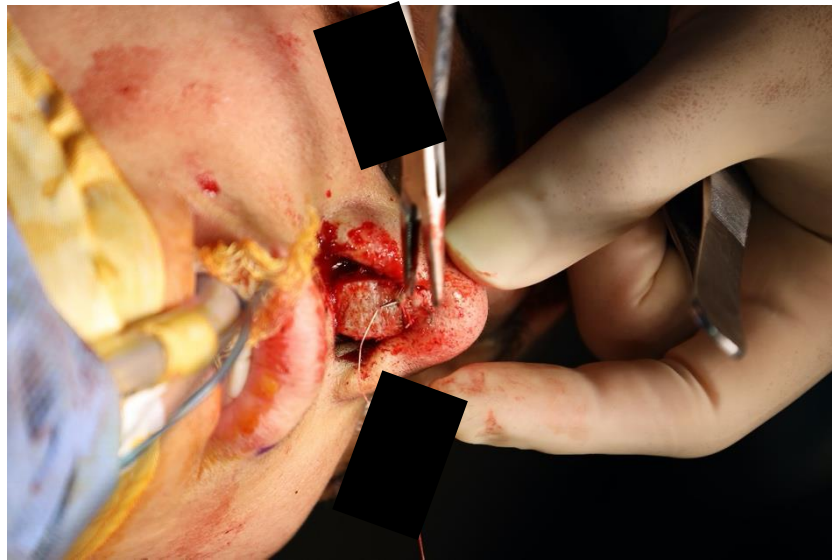




Closure and Suture:







We have faced a challenge in the flap survival due to local factors, so we were encouraged to harvest the paramedial flap from the right side that is supported by the supratrocheal artery, local factors were controlled and the columellar deformity was successfully reconstructed.

Note the healing prognosis in the flap area.



Conclusion

We used a flap that was only supported by the supratrocheal artery, allowing us to rotate the flap without distorting the vessels.

In these cases, the modified paramedian flap is the safest aesthetically and functionally for the patient, to achieve good coverage with the smallest donor site defect possible.

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