

## Case Report

# Single stage reconstruction of alar rim defect using auricular composite graft: a case report

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### ABSTRACT

A case report of reconstruction of a post infective alar rim defect, in a girl of 13 years of age, occurring as a result of septic piercing of the nose, using a composite graft taken from the ear in a single stage is described.

### KEY WORDS

Alar defect, Composite graft, Ear, Nose, Reconstruction

### INTRODUCTION

Alar rim defects are common due to a wide variety of causative factors namely post traumatic, post excisional (malignancy), post infective, congenital, etc.

These alar defects can be of various sizes.

Surgical reconstruction of the nose evolved along with time, the choice of reconstructive method being based on the size, location, and depth of the defect requiring replacement

Reconstruction of the nasal alar/ vestibular complex following trauma or surgery presents a challenging problem. Options include bone, cartilage, and composite grafts as well as prosthetic materials.<sup>1</sup>

The fragile alar rims are complex structures whose specialized and supportive skin ensures the competence of the external valves and the patency of the inlets to the

nasal airways.

Auricular composite grafts are a useful reconstructive option, particularly for alar reconstruction

Auricular composite grafts are being used increasingly for repair of nasal deformities. Most commonly these grafts have been employed to repair alar rim and columellar defects secondary to trauma or tumour resection

### CASE HISTORY

A 13 year old girl presented to us with a defect of the left alar margin. [Figure 1]

The defect was due to infection and cellulitis as a result of piercing of the nose for the purpose of putting a nose ring by some local person with an unsterile object.

The resultant cellulitis and infective process led to the loss of the alar rim with loss of the skin, cartilage and inner mucosa.



Figure 1: Pre Op Photo Of Defect



Figure 4: Composite Graft Sutured To The Defect



Figure 2: After Freshening The Margins Of The Defect



Figure 5: Post Op Photo-14 Days



Figure 3: Defect With The Auricular Composite Graft



Figure 6: Post Op Photo-6 Weeks

The total history of this infective process was around eight months.

There was no history of any previous surgical intervention.

On examination, the site of the defect had minimal scarring and no signs of inflammation.

Looking at the site and size of the defect, a plan was made to reconstruct the defect in a single stage operation, using a composite graft taken from the ear, from the root of the helix.

After debridement the defect measured 11mm on the alar rim margin and the two sides of the triangular defect were 12mm in length. [Figure 2]

The mucosal defect was slightly smaller by about 1 mm on the two sides of the triangle. [Figure 3]

The composite graft was harvested from the root of the right helix after marking the defect and the donor site was closed primarily. [Figure 4]

The composite graft was immediately sutured to the recipient site under loupe magnification of 3X for better opposition of the margins.

The inner mucosal layer was sutured first to the composite graft using 6-0 chromic catgut and the skin was sutured using a 6-0 nylon taking interrupted sutures. [Figure 5].

The nasal cavity was packed with paraffin gauze and a small dressing was applied after applying a thin layer of ointment outside.

The packing was removed on the 5<sup>th</sup> post operative day and the skin sutures were removed on the 10<sup>th</sup> post operative day.

The take of the composite graft was total and the final correction of the contour and defect was excellent. There was some colour mismatch, this too has improved with time. [Figure 6] The donor site healed without any problem.

## DISCUSSION

In planning the reconstruction of the nose, accurate analysis of the defect is essential; if the three layers (skin,

skeleton and lining) are lacked the reconstruction becomes more complex and less predictable; choosing the donor site is important for the skin thickness, color, texture and size of the defect and the remaining skin.<sup>2</sup>

Small through and through defects of the nasal ala may be managed with a composite graft of auricular tissue<sup>3,4,5</sup> obtained from the earlobe, helical rim<sup>3,4</sup> or the root of the helix.<sup>6</sup>

Composite chondrocutaneous grafts from either the helical rim or the root have been recommended for small through and through defects of the nostril rim.<sup>3,4,5,6</sup>

The traditional auricular composite graft used for nasal reconstruction is a wedge shaped section of the helical rim that includes two layers of skin separated by cartilage.

In general terms, any grafted tissue more than 5mm distant from a vascular bed is at significant risk of necrosis. Auricular composite grafts used for reconstruction of the alar rim should be no larger than 1.5cms in diameter so the center of the graft is never more than 5 to 8 mm away from a blood supply.<sup>8</sup>

Composite grafts include full thickness skin and accompanying periosteum and cartilage.

They can be used when both the soft tissue and underlying cartilaginous skeleton has been lost.

In general, smaller the size of the composite graft the greater the chance of successful revascularization and graft survival. A composite graft designed with a maximum diameter of 1 cm is successful.

It is recommended that a graft larger than 2 cm not be attempted.<sup>7</sup>

The donor site for composite grafts can be the ear, opposite ala or nasal septum.

The scar tissue from the recipient site is excised for obtaining good vascularised bed helping for the survival of the transplanted composite graft.

Very gentle and delicate handling and care of the graft is necessary and should be transferred to the recipient site at the earliest.<sup>9</sup>

The advantages of composite grafts are that it is a single stage operation with excellent contour correction.

The disadvantages are that it is not indicated for larger defects (size limitation) and the final color match may not be very good.<sup>9</sup>

## REFERENCES

1. Giberson WG, Freeman JL. Use of free auricular composite graft in nasal alar/ vestibular reconstruction. *J Otolaryngol* 1992;21:153-5.
2. Burget G, Menick FJ. Aesthetic reconstruction of the nose. St Louis: Mosby, 1994
3. Brown JB, Cannon B. Composite free grafts of skin and cartilage from the ear. *Surg. Gynecol. Obstet* 1946;82:253.
4. Gilles HD. Plastic surgery of the face. London: Oxford Medical Publishers, 1920
5. Konig F. On filling defects of the nostril wall. *Berl. Klin. Wochenschr* 1902;39:137.
6. Argamaso RV. An ideal donor site for the auricular composite graft. *Br J Plast Surg* 1975;28:219.
7. Daniel E Rousso, Fred G Fedoh. *In: Nasal Plastic Surgery.* McCollough E.G., WB Saunders Company; 1994. p. 328-9.
8. Barton FE. Nasal Reconstruction. *In: Smith JW, Aston SJ, editors. Grabb and Smith's Plastic Surgery.* 4<sup>th</sup> edn. Little, Brown and Company; p. 493.
9. Sood VP. *Corrective Rhinoplasty* 1<sup>st</sup> edn. CBS Publishers and Distributors; p. 158-9.