

CASE REPORT

Congenital Alar Defect, Reconstruction with Auricular Composite Graft

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Abstract: *Objective:* A case report of reconstruction of isolated congenital alar defect in a girl aged 16 years using auricular graft in a single staged procedure is described. *Background:* Numerous operative techniques have been described to address the alar defect reconstruction. Composite auricular chondrocutaneous grafting is a well-established technique for reconstructing alar defects. It can provide excellent results because it matches nasal tissue well in terms of colour, texture, and contour. However, the size of composite graft that can be transferred is limited by its lack of blood supply. *Result:* Result after follow up of 3 months is Graft has taken up with correction of the defect & nasal contour is good. The donor site (auricle) healed without any obvious deformity. *Conclusion:* Composite auricular graft gives an excellent nasal contour correction & it is a single stage procedure/operation

Keywords: Alar reconstruction, composite graft, auricular graft, congenital alar defect.

Introduction

The alar defect may be due to trauma, infection, post excision, congenital etc. [1]. Isolated congenital alar defect is rare. The nose is formed from five facial prominences, & the lateral nasal prominences form the alae [2]. The human nose occupies the central portion of the face & if deformity or defect is present, it can overwhelm the remaining facial features & draw untoward attention to the central organ [3]. The origin of the reconstruction of the nose can be traced from India & Egypt. The first description of nasal reconstruction is mentioned in encyclopedic work of Susrutha in Susrutha Samhitaas early as 6th century B.C. [4]. The choice of reconstructive method being based on the size, shape, location & depth of the defect requiring replacement [1]. Tissue missing from the nose must be replaced in similar type & in similar amount [4]. The nasal alar subunit is highly contoured, has a free margin, & contributes to the external nasal valve. Many methods exist to reconstruct the ala, including local nasal flaps, skin grafts, composite auricular graft & pedicle grafts. In most instances, consistent results require a cartilage subsurface framework to resist the forces of contraction & provide a stable external valve and provide a scaffold for contour [5]. Options include flaps, cartilage, bone, composite grafts, and prosthetic materials.

Composite grafts should be no larger than 1.5 - 2 cms to ensure reliable revascularization. Surviving grafts will begin to pink & nonviable areas will develop an eschar by 3-7 days [6]. Auricular composite grafts are useful in Alar /rim defects. Ensures patency of inlets to nasal airways [1].

Case History

A 16 year old girl presented to ENT OPD with a defect in Right ala. (Fig 1) She gave history of Alar defect since birth. On examination, the site of defect was like a triangular defect measuring 1.6x1.7x1.8cms. No other associated congenital defect was found. Single staged reconstruction of ala using auricular composite graft was planned. Under LA/Sedation, template of defect was made.

Fig-1: Right Alar Congenital defect

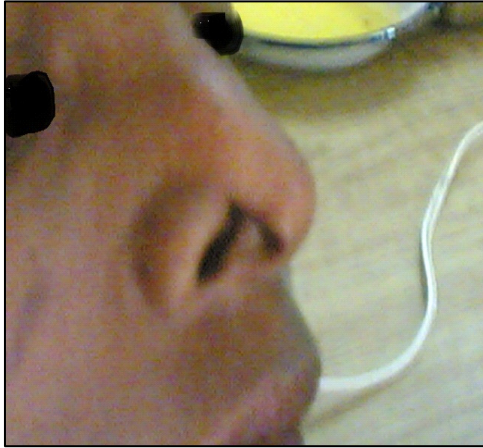


Fig-2: Composite Graft sutured to defect



The alar defect is freshened up in a *beveled* fashion. The composite graft from right auricle is harvested using the template & the graft is immediately sutured to the recipient site using 5-0 prolene.(Fig 2). Dressing done with ointment /Sofratulle. The donor site is closed primarily.

Fig-3: Post operative 5th day



Fig-4: After 3 months



Graft is pink on 5th post-operative day indicating viability (Fig 3) Suture removed on 7th postoperative day. Result after follow up of 3 months is Graft has taken up with correction of the defect & nasal contour is good. (Fig 4) There were some hypertrophic changes of the graft. The donor site (auricle) healed without any obvious deformity. (Fig 4)

Discussion

The alar lobule is both an aesthetic anatomic unit & a critical part of nasal respiratory system. Without cartilaginous reinforcement, the wound contraction will distort the alar rim & base & may alter breathing mechanics. The final result of any rhinoplastic procedure is the consequence of patient's unique & individual anatomy as much as the surgeon's skill. The surgeon must judge, by inspection & palpation, the character, texture & elasticity of the skin & subcutaneous tissues [2].

Superior results require a careful analysis of each defect to determine the extent of skin cover, skeletal structure, & internal lining that is lost and what must be replaced to not only re-establish form & function but to maintain that reconstruction against the forces of fibrosis & contracture. Composite chondrocartilagenous graft from either the helical rim or the root has been recommended for the small through & through defects of the nostril rim. 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 [1]. Composite grafts are typically harvested from the auricle & are particularly useful in reconstruction of the base of the nose where the skin overlies the nasal cartilage. Alar defects & defect of the columella are often managed using this technique [4]. Auricular composite graft used for reconstruction of the alar rim should be no larger than 2 cms in diameter. Composite grafts include full thickness skin & accompanying periosteum & cartilage. It should be recommended that graft larger than 2 cms should not be attempted [1].

The recipient raw bed/vascular surface area, in this case is made in a *beveled* fashion, the advantages of this is more recipient raw area & graft sits on the bed with better support & it maximizes the amount of vascular surface area that will in contact with the graft [4]. The disadvantages composite graft are that it is not recommended for larger defects (>2cms, size limitation) & the final colour may not be very good. The Advantages of composite graft are that it is a single stage procedure/operation with excellent contour correction. In our case, congenital defect of ala is rare & defect was 1.8cms, the single stage procedure of free composite auricular graft had taken up with good cosmetic result.

Summary

1. Isolated congenital alar defect is rare.
2. The choice of reconstructive method being based on the size, shape, location & depth of the defect requiring replacement.
3. Composite auricular chondrocutaneous grafts are useful in Alar /rim defects. Ensures patency of inlets to nasal airways.

4. Auricular composite graft used for reconstruction of the alar rim should be no larger than 2 cms in diameter.
5. The recipient raw bed/vascular surface area, is made in a beveled fashion, the advantage of this is more recipient raw area & better support.
6. The Advantages of composite graft are that it is a single stage procedure/operation with excellent nasal contour correction

References

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