

Isolated cleft of alar rim

Access this article online

Website:

www.amsjournal.com

DOI:

10.4103/2231-0746.95323

Quick Response Code:



R. Kannan, Reena John, Rethish Elangovan

Department of Oral and Maxillofacial Surgery, Vinayaka Mission's Sankarachariar Dental College, Salem, Tamil Nadu, India

Address for correspondence:

Dr. R. Kannan, Department of Oral and Maxillofacial Surgery,
Vinayaka Mission's Sankarachariar Dental College, Salem, Tamil Nadu, India.
E-mail: drkannanmds@yahoo.co.in

ABSTRACT

Alar rim defects are most commonly acquired as a result of trauma, burns, tumor excision or sometimes accompanying craniofacial clefts. However, isolated congenital alar defects are extremely rare occurring in about 1 in 20,000 to 40,000 live births. We are presenting a case report of an isolated congenital cleft of the alar rim. The defect was closed by the use of a rotation advancement full-thickness flap. With this technique, both symmetry and desired thickness of the nostrils were achieved. The skin color and texture of the alar rim were good with minimal scars.

Keywords: Advancement rotation flap, alar cleft, congenital, nasal deformities

INTRODUCTION

The nose is the most prominent feature on the face and figures highly in facial balance and beauty. Hence, any asymmetry and irregularity in the nasal contour gets manifested to larger scale compromising facial esthetics.

Alar rim defects are most commonly acquired as a result of trauma, burns, or tumor excision or sometimes accompanying craniofacial clefts. Although the development of the nose is rather complicated, congenital anomalies are rare, the incidence being 1 in 20,000 to 40,000 live births.^[1,2]

The naso-ocular cleft is a rare defect; however, isolated alar clefts with or without additional hamartomatous local tissue are even rarer. Orofacial clefts have been discussed in detail by Tessier and Boo-Chai.^[2] There are several classification systems of craniofacial clefts. The Tessier's classification is most commonly used. Craniofacial classification scheme divides facial clefts into types 0, 1, 2, and 3, while types 11, 12, 13, and 14 are cranial clefts with nose lesions. The majority of nasal clefts are those of Tessier's type 0, while isolated alar clefts lesions are extremely rare.^[1] The aim of the manuscript is to present a case of isolated cleft of alar rim and its successful management.

CASE REPORT

A 14-year-old boy, child of non-consanguinous parents reported to our centre with complaints of unaesthetic appearance of the nose [Figure 1]. On examination, a defect in the right alar rim was identified which was present since birth. The history revealed no form of cleft in any of the family members and no previous surgery or any trauma has been experienced on the nose. On examination, the right alar cartilage was found to be abnormally attached in a superior position. Systemic examination of face and other organ systems revealed no other anomalies. The lip was normally developed with no notching of the vermillion, nor was there any defect present in the orbicularis oris muscle. The palate was normally developed and the occlusion was normal. The case was diagnosed as a congenital isolated alar rim defect or Tessier's Type 1. The treatment plan was correction of the defect with the help of a local rotation advancement full-thickness flap.

SURGICAL TECHNIQUE

The goal of the surgery was to return the abnormally attached alar cartilage on the right side, to the normal anatomic position and to obtain symmetry.

The surgery was performed under general anesthesia and oroendotracheal intubation. The markings for the incision were



Figure 1: Preoperative frontal view of the patient

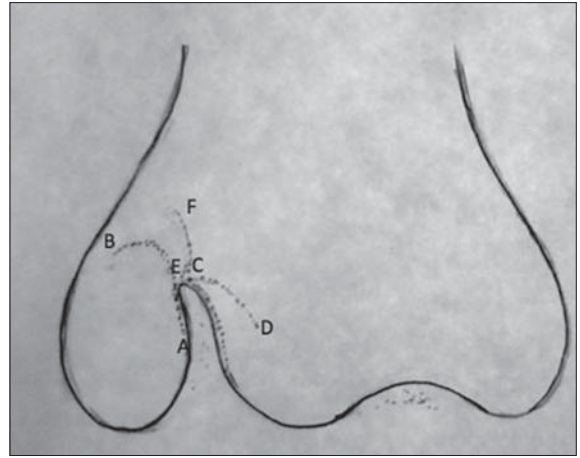


Figure 2: Illustration showing the incision markings



Figure 3: Intraoperative view with incision markings



Figure 4: Intraoperative view after full-thickness flap elevation

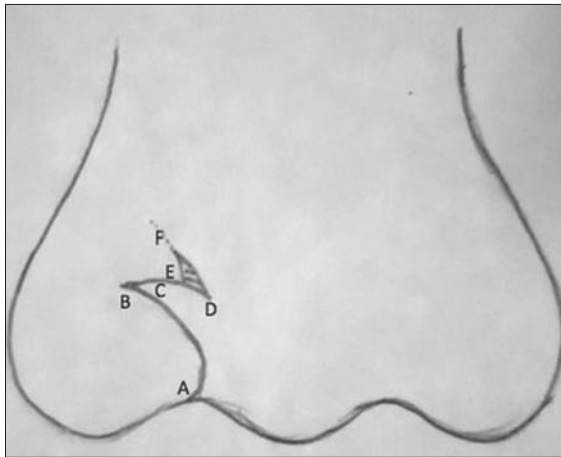


Figure 5: Illustration showing the repositioned second full-thickness flap

placed as shown in Figures 2 and 3 and the first full-thickness incision was placed on the anterior border of the lateral alar margin of the cleft extending from point A to point B as shown in Figures 4 and 5. The length of this flap depends on the size of the defect to be closed. This flap is rotated in a medioinferior direction to release the abnormal attachment of the alar cartilage, to return it to

its normal anatomic position but this leaves behind a "V"-shaped surgical defect. The incision from point C to point D placed on the medial side of the alar cleft leads to a full-thickness flap that is rotated in a lateral direction to close the "V"-shaped surgical defect [Figure 5]. The final incision from point E to point F that is placed superiorly is advanced medially to close the surgical defect left from the second full-thickness flap. To correspond to the opposite side alar margin and to attain symmetry, the free borders of the alar cleft were de-epithelized. Closure was done in layers with simple interrupted sutures, muscle layer closed with 4-0 vicryl and skin with 5-0 prolene as shown in Figures 6 and 7. Betadine ointment was placed on the surgical site and a dressing placed. Under antibiotic coverage, the dressing was changed on alternate days and the surgical site healed uneventfully. The patient has been followed up for the past 2 years and the esthetic outcome of the surgery has been satisfactory for the patient and the surgeon as shown in Figure 8.

DISCUSSION

The reconstruction of the nose has been a challenging field owing to the lack of availability of flaps for reconstruction, and the esthetic results obtained can be unsatisfactory both for the surgeon and the patient. Even a subtle change in the structural framework of the nose can have a drastic effect on the appearance of the nose, hence

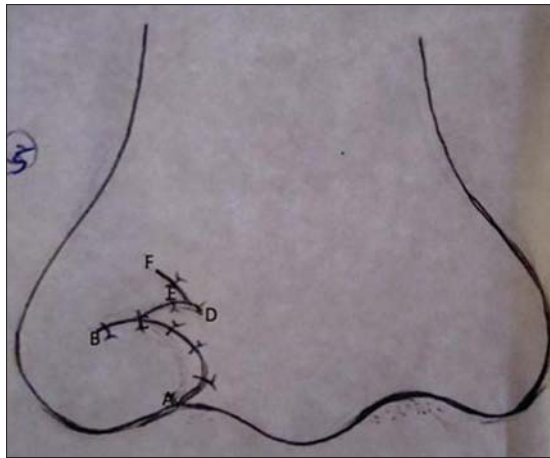


Figure 6: Illustration showing the completed reconstruction



Figure 7: Immediate postoperative picture



Figure 8: Postoperative frontal view after 2 years

it is of utmost importance that a good treatment plan is worked up with all the possible options for reconstruction of the defect. Various techniques have been described from the early years that include the nasolabial flap, composite grafts from the ear, alloplastic materials which either have a disadvantage of foreign body reaction, or unaesthetic finishing at the defect site and the donor site.

A few such cases have been reported which were treated using a modified z-plasty described by Denonvillier.^[1] Most of these techniques described use a partial-thickness flap to cover up the defect. In this technique, we have described the use of full-thickness flaps achieving good nostril thickness and also a nasal lining which is functionally and esthetically more acceptable.

This technique is very useful in cases where there is relatively little soft tissue deficit and merely malposition of the cartilage, which does not necessitate the use of any grafts for correction of the defect.

Any reconstruction of the nose must provide a viable inner epithelial lining to permit reliable healing and facilitate a patent nasal passage and support the placement of structural graft.^[3]

The subunit concept^[4] introduced by Burget and Menick in 1995 in which the nose was divided into nine distinct areas based on

natural contours and creases. They suggested that to get ideal esthetic results in nasal reconstruction, when most of a subunit is missing, the entire subunit must be reconstructed rather than simply filling a defect, but this concept has its limitations because it is not logical for the surgeon to reconstruct the entire subunit to treat a central defect of 3 mm which can be primarily closed.^[3]

The technique described in our case report in patients with isolated alar cleft who have little or no soft tissue deficiency and simply a malposition of the anatomical units. In mild, isolated alar clefts, the cartilage deficiency and thus residual notching is minimal. With a moderate cleft where the cartilage deficiency is more marked requires an early surgical correction and in the severe isolated clefts, the even greater cartilage deficiency necessitates the use of free cartilage grafts.^[5] The advantages of this technique are that it is a full-thickness flap that is used for reconstruction that provides a two-layer closure for the defect and also an effective nasal lining. Since it is a local flap, the esthetic part is maintained in terms of color and texture to the native tissue.

CONCLUSION

This case report of an isolated alar rim defect through its post-surgical result has shown us that a well-planned local flap gives esthetically and functionally acceptable results in a mild form of alar rim defects.

REFERENCES

1. Novaković M, Baralić I, Stepić N, Rajović M, Stojiljković V. Denonvilliers' advancement flap in congenital alar rim defects correction. *Vojnosanit Pregl* 2009;66:403-6.
2. Boo-Chai K, Tange I. The isolated cleft lip nose. Report of five cases in adults. *Plast Reconstr Surg* 1968;41:28-34.
3. Chang JS, Becker SS, Park SS. Nasal reconstruction: The state of the art. *Curr Opin Otolaryngol Head Neck Surg* 2004;12:336-43.
4. Singh DJ, Barlett SP. Aesthetic considerations in nasal reconstruction and the role of modified subunits. *Plast Reconstr Surg* 2003;111:639-48.
5. Thomson HG, Sleightholm R. Isolated naso-ocular cleft: A one stage repair. *Plast Reconstr Surg* 1985;76:534-8.

Cite this article as: Kannan R, John R, Elangovan R. Isolated cleft of alar rim. *Ann Maxillofac Surg* 2012;2:60-2.

Source of Support: Nil, **Conflict of Interest:** None declared.