Anaplastology
ISSN: 2161-1173

Narsete, Anaplastology 2013, 2:4
DOI: 10.4172/2161-1173.1000117

Case Report Open Access

Tip Nasal Plasty in Primary Unilateral Cleft Lip Repair: A Third World Country Experience

Thomas Narsete*

Personique Surgery Center, Austin, Texas, USA

Abstract

There is no better place for a plastic surgeon to donate time than in a third world country. There is a large demand for our services and little care available for deformed children. Many of these children are born with severe cleft lip/palate deformities that take stages to repair. The author presents a short series of unilateral cleft lip repairs with a nasal suspension suture at the time of the primary repair. The technique is simple and does not require much anesthesia time. A delayed nasal repair is thus avoided and the symmetry is excellent.

Introduction

Reconstructive surgery in a third world country is what organized plastic surgery is all about. Humanitarian aid is irreplaceable, and the demand is always there. In many countries there is a limited supply of skilled, trained surgeons to help deformed children. Much of the work involves unrepaired cleft lip/palate cases and other birth defects. The facilities are meager and anesthesia supplies hard to arrange. The outreach programs that get the children to a local facility are limited, and secondary surgeries are often excluded due to the large amount of work on a trip. Therefore, the most surgery than can be performed on the patients is done in a single setting.

Most of the children on these trips have unilateral lip/palate clefts with significant nasal asymmetry. Much of our emphasis on past trips is to repair the primary clefts and leave the nasal tip asymmetry for another day. The author feels if a tip nasal plasty can be added to the initial unilateral cleft lip repair, the patients would not need additional anesthesia and surgery. A simple and effective technique is presented to accomplish nasal correction and prevent the need for secondary surgery.

Background

Millard [1-3] has been credited with many innovations in plastic surgery especially the repair of a unilateral cleft lip. He describes the medial rotation of the cleft lip segment with a fill of the tissue gap with a lateral advancement flap. The surgery can be used on most any cleft lip repair and offers a cut as you go technique. The surgeon can adapt these principles to any patient and obtain an excellent result. Refinements in this technique have also been published for complicated cases [4].

The classical surgery to repair the nasal imbalance was typically delayed until the patient was school aged. Numerous publications on these repairs demonstrate successful results [5-8]. Salyer [7] frees the alar cartilage and skin over the nasal dome. Additional mobilization is accomplished laterally with release of the soft tissue of the nose and mucosal lining. The alar cartilage is then maintained in the new position with a tie over bolus with a red rubber tube with the cartilage moved in a medial and cephalic direction. Additional suspension sutures can be utilized with his technique, and minimal external scarring results.

Cronin and Denkler [8] presented a series of 53 patients where he used external "V" incision across the columella. The vestibular incisions went along the lower border of the lateral crus connected to an intercartilagenous incision on the cleft side. This allows excellent exposure of the alar domes for suture repair. Cross hatching the cartilage allows for flexion of the malformed cartilage. The nasal defect on the cleft side is closed with V-Y advancement. The basic goal is to secure the cleft side ala in a more medial and cephalic position.

Stal and Hollier [5] described the nasal support structure as a tripod with lateral displacement in the unilateral cleft lip and loss of tip definition. The cleft side tip defining point is inferiorly displaced with a wide intra alar distance. Early repair with an intra dermal suspension suture with limited alar dissection is advised through an infra cartilagenous incision. The repair has the advantage of time and simplicity, and good symmetry is accomplished. External scarring is avoided.

Technique

At the time if the lip repair, an infra cartilaginous incision is made adjacent to the caudal margin of the greater alar cartilage on the cleft side. The incision is extended into the columella. The vestibular skin is left attatched to the cartilage, and the dorsal skin on the cleft side is elevated. The dissection is carried across to the junction of the upper lateral cartilage on the non cleft side creating a space over the cleft side alar cartilage. A PDS suture is used and the needle is easily bent. The suture is inserted through the skin and alar cartilage through the vestibule on the cleft side. The needle is then passed through the skin above the junction of the upper and lower lateral cartilages for a maximum correction of the displaced ala. The needle is the turned back through the same skin hole but passed through a different dermal tract .The suture technique is completed when the needle is passed back through the alar cartilage leaving the knot inside the nose. The vector is medial and cephalic. The ala is then rotated to the nostril sill. You will know if you have an excellent correction as the negative space created by the nostril is even to the non cleft side. With time and experience, the added correction takes only a few minutes, and symmetry is easily accomplished. External splints are not used (Figures 1-4).

***Corresponding author:** Thomas Narsete, Personique Surgery Center, 630 W 34th St Ste. 201, Austin, Texas 78732, USA, E-mail: drnarsete@personique.com

Received July 17, 2013; **Accepted** August 26, 2013; **Published** August 29, 2013

Citation: Narsete T (2013) Tip Nasal Plasty in Primary Unilateral Cleft Lip Repair: A Third World Country Experience. Anaplastology 2: 117. doi: 10.4172/2161-1173.1000117

Figure 1: Figure 1 shows the advancement of the alar cartilage through a rim incision to a medial and superior location.

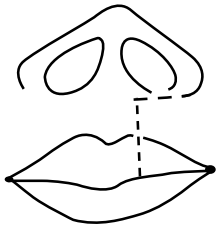

Figure 2: Figure 2 shows the intended result after alar rotation to make the nostrils symmetrical.

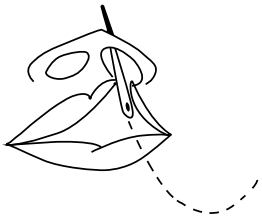

Figure 3: Figure 3 shows the entrance of the suture from the nasal vestibule through the alar cartilage to its new location.

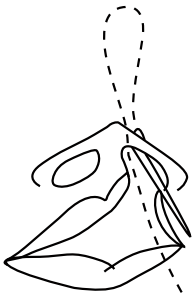

Figure 4: Figure 4 shows the reversal of the suture passed through the same needle hole in a different dermal plane into the nasal vestibule.

Patient 1: This patient is a young child with severe nasal imbalance. The post op photo demonstrates marked improvement in nasal symmetry. The alar cartilage on the cleft side was moved to a cephalic and medial location.

Patient 2: This patient demonstrates the successful improvement in nasal symmetry even in a wide unilateral cleft with tissue deficiency.

Patient 3: This patient is a 51 year old female with an unrepaired cleft lip. Nasal balance is much better following repair.

Patient 4: The nasal suspension shows excellent nasal symmetry in a difficult cleft lip repair, once the alar cartilage is repositioned to a medial and superior location.

Results

The author presents four cases for review, all performed at the Obras Sociales Hermano Pedro Hospital in Antigua, Guatemala (See photos).

Discussion

The author presents a short series of successful tip rhinoplasties at the time of a primary cleft lip repair. The procedure is technically simple and gives good results even in complicated cleft lip repairs. The patients in third world countries don't always have an opportunity for multiple surgeries so it is beneficial to the children to add the nasal tip surgery. There is minimal anesthesia time needed and little difference in recovery for the added benefit. Because these children are lost to follow up, there are no long term photos available. The immediate post op photos, however, do show a successful improvement in nasal symmetry.

Other authors [7,8] have delayed the nasal tip plasty in a cleft patient, or relied on external incisions that leave a permanent scar to

solve the facial asymmetry. These procedures are more difficult and less successful. The technique presented is uncomplicated and has an immediate result that does not leave the external scars. The techniques presented by Cronin and Denkler [8] and Salyer [7] seem too extensive for a neonatal repair, and the time commitment in a third world country is limited due to the large case load in a one week trip for more extensive secondary surgery.

Kim et al. [9] presented a series of Asian children with tip rhinoplasty at the time of a unilateral cleft lip repair. The average age of the patients was 3 months. Of the 412 cases they performed surgery on, 217 had additional tip rhinoplasty. The author reviewed nasal tip projection, columellar length and nasal width. The results on the rhinoplasty treated patients were compared to the non rhinoplasty patients with a long term study following cleft lip repair with anthropometric evaluation. The results demonstrate that the simultaneous correction of the cleft lip with tip rhinoplasty does not interfere with nasal growth and gives a well balanced nasal appearance.

Conclusion

The nasal tip plasty as described is an effective treatment for the unilateral cleft lip nasal deformity. The technique does not add to the risk of the anesthesia and is easy to do. Further surgery for the nasal imbalance can then be avoided, and nasal growth is not inhibited.

Disclosure

The author has no financial disclosures to make and there are no conflicts of interest.

The author would like to thank Eugene Gonzales, a computer technician employee at Personique Surgery Center in Austin, Texas.

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