



Postoperative alar base symmetry in complete unilateral cleft lip and palate: A prospective study

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Abstract In the evolution of cleft lip repair, there have been continuous attempts to minimize local trauma and to improve lip and nasal appearances. In order to obtain an aesthetically balanced development of midface, the primary surgical correction of the nasolabial area is of paramount importance. In this study, the importance of a back-cut extending cephalically above the inferior turbinate at the mucocutaneous junction which elevates the nostril floor on the cleft side for the purpose of achieving symmetry of the alar bases are analyzed by pre and postoperative photographic anthropometry. This study comprised of fifty cases of the unilateral complete cleft lip. At the time of surgery, the patient age ranged from 3–9 months. The surgeries, performed by a single surgeon, employed the standard Millard technique, incorporating Mohler modifications of lip repair. Anthropometric analysis revealed that the preoperative mean difference between the normal side and the cleft side was 0.2056 with a standard deviation of 0.133. In the postoperative analysis, the mean difference was reduced to 0.0174 with a standard deviation of 0.141. The paired t-test showed that the p-value is <0.001, indicating high statistical significance. To conclude, in complete unilateral cleft lip and palate, the geometrically placed nasal back-cut incision has a definite role in the correction of the alar base symmetry during primary surgery

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Introduction

In the management of cleft lip and palate, the nose is an integral part of the problem that should be addressed primarily during lip surgery.¹ Moreover, the problems confronted are dynamic over the period of child's facial development because of the malpositioned underlying osseous structures and the septal and alar cartilages.²

To obtain an aesthetically balanced midface development, primary surgical correction of the nasolabial area is of paramount importance.³ The plethora of operative strategies addressing the nasolabial stigmata in cleft patients emphasizes the crucial role of nasolabial aesthetics and the need for primary reconstruction of the nasal floor along with the correction of malpositioned and dysplastic alar cartilages.⁴ The basic technique employed is the standard Millard technique incorporating the Mohler modifications.

This study analyzes the importance of a geometrical incision, a back-cut extending cephalically above the inferior turbinate at the mucocutaneous junction, to elevate the nostril floor on the cleft side to achieve symmetry of the alar bases. Pre and postoperative anthropometric studies were conducted on the asymmetry and symmetry of the alar bases to assess the effectiveness and reliability of this aforementioned technique.

Objectives

This study aimed to analyze the symmetry of the alar bases preoperatively and on the seventh postoperative day, on a two-dimensional aspect, and to emphasize the importance of precise alar back-cut above the inferior turbinate at the mucocutaneous junction during repair of complete unilateral cleft lip and palate.

Materials and methods

This study was conducted at the Baby Memorial Hospital, Calicut, a Smile Train center in India. The study design was formulated following STROBE guidelines, after obtaining approval from the ethics committee. Complete unilateral cleft lip and palate cases from 2007 to 2014 were assessed. This study comprised 50 eligible cases.

At the time of surgery, the patient age ranged from 3 to 9 months. A single surgeon employing the standard Millard technique, incorporating the Mohler modifications, performed the surgeries. Anthropometric pre- and postoperative photographic assessments were conducted to assess the alar base symmetry.

Inclusion criteria

- a. Patient with complete unilateral cleft lip and palate (Figure 1).

Exclusion criteria

- a. Bilateral cleft lip and palate cases.



Figure 1 Preoperative.

- b. Incomplete unilateral cleft lip and palate cases.
- c. Patients with associated syndromes.
- d. Patients lost to follow-up.

Surgical technique

The surgical procedure encompasses the rotation-advancement technique as described by Millard, incorporating the Mohler modifications along with "V's" at the white and red lines. The markings on the medial and lateral lip segments are shown in Figure 2. Radical muscle dissection follows skin incisions, wherein all abnormal attachments are detached from the lower lateral cartilage laterally and from the columella medially. Closed nasal corrections are achieved by degloving the alar cartilages on the cleft side from the skin and hitching up the collapsed cartilage on the cleft side to the medial crus and the septum on the non-cleft side. Anterior palate closure is then commenced using vomerine flaps and pared palatal flaps. These flaps are approximated using mattress sutures inverting the mucosa to the nasal side so that the raw areas are in contact.

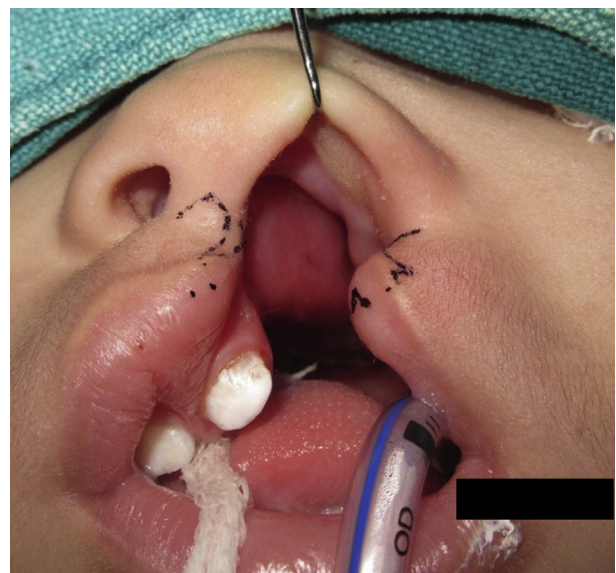


Figure 2 Incision marking.

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