Case Report

Unilateral cleft lip repair – A technical note

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ABSTRACT

The unilateral cleft lip is a complex deformity. Surgical correction has evolved from a straight repair through triangular and quadrilateral repairs to the Rotation Advancement Technique of Millard and its modification by Noordhoof. The latter is the technique followed at our centre for all unilateral cleft lip patients. We operate on these patients at three to four months of age, according to Millard's rule of 10, and no pre-surgical orthopedics or naso alveolar moulding was done. We also perform closed alar dissection and primary rhinoplasty in all the patients.

INTRODUCTION

The unilateral cleft lip in its varying manifestations of shape, size and asymmetry is a complex deformity. To obtain consistent results one requires basic training in soft tissue handling, and understanding of the bony foundations of the face. The Millard procedure broke like dawn on the Indian horizon and caught the imagination of surgeons the world over by its clear, logical thought process[1].

MILLARD STATED:

- All the previous flap procedures based their logic on the false premise that the actual defect in the cleft is in the lower third of the lip, which is not so. Discarding precious tissue in Tennison's approach when there was already poverty is against all established plastic surgical principles.
- Three quarters of the Cupid's bow is present on the non-cleft side, but is riding high. What better way of bringing it down in a horizontal line with its fellow than by a rotational flap? No rotational flap is complete without a back cut and this not only further helps to drop the obliquely oriented Cupid's bow, but compensates for the contracture of the straight line of the Millard procedure.
- This main rotational flap is taken from the rich non-cleft side and not from the poverty stricken cleft side as in the triangular and quadrilateral flap procedures.
- The defect thus created is in the upper part of the lip and can be hidden under the overhanging nostril. A better way of filling this defect is by advancing a flap from the cleft side.
- The advancement flap gives the additional bonus of correcting the nostril flare.
- The “C” flap helps to lengthen the short columella. But in our technique we have used for nasal sil.
- The scar imitates the philtral line, creates a philtral column, a philtral dimple and a slight pout which adds charm to the finished result.

The Millard procedure needs to be taught on the table, needs a considerable amount of virtuosity on the part of the surgeon and it needs a fair amount of experience. Unlike the 'Tennison–Sawhney[2,3,4] there are very few mathematically precise points to mark and you can “cut as you go” depending upon the needs of the case, keeping your eye on shape and symmetry. As Millard remarked “all art depends on freedom for its vitality for no two lips are identical - they may be similar but never identical”. The Original Millard's technique[5] was minimally modified in our unit by bringing the 'c ' Flap to the nasal sil rather than taking it for columella.

PROTOCOL & PROCEDURE

Timing of Surgery - The “rule of tens” has been followed. However, this does not apply for all the patients. Sometimes they are physically undernourished. On an average, our children were at least 4 kgs of weight, which they attain at 4 months of age. Neonatal surgery is not recommended and not done, in view of the risks involved and the need for a compromised surgical procedure to minimize the time and extent of the surgery is required.

Pre surgical intervention like orthopedics and nasoalveolar moulding[6,7] were followed in many centers across the world. We have not used pre surgical intervention

for any of our patients [8,9]. Expense and patient compliance are also factors to be taken into account. Hence we do not use any orthodontic intervention prior to surgery.

PROCEDURE

We use the standard Millard incisions (Figure 3). The rotation flap at its superior end hugs the base of the columella. We always make an ample back cut, taking care not to encroach onto the philtral column on the non-cleft side. An adequate rotation incision with a back-cut is required to get the Cupid's bow points at the same horizontal level. If the back cut were to transgress the philtral column on the non-cleft side this would cause a lengthening of the lip on that side. We use a very minimal the peri-alar component of the Millard incision for the advancement flap. We are entirely satisfied that the scar, is not obvious, if the incisions are placed precisely at the base of the ala in the alar groove. The advantage of the peri-alar incision is that one can dissect the paranasal muscles under vision and include them in Millard's Cinch suture. This suture traverses the membranous septum and takes a bite on the paranasal muscles before going back through the septum. This helps in correcting the alar flare. While we basically follow the Millard technique, the senior author has included several technical refinements to the procedure and we modified bringing the c flap to the nasal sil instead for the columella (Figure 5,6,7,8).

Primary correction of the nasal deformity associated with the unilateral cleft lip has come to be accepted as the norm today. Many authors have recommended primary nasal correction with a closed approach. However, there is a consensus that some form of primary nasal correction must be done.

We use a closed rhinoplasty technique. Using Kilner's scissors, we approach the ala from both the medial and lateral aspects. The medial approach is from the incision at the base of the columella. Laterally, the scissors are introduced at the

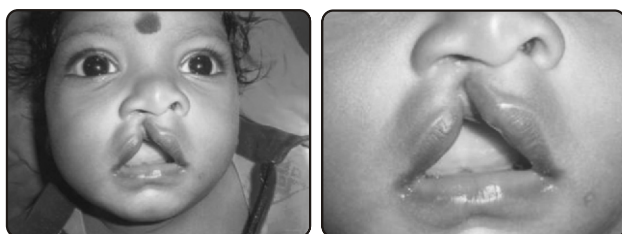


Fig-1& 2 Pre-op View

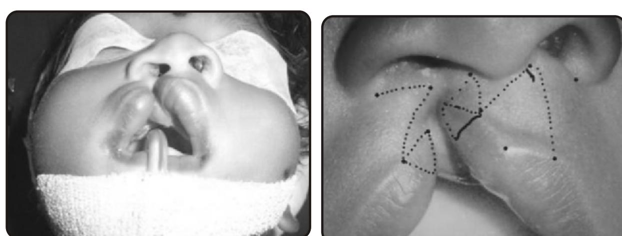


Fig - 3 - Oral Intubation Fig - 4 - Incision

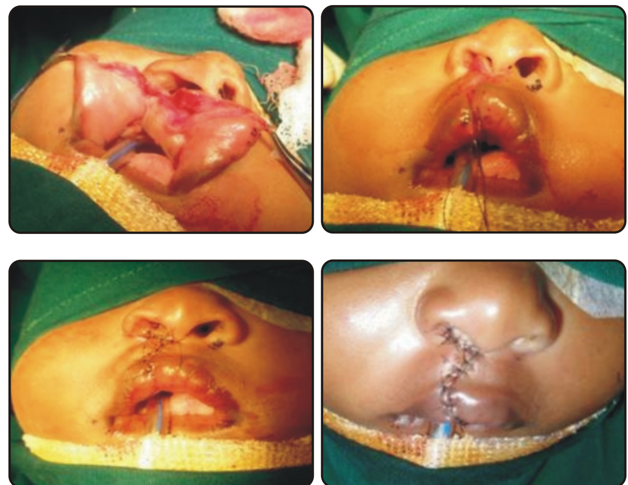
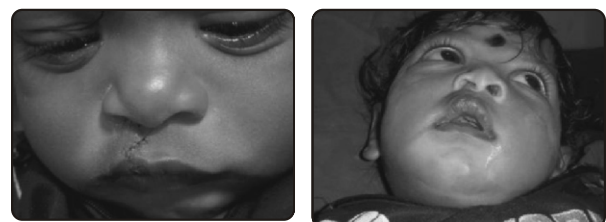


Fig - 5, 6, 7, 8 Surgical Procedure

base of the ala through the peri-alar incision. The scissors are used to dissect in the plane between the dorsal skin and the alar cartilages – both the lower and upper lateral cartilages are completely separated from the skin. The dissection is carried out till the nostril rim to free all superficial attachments of the alar cartilages. A more limited dissection is carried out on the non-cleft side up to the dome. The freed lower lateral cartilage is fixed to the upper lateral by means of bolster sutures. Post operative results were given. (Figure 9,10,11)



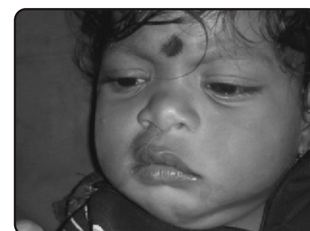


Fig - 9, 10, 11 Post-op View

DISCUSSION

Though Millard's and Modified Millard's technique were accepted and followed in many centers across the world. But there are some post operative deformities too. The deformity always includes a vermillion notch. There may be, in addition, a white roll mal-alignment, a scar or a furrow [10] on the body of the lip and a flattened alar cartilage with a wide nostril. When the deformity is confined to a notch of the

vermillion, a notch correction procedure including muscle build-up and a Z plasty on the mucosa are all that is required. When there is no upward displacement of the Cupid's bow point, a simple straight repair (Rose-Thompson) would suffice [11,12].

However, in the more significant deformities that require downward rotation of the Cupid's bow point and closed nasal dissection, we follow Millard's procedure. But in the majority of these patients that have good muscle continuity across the cleft, we restrict the Millard incisions to the skin and subcutis and do not cut into the muscle. This form of a “cutaneous Millard's” rotation advancement procedure minimises the trauma inflicted on these patients with trivial deformities and helps in better scarring post-operatively. A muscle build-up is sometimes necessary.

The fold forms at the upper border of the lower lateral cartilage and can only be eliminated if the lower lateral cartilage is hitched to the upper lateral [13]. This may be done blindly in the closed technique or under vision in the open . In some patients it is significant enough to require correction by a secondary rhinoplasty. With the present improved state of the art of secondary rhinoplasty, a good percentage of our patients are subjected to this procedure in an attempt to achieve well nigh perfection.

SUMMARY & CONCLUSION

If a Unilateral cleft lip is repaired using Millard's or modified Millard's technique using advancement and rotation concept, the benefits were greater when compared to other techniques. Though notching and scars are observed, still this technique holds good in repairing primary cleft lip.

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