Secondary Repair of the Bilateral Cleft Lip Deformity

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A wide prolabial segment with a “whistling” defect used to be a common deformity following bilateral cleft lip surgery when the muscle repair was ignored. Simply revising scars often will be followed by recurrence of the deformity.

An adequate muscle repair is the basis for a successful and permanent correction. The operation described in this paper includes elevation of the prolabial skin and reconstruction of the orbicularis oris muscle.

A wide prolabial skin segment, spread out scars and central notching used to be common shortcomings found in a repaired bilateral cleft lip. Merely excising the scar with excision of prolabial skin in an attempt to reduce this characteristic defect proved insufficient. Closer examination, especially during puckering and attempts to whistle, will reveal the underlying cause: absence of the continuity of the orbicularis oris muscle. Contracture of this muscle in diverging directions seems to be the main reason for recurrence of the deformity (Figure 1).

The importance of muscle repair in cleft lip surgery has been emphasized by Duffy (1971), Fara (1975), Kernahan (1978), Randall (1978) and others. Very little has been published, other than by Puckett et al (1980), regarding its importance in the correction of secondary deformities.

The method described here is merely one way of diminishing the sequelae of what we now know as an inadequate primary repair of a bilateral cleft lip.

Since 1974, a series of 30 cases were corrected with this technique by both attending and resident staff. Evaluation of the results was done by examining and comparing pre- and post-operative photographs. Lip contour, fullness and muscular activity were used as some of the criteria for this clinical evaluation.

Surgical Technique (Figure 2):

Excision of the scars must avoid removal of good skin on the lateral borders but include most of the excessive width of prolabial skin. The now narrowed prolabium is completely elevated from the underlying soft tissue. Usually a triangular part of vermilion is included and the elevation is extended to include part of the membranous septum. Towards the nasal spine the dissection is kept deep. The muscle bundles on either side are dissected out and freed up to the nasolabial line. They are then sutured together, usually in a vest over pants fashion using nonabsorbable sutures. At the level of the nasal spine both bundles are sutured to the dense fibrous tissue at the base of the spine.

The prolabial skin is then returned and skin closure can be accomplished with very little tension. The excess vermilion of both sides is fitted in the midline which corrects the notching. Both nostril bases are narrowed by advancing them medially using a Y-V pattern. It is important to connect both nostril bases with one another using one nonabsorbable suture which is passed across the nasal spine. In some cases, the prolabial elevation has been extended up-

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ward onto the caudal edge of the septum; sliding this part upward during the suturing will give a degree of columella lifting.

Results

The time of followup for the 30 cases treated with this technique ranged from 1 to 9 years. Nineteen cases were rated good to excellent (Figures 3 and 4) based on clinical observation and when feasible, judged by pre- and post-operative photographs. Nine were rated satisfactory in that an additional adjusting procedure was necessary, such as a lip trim or partial scar revision. Two cases were lost for long-term followup.

Discussion

With the more widespread knowledge and use of muscle repair at the initial repair, there seems to be less need for such an extensive revision. When needed, however, the use of this technique has proven valuable.

Millard, in Cleft Craft II, quotes Holdsworth who in 1963 described a similar procedure, Millard’s criticism was that this procedure made no allowance for columella lifting and proposed the best procedure to be the “banking” procedure. O’Neal et al (1975) adopted that in their repair for secondary bilateral cleft lip deformities.

If the dissection of the prolabial skin is carried up into the membranous septum and even over the caudo-dorsal end of the nasal septum, advancement of the entire unit will give some degree of columella lifting. Together with the narrowing of the alar bases, sufficient improvement often can be obtained and another operation is not required. “Banking” commits the surgeon to a second stage in all cases.

Puckett et al (1980) tunnels the prolabial skin. Elevation of this part allows more precise muscular suturing. Attempts to create a dimple by central dermal suture placement, as described by Millard, have been made with only varied success.

Complete muscle dehiscence has not been observed. Remaining partial muscle bulging has been seen, however. This was probably due to insufficient dissection. Too wide a dissection, however, potentially can lead to muscle necrosis and/or hematomas with subsequent fibrosis. We have not had the need for the use of vacutainer suctions, as suggested by Plunkett.

Most cases of the series presented here were referred to the Craniofacial Treatment Center for their secondary repair. It can not be emphasized enough that the restoration of the orbicularis muscle is best achieved at the time of the primary repair.
FIGURE 2. Sequence of Operation Steps

a. Defect.

b. Scar and excess prolabial skin excised.

c. Muscle dissected out one side.

d. Both parts of muscle freed.

e. Prolabial skin elevated and muscle repaired.

f. Final closure.
FIGURE 3. Samples of Good to Excellent Long-Term Results

a. Preoperative.

b. 1 year Postoperative.

c. 6 years Postoperative.

FIGURE 4a. Preoperative puckering.
FIGURE 4b. 7 year Postoperative showing Excellent puckering.
References


