

25. *Bilateral Cleft Game Plan*

REGROUPING BEFORE THE CHARGE

IN the bilateral cleft, as there is no normal side with which to compare, it is necessary to project the general ideal normal in the mind's eye just above the specific case. A constant comparison between these two by a vertical nystagmus will facilitate the transformation.

Before we make a final outline of the present approach, let us review again specific bilateral goals. All of us *want* to produce a lip that is not too tight transversely or too long vertically—one that has an adequate upper sulcus, muscle-to-muscle union, a white mucocutaneous roll, a full vermilion, a cupid's bow with a midline tubercle and a dimpled philtrum of natural shape. We should like to achieve these in infancy when scars tend to heal smoothly.

All of us *abhor* having to go back into an excellent lip, which has nearly invisible scars from surgical closure in infancy, to get adequate tissue to correct the nose. To get a good lip and avoid reopening it forces the banking of the forked flap. The ultimate manner of banking may vary, but the principle is here to stay.

All of us *want* a columella long enough to allow the nasal tip to stand proudly forward with alar bases that are in a normal position, forming a nostril sill with the feet of the columella base. It would be ideal if this could be achieved early—for better scars, for better nasal growth and development and to avoid the patient's enduring the stigmas of the typical mid-stage broad lip and flattened nasal tip deformities during preschool and school years.

Long-term banking is inconvenient, but experience continues to prove that *division of the nose from the prolabium in infancy*, particularly in complete bilateral clefts, results in a *lip that becomes too long* in vertical dimensions. Thus, at least in complete clefts, the second-stage shifting of the forked flap into the columella is better postponed until preschool age of five to six years. The two-stage forked flap has the added advantage of avoiding convergence of the points of five flaps all at the same time with the threat of compromising the healing at this center of scar confusion.

A CHANGE OF EMPHASIS IN PRINCIPLES

Thomas Cronin, under whom I trained for a time, for whom I have respect and with whom I occasionally disagree, stated in 1971:

Certain principles and objectives of treatment have become fairly well established. These are:

1. The prolabium should form the full vertical length of the middle of the lip.
2. The vermilion ridge, or white line of the inferior border of the prolabium should be preserved.
3. The thin prolabial vermilion should be built up with vermilion muscle flaps from the lateral lip segments but *no* lateral skin flaps.
4. Correct disparity between premaxillary and maxillary segments of the alveolar arch, preferably nonsurgically.
5. Prevent or correct, if possible, collapse of maxillary segments behind the premaxilla.
6. Early orthodontia.
7. Bone grafting to stabilize the premaxilla.
8. Lengthen the short columella.

Four other fundamental principles merit consideration and even priority.

1. *Premeditated adequate columella planning will avoid the need for later lip reentry.* Mere paring of the edges of the prolabium is wasteful; reduction of the prolabium to natural philtrum size and shape is desirable; the columella is too damn short, so the forked flap banking maneuver is indicated.

2. *The creation of continuity of the prolabium* with the lateral lip elements involves joining lateral mucosa for sulcus, muscles for function behind the prolabium and "white roll" and vermilion for scar camouflage and cupid's bow below the prolabium.

3. *Early and permanent nasal alar base positioning* is ensured by primary medial rotation and advancement of these bases with their denuded tips or subcutaneous pedicles attached to the septum for stability.

4. *Total division of the prolabium from the nose should be postponed.* Eventual picking up or unfolding of the banked forks and alar bases to make possible their medial swing across the nasal floors and up into the columella will achieve columella construction and nasal tip release. A banked homologous septal cartilage strut may be used for extra temporary support. This probably should be accomplished before school age of five to six years to avoid impeding physical and psychological growth.

TWENTY-ONE STEPS

Thus the steps in the management of bilateral clefts of the lip and palate can be increased to 21.

1. Practical but undercorrected positioning of the premaxilla in preparation for lip surgery (A, B or C).
 - A. Elastic band to headcap.
 - B. Orthodontics (McNeill-Burston-Hotz-Rosenstein).
 - C. Mechanical squeezer (Georgiade-Latham).

Ears, palate and lip

2. At two to four weeks insertion of ear tubes if indicated.
3. At the same time closure of the soft palate (when possible).
4. At the same time definitive lip closure.

Definitive closure

5. Use of any excess prolabium mucosa to cover the premaxillary raw area.
6. Reduction of prolabium to philtrum dimensions (5 to 8 mm.) by paring forked flap from lateral sides.
7. Turndown of inferior prolabium vermilion with cupid's bow

- incision for use as invisible backing to the central tubercle.
8. Freeing the prolabium from the premaxilla.
 9. Turnup of cleft edge mucosal flap from upper portion of lateral lip segments to be used to fill defect in lateral vestibule following release of the alar base from the maxilla.
 10. Remaining cleft edge mucosa carrying a white roll ridge cut as a full-bodied flap from each lateral lip element. If the prolabium mucocutaneous ridge is *outstanding*, then this ridge should be preserved and need not be brought with the lateral flaps.
 11. Lateral lip element freed from the maxilla and skin edge freed slightly from the muscle.
 12. Advancement of the mucosa and muscle of the lateral lip elements to join each other in the midline in front of the premaxilla and behind the prolabium to obtain an upper sulcus and muscle continuity.
 13. Replacement of the prolabium over the joined muscles and between the skin edges of the lateral elements the full vertical length of the lip with *no tension* on the skin scars.
 14. Dimple of the philtrum created.
 15. Alar bases cut free from the lateral lip elements as full-bodied flaps and each flap divided into two components, a skin flap and a subcutaneous-muscle flap.
 16. The deeper subcutaneous flap advanced to its mate of the opposite side and sutured to it at the nasal spine with Vicryl; alar bases thus advanced on top of the lip advancements with permanent reduction of the alar flare and fixed positioning of the alar bases.
 17. Banking the forks by suturing them in pyramid fashion to the alar base skin flaps in the floor of the nose, or better between the lip and the alar bases in whisker fashion.

Columella lengthening

18. Nasal tip release by secondary advancement of the forked flap and alar bases to form nostril sills and columella. (The timing of this maneuver may vary from six months to six years.) This staged forked flap avoids the five points of the

one-stage procedure. A banked homologous septal cartilage strut can be used for early support in the child, and at 15 to 16 years during final scar revisions an autogenous septal strut can be added.

Note: Mersilene suture has been replaced by Vicryl because of occasional postoperative infection and "spitting."

Palate

19. Closure of the hard palate with vomerine flap at 18 months. If premaxilla is well within the arch, closure of the alveolar clefts includes any fistulae.
20. Lengthening of palate if necessary after four to five years of age with island flap or reduction of the velopharyngeal aperture with a pharyngeal flap.
21. Cancellous bone grafts into the alveolar gaps at eight years.

This is not a 21-point blueprint for all cases. The principles are there to be adapted to the specific problems. Dentist Simon Hullihen was still paring the cleft edges and approximating them with Paré-type transfixing needles and yet he realized the importance of variation for the individual case. He wrote in 1844 in the *American Journal of Dental Science*:

But in addition to these general indications a particular plan should be adopted in each operation with the view of making a well formed lip, and this plan must be made with a strict reference to the peculiarities of the case, and be carefully and plainly marked out upon the lip before the operation is commenced.

Again it is important to reflect on those who have had any specific influence, large or small, on the final design being described, and this is their credit line in alphabetical allocation:
AdamsBerkowitzBrowneBurstonCollitoCroninDesaultDuffy
FaraFederspielGeorgiadeGilliesHortonKernahanLathamMiry
MirMuirOnealRandallSchultzWalker.