

45. Secondary Lip Correction After Rotation and Advancement

NOT ENOUGH ROTATION

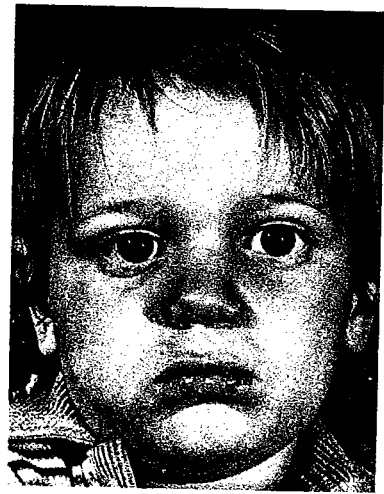
THE most common complaint by surgeons using the rotation-advancement method has been shortness of the vertical height of the lip along the scar. This can occur temporarily in a carefully planned and well-executed case. Yet, within six months, the contracture will relax and the cupid's bow will settle into a balanced position. If this is not what happens, then either the primary rotation or the paring of the cleft edge of the lateral segment (or both) was inadequate. If the fault was in the lack of rotation, the rotation was not extended far enough across under the base of the columella and probably the back-cut was not used. In such cases there need be no panic as no landmarks or "bridges have been burned." Merely excise the total scar and re-rotate with a back-cut and then pare the lateral segment to match the rotation edge. Be careful not to shorten the distance more than a millimeter or two from the peak of the bow on the cleft side to the commissure as compared to the normal side.

Hogan and Converse state:

Correction of the lip repaired by the Millard technique, when the lip proves too short, may simply require the repetition of the operation with more attention to those details of the technique which can lengthen the lip such as separation of the vermillion from the lip on the lateral flap to increase the vertical distance of the lateral segment.

Of course, the surgeon's best chance is at the first operation, but here are a couple of secondary examples.

This patient had had an attempted rotation-advancement in

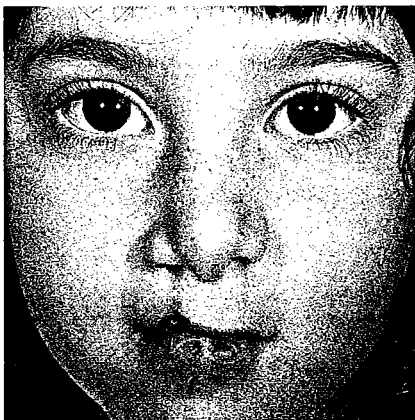


6 months later without surgery

infancy in New Jersey and at four years of age revealed inadequate rotation and advancement.



On re-rotation and advancement, a scar muscle flap was inserted high into the lateral element, iliac cancellous bone was grafted to the maxilla under the alar base, the alar base tip was denuded and sutured to the septum and alar rim revision was accomplished.



This four-and-a-half-year-old girl was born with a unilateral cleft of the lip. At four months of age the lip cleft was closed in New York with what was reported to be a rotation-advancement method. Inadequate rotation resulted in a straight-line scar and its contracture. At least the landmarks were present. Scar excision was followed by extension of the rotation with a back-cut, advancement of flap c into the columella, mucocutaneous white roll ridge interdigitation, alar web excision and excision of mucous pits of the lower lip.



NOT ENOUGH ADVANCEMENT

An Oriental boy from a Caribbean island who, after a rotation-advancement procedure, revealed adequate rotation but insufficient advancement.



Scar excision, unilateral columella lengthening, independent alar base and lateral lip advancement and trimming of the vermillion free border produced a more natural result.



This type of secondary drift of the alar base finally stimulated the procedure of suturing the denuded tip of the alar base to the septum.

TOO MUCH ROTATION

If the rotation has been too extensive, again total scar excision will allow the medial element to be de-rotated partially and sutured in correct position. The vertical height of the lateral

element then may have to be reduced to match the rotation edge. This maneuver can be done by a horizontal excision of the required amount of lip just under the nasal base.

In all my rotation-advancement cases only one is recalled that was actually rotated a little too far. At two and a half years, this patient presented about 2 mm. over-rotation, and at three and a half years the discrepancy persisted. A deep transverse elliptical excision of skin, scar and subcutaneous tissue along the lip join with the nostril sill and alar base achieved a long-range lift of the mucocutaneous border, as seen at age seven years.



2½ years



3½ years



7 years

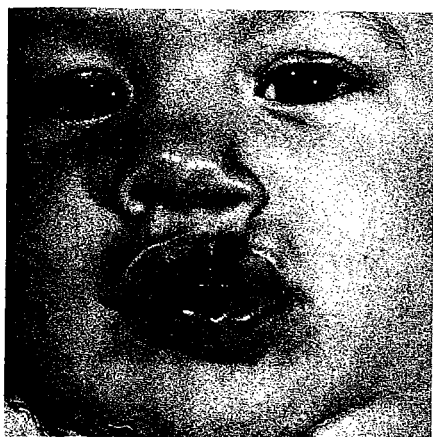
It is better to excise a scar that is already present and pull up rather than have a little easier lift but at the cost of a scar along the upper edge of the mucocutaneous ridge or, worse, remove the ridge itself.

LATERAL ELEMENT TOO LONG

Another possible problem can occur if the lateral lip element is left too long in the vertical dimension. This is far more likely in incomplete clefts.

An incomplete cleft without severe discrepancy in the height of the bow peaks on the non-cleft side presented a long, full-bodied lateral lip element. During the rotation-advancement closure the cleft side nostril floor-alar base was cut as a flap. After denudation of its medial tip, the flap was advanced across and sutured to the septum, maintaining excellent permanent alar.

base position. During the primary procedure the robust lateral element was pared sparingly and turned out to be too long.



1 month

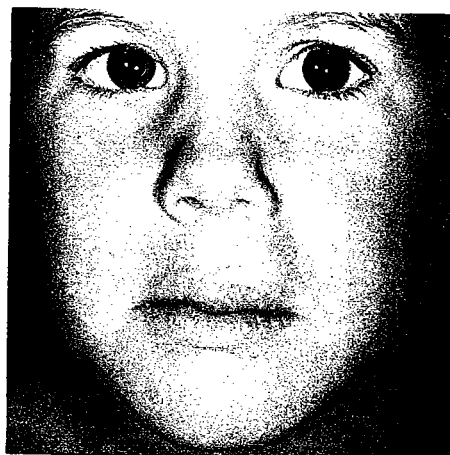


8 days P.O.



1 year

Two and a half years after primary surgery, the rotation scar was excised for access to the lateral muscle bulge, and the muscle was freed on both sides. A high transverse elliptical excision of skin, scar and muscle just along the lateral lip join with the nostril sill and alar base allowed the entire lateral lip component, including the muscle, to be lifted into slightly better symmetry. The excess vermilion along the free border was trimmed to balance the normal side.



3½ years

In my own primary cases, there has never had to be a total secondary scar excision with a de-rotation or re-rotation, but one of the dividends of this approach is that such is always possible.

RADICAL PARING OF LATERAL ELEMENT

It is important not to pare too far laterally along the lateral lip element. Here is a rotation-advancement, seen in our clinic recently, which was pared too far, resulting in shortening of the distance from the bow peak to the commissure on the cleft side along with purse-string tightening of the free border of the upper lip accompanied by relative protrusion of the lower lip.



*may
require
alve
later?*

Radical paring can happen with any method but is not necessary in rotation-advancement. It should be avoided by careful measurements as it is rather difficult to correct.

INARTISTIC SCAR PLACEMENT

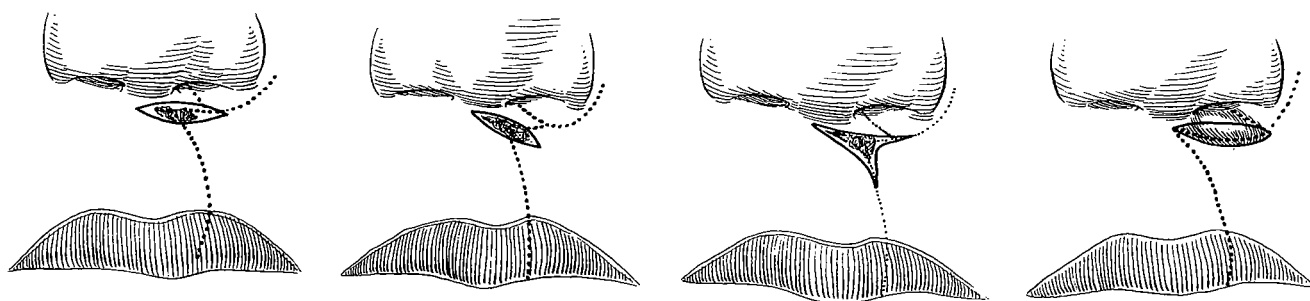
If the surgeon does not understand the artistic plan of the rotation, he may cut his rotation incision too straight or too oblique, thus placing the scar of union in an unattractive, unnatural position. This is the surgeon's fault, but the correction is not so easy. Such placement is better avoided than corrected.

Another danger in rotation is failure to ascend to the base of the columella. If one cuts across too low in the lip, a great advantage of this method is lost, and scars are placed in far more noticeable positions.

It is also important that the circumalar incision of the advancement flap hug or slightly infringe upon the alar base so that the scar lies in the normal nasal alar crease.

Onizuka, in 1966, after many hundreds of rotation-advancements, diagrammed simple excisions for correction of minor scar

deformities that seemed to occur postoperatively for him. The most common error was located in the area of flap c, which acted as a trapdoor when used in the lip.



Of course, when flap c is shifted into the columella, as is now advocated, it is less likely to cause these problems.

MAKING THE LIP TOO LONG

Misunderstanding previous descriptions of the rotation incision, and in an effort to achieve enough vertical height, some surgeons have extended the rotation, not as a true rotation with a cut-back, but straight across the columella base and into the philtrum column on the normal side. This extension will give two secondary deformities. First, it will spoil the balanced effect of the philtrum because the scar on the cleft side does not correspond to the normal side and meet in the midline at the columella base but instead overrides the cleft side with an unnatural oblique scar. Second, and even more distorting, is the true lengthening in vertical height of the entire lip beyond what is normal for this lip.

Correction requires, again, total scar excision and de-rotation and de-advancement, with a suturing together of the incision that transgressed into the normal side. After this draw-back, the cut-back is used to gain unilateral length and the lateral segment is freshened to match this length.

If the total vertical height of the upper lip is the only deformity noticeable, the lip can be shortened by a transverse full-thickness excision of lip along its join with the nose where

scars are already present and can be camouflaged in the natural nasal creases. The only other way to shorten the lip is by a modified Gillies cupid's bow procedure, but if the bow and free border are relatively normal, this approach is too radical. When there is no bow present, there is more justification as some symmetrical bow is better than no bow.

A RELATIVELY TIGHT UPPER LIP

It has been noted repeatedly that most of the standard primary lip operations can end up with a tight upper lip in relation to the protuberant lower lip. When the discrepancy between the two lips is noticeable, the possibility of a lip-switch flap must be entertained. Straight-line and Blair-Brown triangular flap closures, in my experience, produce the greatest number of tight upper lips requiring lip-switch flaps. A tight upper lip occurs occasionally in a LeMesurier or a Tennison, but the need for a lip-switch here is far less. I have not yet found a lip-switch flap necessary after rotation-advancement, but why some lips are tight and others not is still a mystery and the possibility always exists. *The lip-switch is the flap of last resort.*

OTHER SECONDARIES

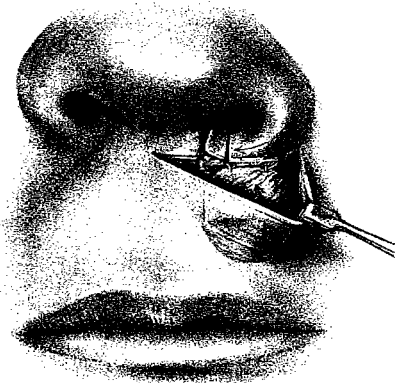
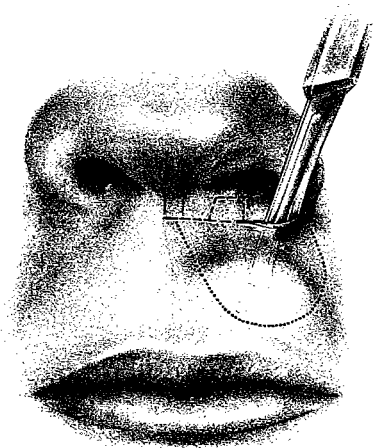
My personal secondary corrections have involved a myriad of minor revisions including partial scar excisions, midline vermilion tubercle increase or reduction and other revisions of the redundant or deficient vermilion free border. These have been noted again and again in the unilateral cleft case histories, and constantly the primary design was modified to stack the odds against their recurrence.

MUSCLE DISCREPANCIES

As already pointed out, not only does the lateral lip element have an abnormal bulge of its muscle but the fibers run parallel to the cleft edge, sweeping up toward the nasal ala. The muscle,

however, is often attenuated in the area just below its join with the alar base. As this area is vital in rotation-advancement, correction of the discrepancy during the primary operation has been developed and described. If that has not been accomplished initially, then secondary correction, although more difficult, is still indicated and has been discussed in Chapter 41.

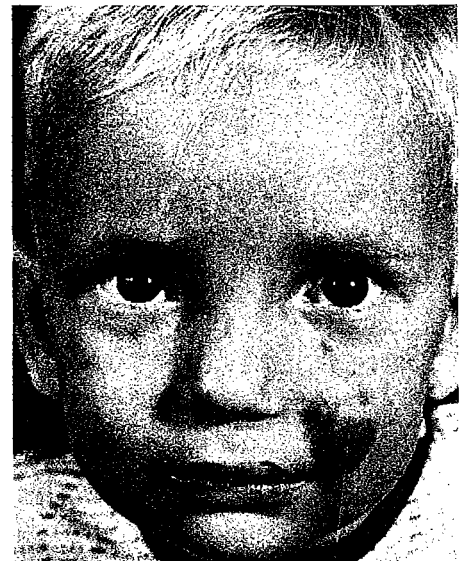
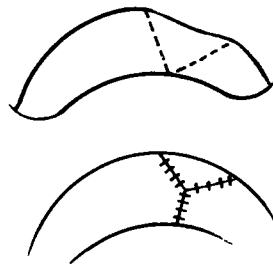
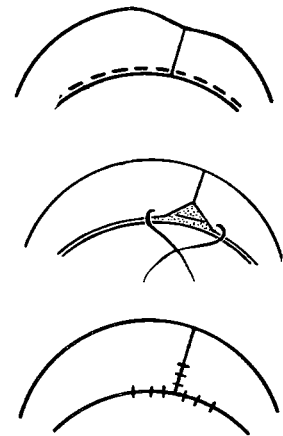
Here is a case in which the original cleft deformity must have had a lateral element with a hypertrophic muscle bulge and a muscle and contour deficiency above it. Rotation-advancement in Wisconsin positioned the cupid's bow, but no provisions were made for primary correction of lateral lip contour. As the alar base required further secondary medial advancement, this provided an incision which gave access for skin undermining, the turning of a thinning flap from the muscle bulge up into the area of depression with a mutual leveling of contours.



VERMILION DEFICIENCIES

Here is a relatively early case, reported in *Plastic and Reconstructive Surgery* in January 1964, in which advancement of the deficient lateral lip element into the rotation gap presented, postoperatively, attenuation of the cleft side vermilion free border and slight contraction of the skin scar with a lift of the bow peak on the cleft side. As the vertical skin length had been fashioned correctly, time released the scar pull and balanced the bow but the vermilion attenuation persisted.

First, a bilateral mucosal advancement from the upper sulcus gained some improvement, but a tertiary V-Y roll-down of posterior mucosa was necessary to achieve free border symmetry.

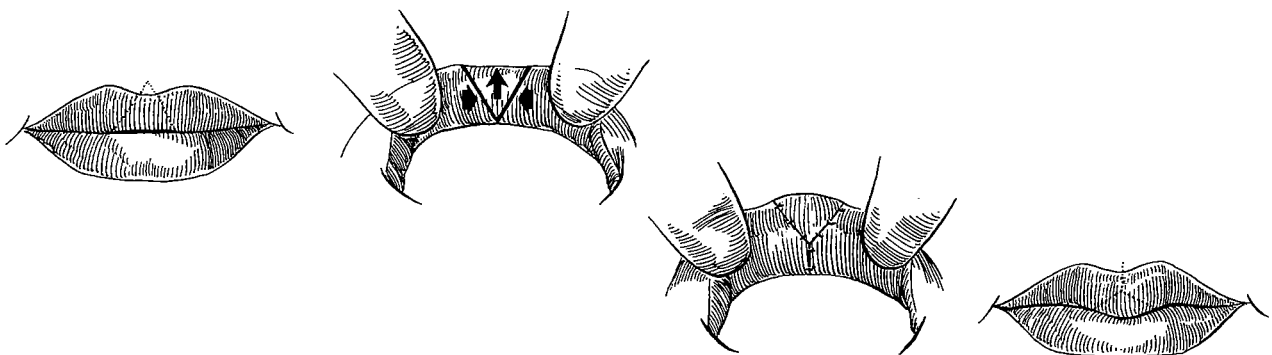


This three-year-old Cuban boy first had an adhesion to see whether any improvement would follow such late action. As expected, the change was minimal, so eight months later a rotation-advancement procedure was carried out which resulted in slight cleft side vermilion deficiency. A simple secondary wide V-Y posterior mucosal flap rolled out the free border into reasonable symmetry. Final nasal correction awaits maturity.



ENHANCING THE TUBERCLE

In some instances the vermilion free border is well balanced on both sides but the midline tubercle is deficient. Then the mucosa, just superior and posterior to where the tubercle should be, is advanced down in V-Y fashion to produce a fullness.



Experience with the rotation-advancement method and study of consistent minor secondary problems over the years have caused the incorporation of refinements, extensions and now improvements in the detail of the primary surgery in order to bypass subsequent secondary disparities. Consequently, they are appearing less and less.

TIMING AND SECONDARY SURGERY

In incomplete lip clefts, minor revisions can be completed at six months or preferably at one year after primary rotation-advancement. In complete clefts, secondary revision of the lip and nose can be accomplished during the hard palate closure at about 18 months, and any obvious further revisions should be completed before school at about five to six years. The final corrective nasal surgery should be postponed until about 16 years of age, and the last lip touch-up work, of course, can be carried out at this time.