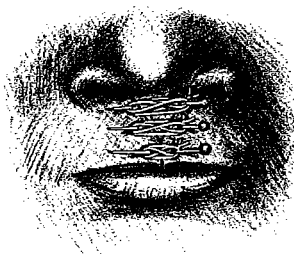


8. *Transposition of Lateral Flaps Below the Prolabium*

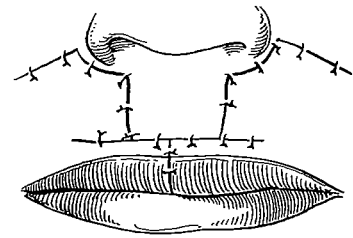
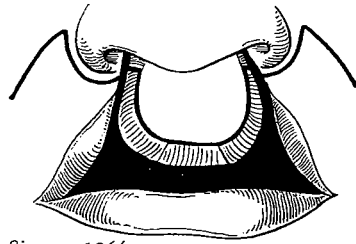
MANY cleft lip surgeons of the last half of the nineteenth century and the first half of the twentieth, conscious of the overall vertical shortness of the frontonasal component, focused primarily on what appeared to be a short inadequate prolabium. As Pancoast stated in 1844 in reference to the handling of the prolabium in bilateral cleft lip:

If the middle portion, as is very commonly the case, should not be long enough to reach the labial margin, the wound left after the introduction of the hare-lip pins will have the shape of the letter Y.

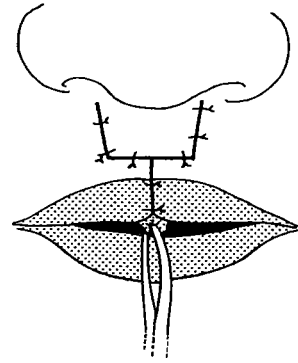
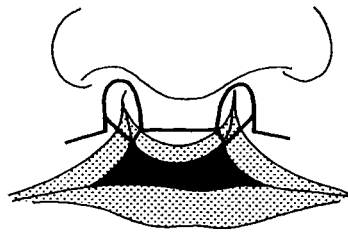
Bolstering the prolabium from below with skin flaps from the lateral lip elements seemed to realize two immediate assets: (1) The prolabium was lengthened; (2) because the prolabium was not forced to form the complete vertical length of the center of the lip, less downward pull was exerted on the entire frontonasal component, permitting the base of the short columella to ride a bit higher with an insignificant release of the depressed nasal tip. The result was a kind of labial and nasal communal sharing of tissue, neither component being satisfied. This tempting compromise with apparent but inadequate advantages encouraged a host of surgeons over a century to adapt in the bilateral cleft by doubling their unilateral lateral flap. As it turned out, this principle, not being correct in unilateral clefts, compounded their error in bilateral clefts, the damage being far more than twice as much.



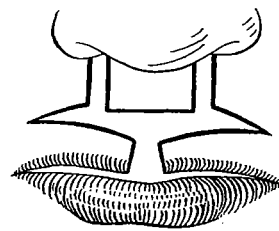
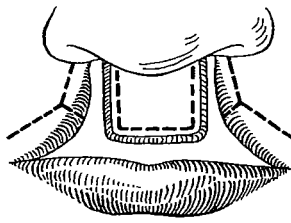
*Typical
Commune*



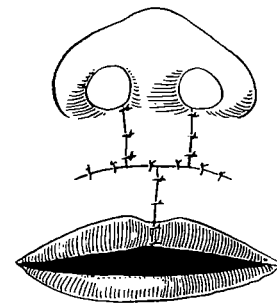
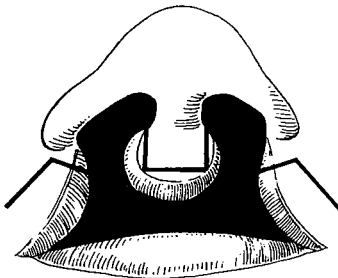
Simon, 1864



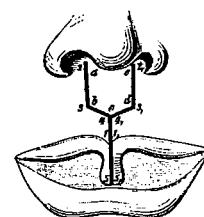
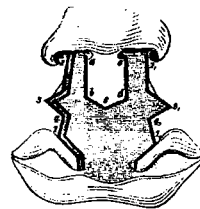
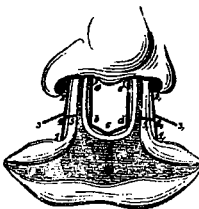
Jalaquier, 1880



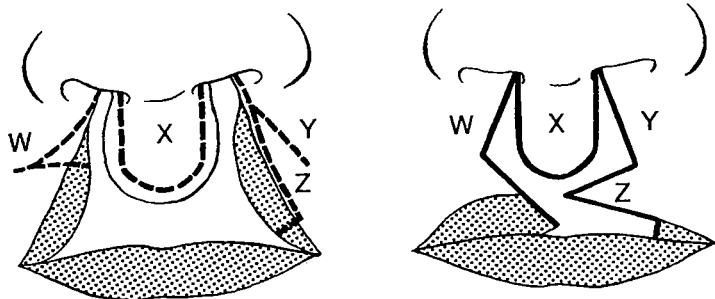
König, 1881



Maas, 1882

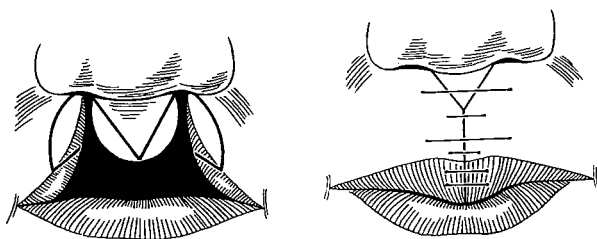


Hagedorn, 1884



Owen, 1890

William Rose of King's College Hospital, London, in 1891 described his approach to bilateral cleft lip, which, as he wrote, should be carried out according to the principles enunciated for the single harelip operation. . . . The central tubercle is pared in a V-shaped manner, and the lateral segments by curved incisions from above down to the mucocutaneous junction, and then obliquely upwards and inwards. Only the apex of the central portion is included in the completed lip. The long cross lines represent the position of the wire stitches, and the short ones of the catgut sutures.



Rose, 1891

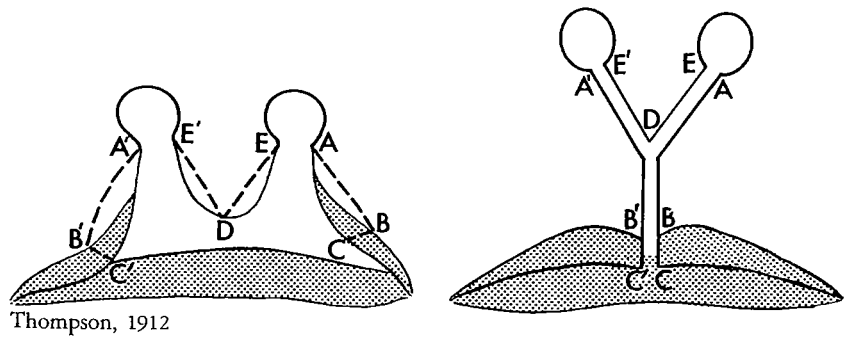
He advised lateral undermining:

A free detachment of the lip from the maxillae by undercutting should be the first step, and this must be accomplished thoroughly in these bilateral cases.

Rose also defended the logic of his use of the prolabium:

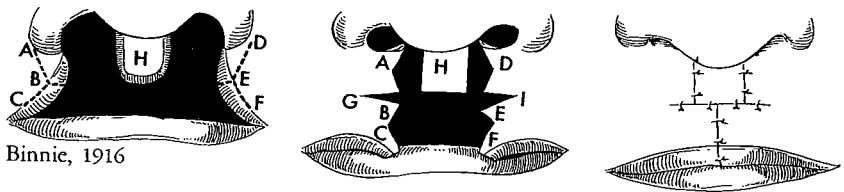
The treatment of the central part of the upper lip demands special notice. In the first place, it is quite evident that to attempt to draw it down to any extent between the flaps would have the effect of depressing the point of the nose and producing an unsightly lateral dilatation of the nostrils, for it must be remembered that this stunted portion of tissue represents in most cases not only the central part of the lip, but also the columna nasi. . . . Consequently, it is only the extremity of this philtrum which needs preparation, and this is effected by cutting it into a V-shape. . . . The outer segments can then be brought together in the median line.

There was a similarity between Rose's approach and the later Thompson method.

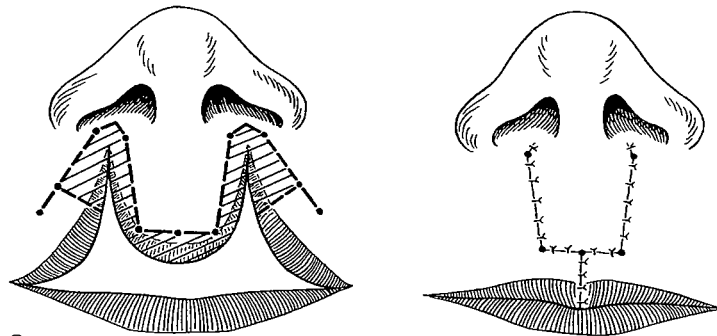


Thompson, 1912

Then Binnie designed an even more frightening procedure.



Binnie, 1916



One-stage Veau II as diagrammed by W. G. Holdsworth, 1951

B A R S K Y

Arthur Barsky has long been known for his teaching. According to Bernard Simon, one of his students, Barsky's philosophy was exemplified by the saying:

Give a man a fish and he will eat for a day. Teach a man to fish and he will eat for a lifetime.



Arthur Barsky

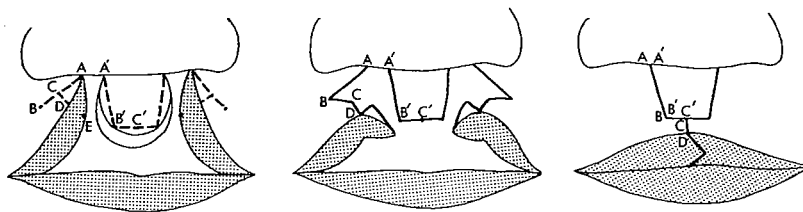
At New York Mt. Sinai Hospital, while treating the Japanese girls burned in the Hiroshima atomic bombing, he took the precaution of having two teams of Japanese surgeons working

with him. Then in 1966, acutely aware of the ravages of war, he followed the old proverb

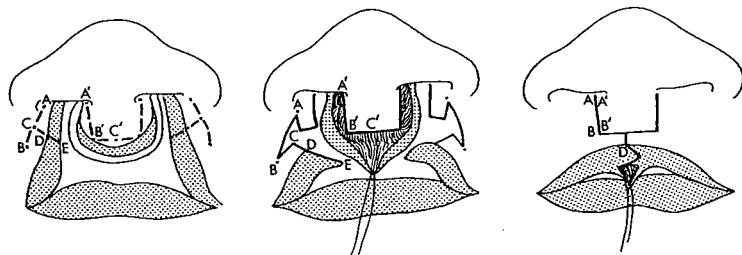
It is better to light a candle than to curse the darkness

and started Children's Relief International. He designed, built and staffed a children's hospital in Saigon devoted to the treatment of victims of war and congenital anomalies, with the ultimate plan of eventual Vietnamization.

Arthur Barsky's early training with J. Eastman Sheehan, who he said "would try anything, sometimes not always advisable," plus his own skill and zeal for teaching possibly backfired in a minor way in bilateral clefts. In his good 1938 book Barsky published a bilateral lip design which achieved union of the lateral skin and vermilion flaps beneath the inferior edge of the prolabium after repositioning of the premaxilla by the method of von Bardeleben.



From 1952 for many years, Barsky was Chief of Plastic Surgery at Mt. Sinai Hospital and later at Albert Einstein Hospital. His teaching in the New York area had great influence on many surgeons treating bilateral clefts and was partly responsible for perpetuating this unnatural approach. Finally, in 1964, in a book with Sidney Kahn and Bernard Simon, he changed the design slightly, calling it the Barsky-Hagedorn operation, and made special mention that the lateral flaps were rectangular in shape. The prolabium vermilion was used for lining if needed. As the principle remained the same, so did the results.



BLAIR AND BROWN

The majority of cleft lip surgeons, as previously mentioned, with or without good reason, had been forcing their unilateral designs on bilateral clefts with more or less unsatisfactory results. When Blair modified Mirault and Brown modified Blair, most surgeons joined the St. Louis "bandwagon" and along with Brown introduced a pair of triangular flaps under the inferior border of the prolabium.



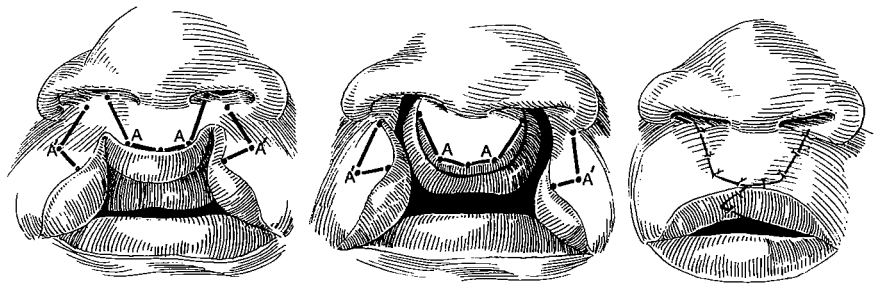
Barrett Brown

In 1947 Brown, McDowell and Byars admitted that the surgical repair of double cleft lips is about twice as difficult as in single clefts and the results are about half as good.

In principle, they stated,

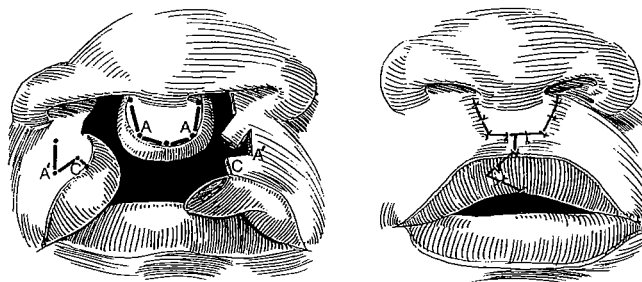
The prolabium is the central segment of the lip and must be used in this position in the closure. The upper part of it is sometimes advanced secondarily into the columella at three or four years of age, but it is best not to do this primarily.

Many of the features of the modified Mirault operation for single cleft lips were adapted for closing the double clefts.



They described variations:

When the prolabium is unusually large or long, so that the Mirault flaps under it might result in too long a lip, 2 or 3 mm. of skin can be excised from the bottom of the prolabium to shorten it. If the prolabium is tiny, the lateral flaps may be designed in a rectangle to elongate the lip.



In 1966 Frank McDowell reviewed six late cases of bilateral clefts (13 to 23 years) treated by the 1947 Brown-McDowell-Byars double triangular flaps. In reference to incomplete bilateral clefts he stated:

These are probably the most difficult of all cleft operations. Partial double clefts have attenuated vermilion generally placed in the wrong direction, and a great tendency for single or double whistling deformity to result.

*It's the
method
not
the case.*

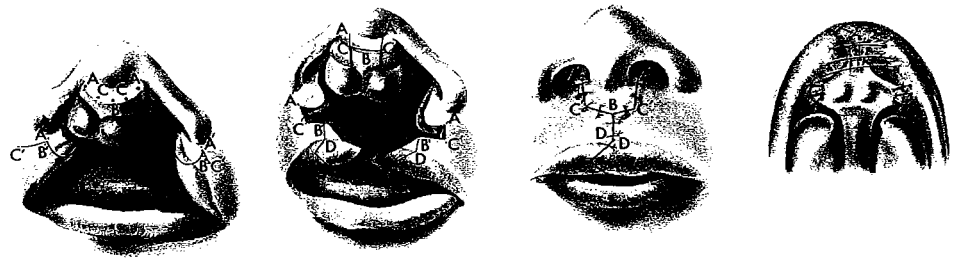
In complete bilateral clefts, when compared to the original deformity, the late results were reasonable. The lip lacked a cupid's bow and natural contour, but because of the smallness of the triangular flaps at least the lip was not usually too long in vertical dimension. Either the columella was a little short of ideal or it had been elongated to near normal length at the expense of a midline lip scar left in its wake. McDowell did admit:

Occasional patients will have tight upper lips and loose lower lips in spite of all surgical intentions to the contrary, and improvement will result from cross-lip flaps.

This simplified Brown-McDowell-Byars approach, taught with blue-dot clarity, attracted students from all over the world, and many have clung to the method ever since. Fogh-Andersen was in St. Louis in 1950 when I was, and evidently Barrett Brown's dogmatic teaching was deeply ingrained. Over all these years he has had a monopoly on the clefts of Denmark and, having never veered from the double triangular flaps, now has a 20-year controlled series. If you wish to see how bilateral clefts were once treated in St. Louis when it was the cleft lip mecca, take a trip to wonderful, wonderful Copenhagen.

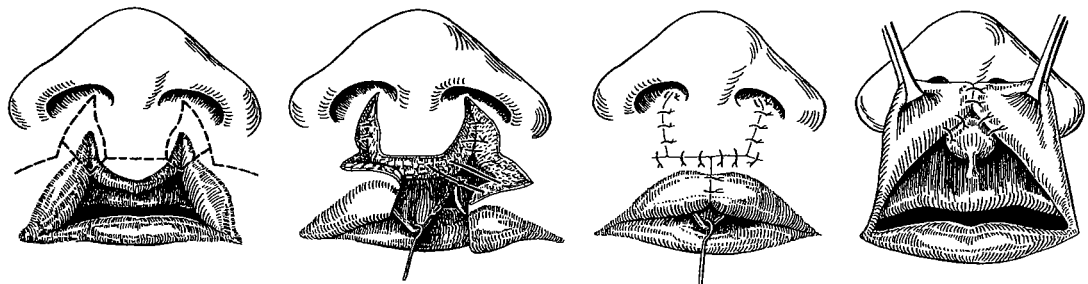
In 1959 Bauer, Trusler and Tondra, having used the "Brown" approach for years, cited horizontal and vertical shortness with vermilion thinning in late results, which finally forced them to discard this method.

Padgett and Stephenson in 1948 at the University of Kansas School of Medicine endorsed the same principle but advocated the Mirault-Blair design, which placed more skin beneath the prolabium.



W. G. Holdsworth in 1951, while still at Rookdown House, Basingstoke, diagrammed what he called a one-stage Veau II, noting:

This operation is feasible if there is little nasal deformity.

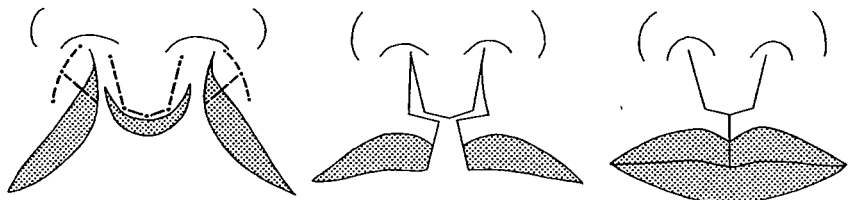


LEMESURIER



LeMesurier

Following his dramatic entrance on the plastic surgery scene in 1946 with the Hagedorn quadrilateral flap in unilateral cleft lip, A. B. LeMesurier began to apply the same principle by doubling it against the prolabium in bilateral clefts. Theoretically, shaping the distal end of each lateral quadrilateral flap slightly wider could produce the effect of an artificial cupid's bow and gave the method a slight edge over other similar procedures.



Evidently LeMesurier did not use this trick and actually kept his lateral flaps extremely narrow. Surgeons who were pleased with it in single clefts quickly adapted it to double clefts. The criticism of this approach was the same as of all other methods which employ lateral skin flaps transposed below the prolabium. It left unnatural scars and inferior transverse narrowing of the lip, usually with excess vertical lengthening.

LINDSAY MEASURES LEMESURIER

At the 1973 Cleft Palate Congress in Copenhagen, William K. Lindsay of Toronto gave a late follow-up evaluation of LeMesurier's bilateral cleft lip and palate cases treated by his double quadrilateral flap. From the podium, as light reflected from his snow-white hair, Lindsay explained with a whimsical twinkle that these were mostly LeMesurier's cases, as he himself was too young for such long-term results. He reported a general grading of the appearance of the lip and nose as 18 percent good, 64 percent fair and 18 percent poor. The upper lip often revealed a side-to-side tightness, an unnatural quality and a flatness as compared to the relatively protuberant lower lip. Surprisingly, in LeMesurier's cases, he did *not* find the vertical length of the lip longer than normal. The noses, with typical bluntness of the tip, wideness of the alae and both shortness and width of the columella, rated less well and were the source of more complaints from the young adult patients.

an unusual finding

LeMesurier's trick for preventing a long lip with his flaps can be deciphered in excerpts from his 1962 book:

But in some cases the lip may be made too long and may later become still longer. To avoid this excessive length, the lip, at operation, should be made shorter than the average but still within acceptable limits. This can be done by making the vertical cuts lateral to the clefts reasonably short. These cuts have to extend down far enough to make the usable parts of the flaps of sufficient length to cover the cut end of the prolabium, but the prolabium does not have to be kept particularly wide. In most cases, with extensive freeing on both sides the two lateral parts of the lip can be sutured to the cut sides of the prolabium with little tension, even if the *prolabium is cut as narrow as 8 to 10 mm*. With the prolabium fairly narrow, the flaps do not have to be long. . . . With the flap operation, the lip can usually be made slightly shorter than average, with no great vertical fullness of the lateral parts and no great tendency to increase later in length.

creating side to side tightness

there go the columella forks!

Here are photographic records kindly forwarded by Lindsay of a bilateral cleft lip operated on by A. B. LeMesurier himself at the Hospital for Sick Children, Toronto. The operation was carried out at age six months, which was later than usual. The follow-up at 13 days postoperative, then at 11 years and finally at 18½ years gives a fascinating progressive study of the result of his operation on this patient.



6 months



13 days postoperative



11 years



18 1/2 years



Of course, LeMesurier himself, unlike many others using his method, was able to avoid undue vertical lengthening of his lips by the conservative width of his lateral flaps. Yet transposition of his quadrilateral skin flaps below the prolabium not only accounts for transverse lip tightening but depletes the lip skin bank for columella lengthening and explains the flat nose and short, wide columella.

EMPHASIS ON ALAR CORRECTION

As in his unilateral clefts, Jean-Lucien Grignon of Hôpital Saint-Antoine, Paris, stated:

In our hands the Mirault-LeMesurier quadrilateral flap appeared particularly satisfying for the inferior part of the lip.

He then turned his attention to the persistently flaring ala. He expressed his feeling that the nasal deformity caused by the



Jean Grignon

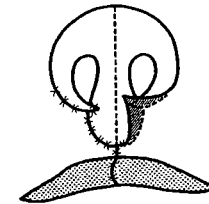
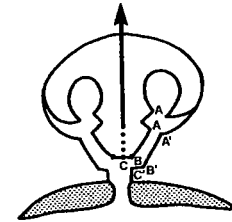
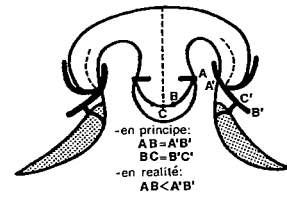
original retroposition of the alar base attached to the cleft side of the maxilla increases with growth and gives argument for his "disinsertion" of the alar base, "hyper-rolling up" of the ala and insertion of its tip into a subcolumellar notch. Circumalar incisions free the alar bases from the lip elements. Then, as he explained,

Nasal mucoperiosteum, attached to the ala, is cut along the pyriform and lateral bone segment edge as to be rolled up with the ala.

He makes a subcolumellar incision for the advancement of the tip of the alar base and says, in clarification:

This notch, of which the depth is variable, establishes a complementary lock for the closure, receives the ala and fixes it in a suitable rolling up position.

In one primary procedure Grignon detaches the alar bases from the lip and maxilla and advances them into subcolumellar incisions. In the bilateral cleft he can achieve symmetrical and narrowed nostrils but with only minimal columella lengthening. Unfortunately, he chooses to introduce quadrilateral lateral lip flaps below the prolabium, incurring the same disadvantages of lengthening the lip vertically, tightening it horizontally and placing scars in unnatural positions.



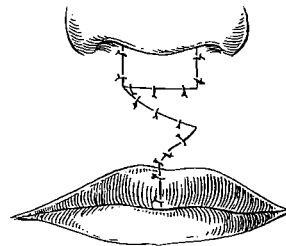
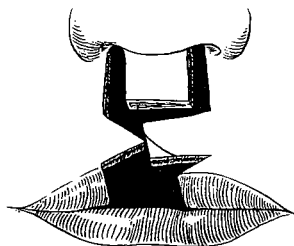
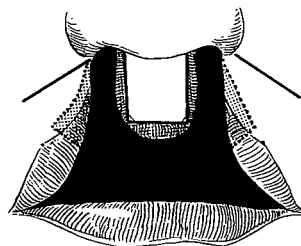
a tiny rotation

OBUKHOVA

In 1955 Lidiya Obukhova of Samarkand adapted her long lateral triangular flap to bilateral clefts. After trimming the prolabium to a box square and without downward tension on it, she not only transposed two triangular flaps below it but interdigitated them! Although Obukhova's bilateral nasal tips would not be the flattest, it is conjectured that her lips must be the longest, if not the grandest, in all of Russia.



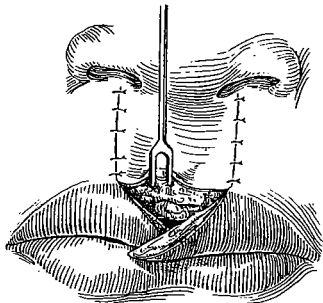
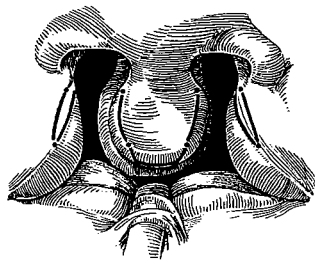
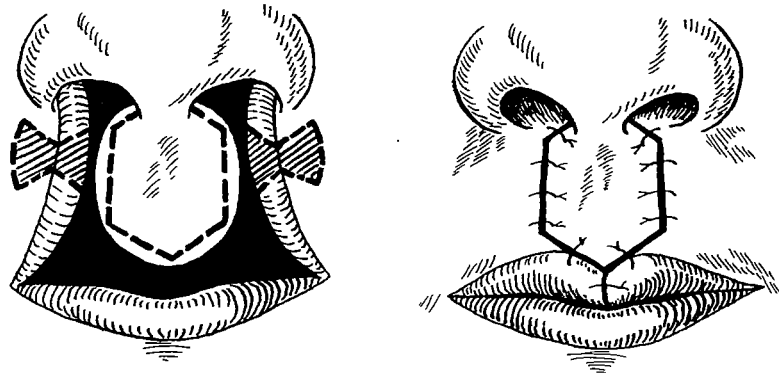
Lidiya Obukhova



LIMBERG

Professor Alexander Limberg, winner of the Order of Lenin, created a plastic surgery unit in Leningrad sparked with satellites of enthusiastic women including his own daughter. He was in the habit of keeping three tables working in one room, and invariably at least one held a cleft lip patient.

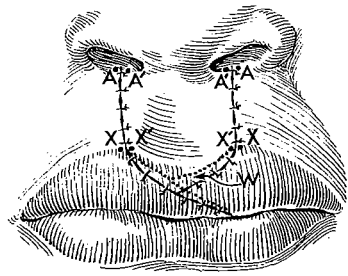
Probably the most artistic of this category of operations is the bilateral lip plan of Limberg. An impractical aspect of the procedure entails lengthening of the lateral lip components even though these elements are usually too long in the first place. His design ingeniously creates a Collis flap for the nasal floor and a small Mirault-Blair-Brown flap for the lip, with skin scars resembling those of Denis Browne and in fact a Browne-type exaggerated cupid's bow. Whatever else this operation achieves, the creation of an inferior pointed skin triangle in the center of the cupid's bow deserves consideration.



GEORGIADÉ

The most conservative modification of this general design seems to be that presented in 1970 by Georgiade of Duke University Medical Center. At least he de-epithelialized the skin he introduced below the prolabium. In principle, his modification is similar to the method described by Cronin in 1957, especially the variation accredited to his preceptee, T. A. Cresswell, which denuded the vermilion flaps and introduced them beneath a triangle of prolabium vermilion. Georgiade turns down flaps of mucosa and skin from the sides of the lateral lip elements. Yet, instead of introducing these flaps below the prolabium in toto, he

de-epithelializes the skin portion, turns up the prolabium vermillion and interdigitates his lateral flaps "half way" under to bolster the central portion of the free border vermillion and prevent a "whistling deformity." The lateral lip muscle and mucosa have not been united behind the prolabium, the columella has not been lengthened and a patch of prolabium vermillion is still visible.

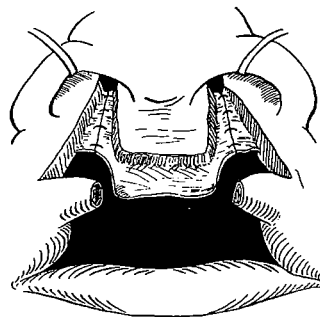
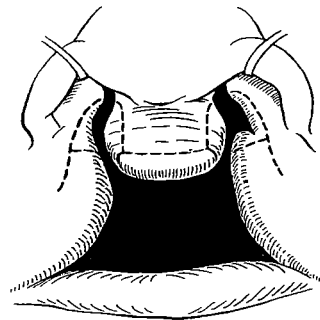


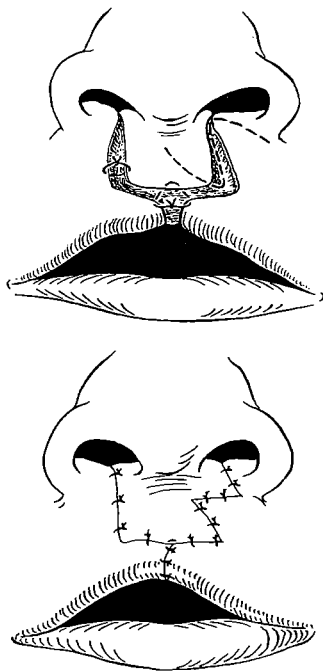
A HAPHAZARD HYBRID

In March 1973 an article entitled "Single-Stage Repair of Bilateral Cleft Lip" was published in the *Archives of Otolaryngology*. During a quick perusal of the diagrams I could not believe my eyes and found with relief that the author was unknown to me, a C. T. Yarrington, Jr., of the Department of Otolaryngology, University of Nebraska Medical Center, Omaha. My great respect for the recent Nebraska football teams caused me to reserve final judgment.

Yarrington started out quite well by noting the eight rules cited by Cronin and Penoff in 1971 for bilateral clefts and then proceeded to break at least four of them. Worse, he ignored other more fundamental plastic surgery principles which Cronin would take so much for granted he would never even bother to enumerate them.

Let's study this hybrid procedure, which seems to be a frantic attempt to incorporate a little bit of everyone and ends up with a maze of irreversible scarring. The skin and mucosa of the cleft edges are trimmed as lining flaps and are sutured together in what Yarrington loosely refers to as "creating gingival-labial sulcus." The misconception here is that the prolabium is still plastered to the premaxilla obliterating any true upper labial sulcus. Then lateral flaps of skin and mucosa are transposed to each other below the squared prolabium and over the turndown flap of inferior prolabium vermillion. At this point the plan is no worse than all other unfortunate methods that introduce composite flaps below the prolabium. Even his next step could pass: "The cleft on the less severely deformed side is closed in a straight line primarily." Then comes the unbelievable unilateral Z-plasty: "A





transposition of triangular flaps is applied on the more severely deformed side.”

Yarington presented one truly severe bilateral case with his results just three months later already revealing flared alae, short columella and wide prolabium with unnatural scars. It can be predicted that someone is going to be doing quite a lot of secondary surgery. The method has not created a usable upper labial sulcus, has not planned correction of the short columella, has not fashioned the prolabium as a philtrum, has not placed the scars in philtrum column positions but, most important of all, has shown complete disrespect for the coveted characteristic of *symmetry* which is possible even in asymmetrical bilateral clefts. Yarington’s conclusion gives his presentation a tone that I unaffectionately refer to as one of a sort of verbal “patent medicine cure-all.” It reads:

Although this type of repair utilizes a simple rotation-advancement of triangular flaps and straight-line closure incorporating many of the principles described by Millard and Yules in their reviews of various methods of repair, we believe that this presentation might be useful to those desiring a safe method of single-stage repair of the bilateral cleft lip over a mildly protruding premaxilla or in single-stage repairs following retropositioning of the premaxilla.

This is not a personal attack on C. T. Y., Jr., of Omaha as I do not know the gentleman. My tirade is included specifically for the sake of any E.N.T. men determined to close clefts who read this book and might take his design seriously. Cleft surgeons must be trained in plastic surgery principles; plastic surgery is *an art unto itself* but both applicable to and essential for the correction of deformities in *all* regions of the body.

After forwarding a copy of this critique to Yarington and requesting his rebuttal, I was encouraged by his response, as expressed in these excerpts, from Omaha:

I do not believe that it is unique for individuals to publish in medicine and find considerable criticism and opposition from others so, indeed, to later change their minds and alter their procedures. . . . I believe that your points are well taken in many instances. . . . I do agree that symmetry is of extreme importance and that the prolabium should be fashioned as a

philtrum and that the scars should be placed in a philtrum column position. In reviewing most recent cases, I find that in most instances these goals have been obtained. . . . While the procedure as described has been subject to modifications which in general bring it closer to the principles which you outlined . . . I see no reason to write a rebuttal.

NOT AN "IN" OPERATION

Methods bolstering the prolabium inferiorly with lateral flaps consisting of skin and mucosa really "scramble the egg." The prolabium is lengthened unnecessarily and often excessively. Unnatural scars are produced against normal lines, and this damage is irreversible. The side-to-side tightness is exaggerated by the vertical length. The columella, although not drawn down quite so vigorously, is still short, deserving further lengthening. Although it can be said that methods introducing the *least* amount of skin with the lateral flap produced the better results, this principle should, except for rare instances, be stricken from the list of recommended procedures.

OBSOLETE