

38. Lengthening the Columella with Central Lip Tissue

PROLABIUM IN THE LIP

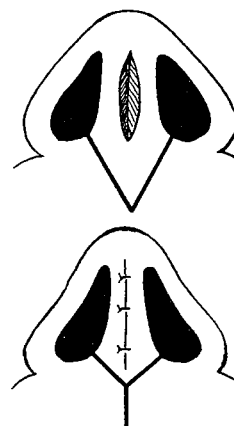
IF the prolabium was incorporated into the full vertical length of the lip, the lip probably will have adequate width and length. In fact, in time the muscular lateral lip elements will stretch the muscleless prolabium wide and flat. Victor Veau complained about this aspect:

The principal cause of the mediocre results obtained in bilateral cleft lip repair is the absence of muscle in the prolabial segment of the lip. One can hope for contour and shape approaching the normal only if the lip contains muscle. I have long emphasized this fact: the muscular sterility of the prolabial segment.

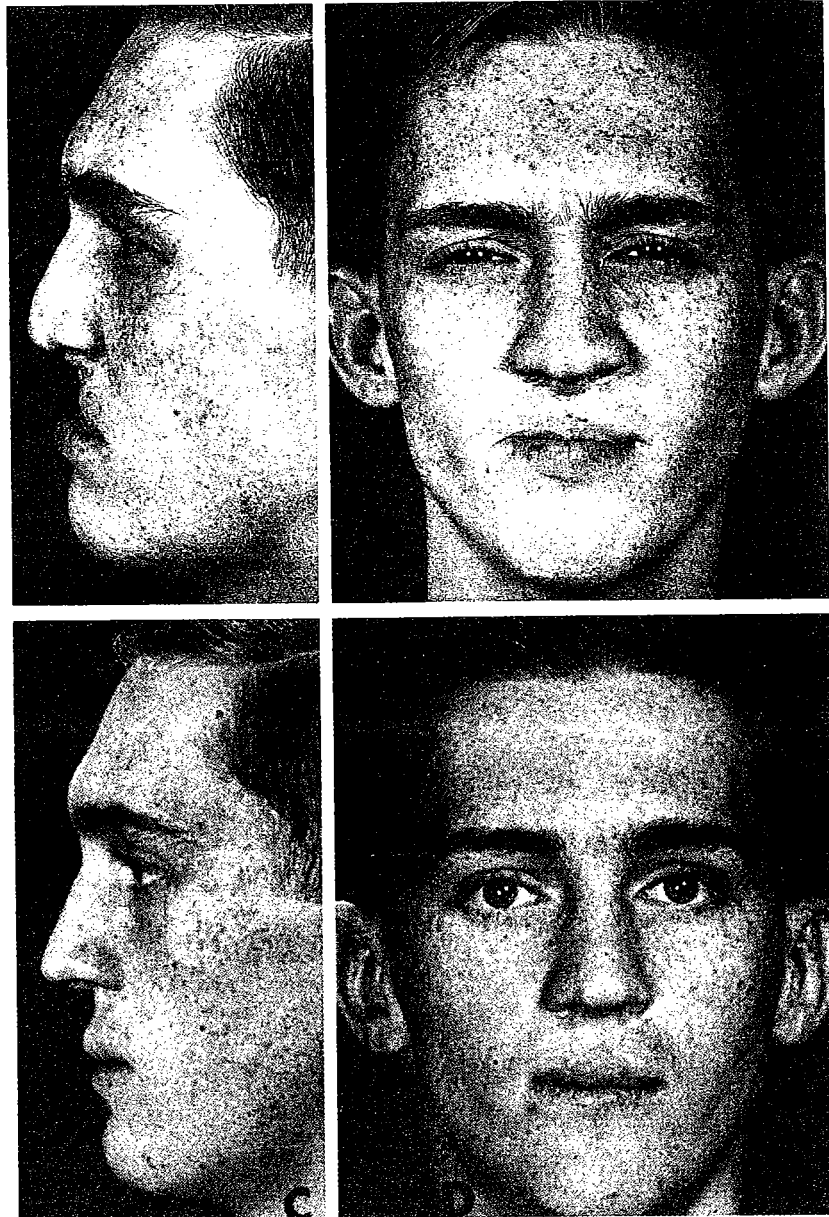
At least there is extra lip tissue available for lengthening the short columella.

SHIFTING THE TOTAL PROLABIUM

When the upper lip is ample, it can supply a flap for lengthening the columella. This flap can be the entire prolabium, as was used by Baron Dupuytren along with excision of the premaxilla and direct side-to-side closure of the lip. The principle was later adapted to secondary corrections. Peskova and Fara gave J. S. Davis and Ferris Smith credit for attributing this approach to Gensoul. This is possibly a language misinterpretation because both Davis and Smith describe Gensoul's method correctly as a V out of the center of the prolabium and not the entire prolabium. In fact, Davis also illustrated a vertical columella excision to thin the center column simultaneously with the Gensoul lengthening.



Gillies taught me to shift the entire prolabium in certain cases, and I have used it in many types of combined secondary bilateral nasal and labial corrections. Usually it requires an Abbe flap replacement in its wake, and in the right circumstances the result can be quite dramatic, as demonstrated in the case of this young schoolteacher published in *Plastic and Reconstructive Surgery*, April 1963.



WHEN AND HOW TO SHIFT THE TOTAL PROLABIUM

When the columella is short and the upper lip tight in relation to the lower lip, a reduction of the lower lip is necessary. The total prolabium is taken out of the upper lip as a unit. After a membranous septal incision extended by lateral vestibular releasing incisions, the columella-prolabium component hangs from the tip of the nose like a Ping-Pong paddle. To turn this into a columella takes a bit of clever tailoring.

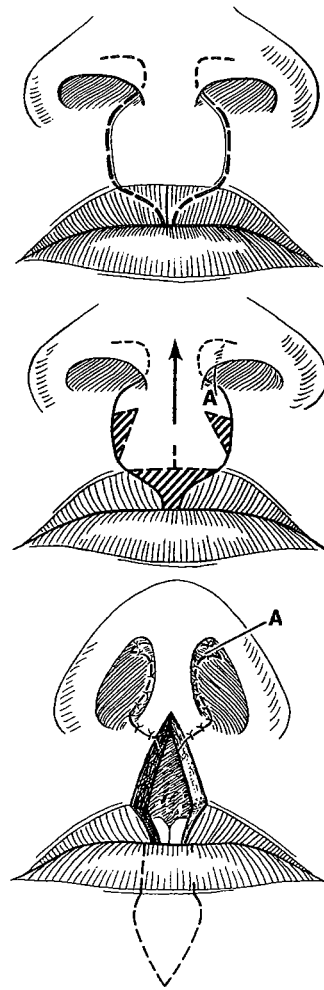
Extension flaps at the top of the prolabium can be used to fill the lateral vestibular incisions. Then the remaining prolabium is thinned and rolled on itself with sutures. The join of the end of the true columella to the beginning of the prolabium tends to resist a smooth transition. If it does not form a graceful column in the first stage, it can be revised with a vertical diamond excision secondarily. The bottom end of the prolabium can be split to splay as a columella base to join the alar bases across the nasal floors as nostril sills. Again septal cartilage struts to shore up the tip and column can be used primarily or secondarily. Several examples of this double action will be shown later.

Others use this general principle of advancement of the entire prolabium into the columella and filling the upper lip defect with an Abbe flap. The most recent (1973) advocate of this approach was René Malek of Paris, who, when taking columella from below, elucidated the type of bilateral secondary cases in which he preferred this regimen:

One or more of the following elements exists: the medial part of the lip is too short in height; the prolabium is scarred and the muco-cutaneous ridge is disturbed; there is a transverse shortening of the lip (causing, according to Victor Veau, a holy-water basin appearance in the profile view). . . . In all these cases, it is necessary to utilize an Abbe flap. The prolabium gives added height to the columella.

GENSOUL

A more popular columella lengthening approach for over a century was the use of a flap taken out of the mid-vertical portion

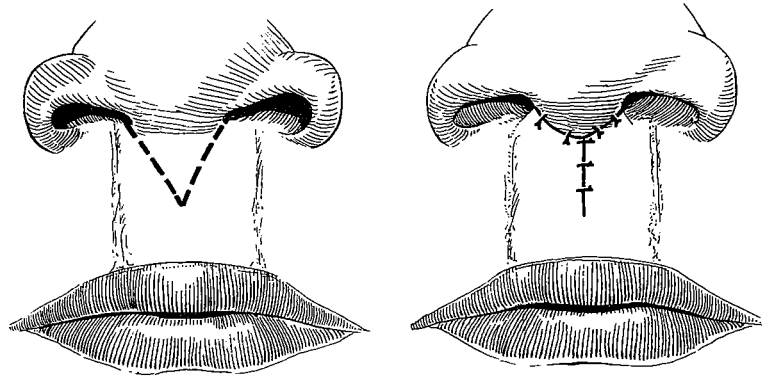




Joseph Gensoul

of the prolabium in continuity with the base of the columella and shifted upward by V-Y advancement. This has become known as the Gensoul principle.

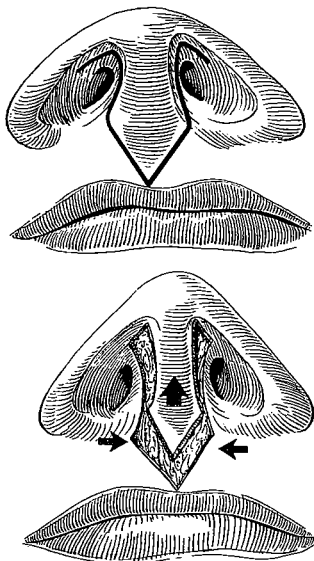
Joseph Gensoul of Hôtel-Dieu, Paris, was a dexterous, explosive, audacious surgeon with an imperturbable sangfroid. In 1833 he was the first to conceive a secondary lip V-Y to lengthen the columella, and many fine surgeons since have used and modified this principle. There was one major drawback—it added a third scar to the already doubly scarred lip.



GILLIES USED IT

Gillies and Kilner described treatment of the bilateral cleft lip nose in the 1932 *Lancet*:

One of the most common faults is found in cases of double hare-lip, for the so-called prolabium is often placed so far down the lip that the lobule of the nose is dragged down with it. The vertical dimensions of the prolabium vary considerably. . . . If the skin of the prolabium were truly a part of the lip then its incorporation *in* the lip should lead to no secondary deformities. . . . One might describe it (prolabium) as that portion of the skin joining the columella to the upper lip . . . it might be better termed the supralabium. . . . From a lip plastic point of view, it is imperative in all cases of down-drawn nose tip to take the prolabial skin out of the lip and suture it so high upon the free border of the septum as will allow the tip of the nose to come forwards and upward into normal position. To ensure this, it may be necessary to divide the membranous septum with scissors, which are carried even over the anterior border of the septum. . . . There remains a V-shaped gap in the lip. The skin of the lip, the floor of the vestibule, and the base of the ala are carefully undermined . . . to loosen the false attachments . . . a buried catgut suture is inserted to gather the deep tissue



together to support the columella from below and behind. This stitch draws in the alar bases and so improves the nose still further by narrowing the nostrils. . . .

In some cases there is insufficient septal development to give prominence to the new tip, and a supporting graft of cartilage . . . is required later.

LEXER USED IT

Erich Lexer, who succeeded Sauerbruch as chief of surgery in Munich in 1928, also used the Gensoul flap. It might seem unlikely that the grandiose Lexer, who reveled in arterial aneurysms, arthoplasties, joint replacements and jejuno-dermatosophagoplasties, would even notice a short columella. He not only took note of it; he designed a procedure to correct it and at the same time narrow the flaring alae.

Of great physical strength, Lexer was somewhat overpowering, as testified by Hans May, who was one of his students:

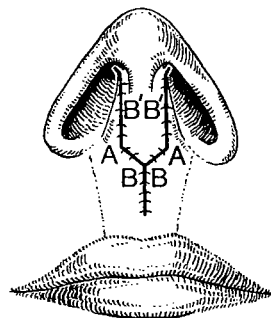
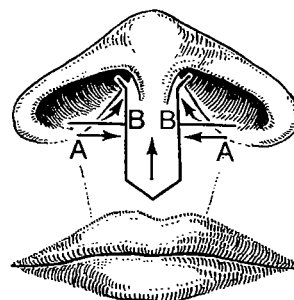
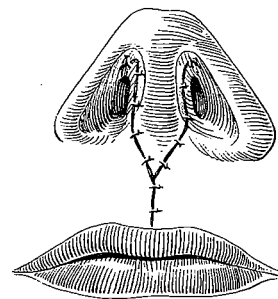
Lexer never had more than two assistants helping him, and they had to keep their fingers out of the wound at all times. "I like to be alone in the wound" was an often quoted request of his. The handling of ordinary instruments was called for by sign language, and conversation at the operating table kept at a minimum.

On a weekend he invited one of his assistants to join him in his two-oar boat rowing on Lake Constance for hours, stripped to the waist in the blazing sun, and when the assistant suffered burns and exhaustion, he was treated by immersion in a tub of iced water and a bottle of champagne to replace fluid balance.

Yet Lexer had an artistic eye and never used a ruler. He had studied art before medicine and could use the painter's brush or the sculptor's chisel as masterfully as the surgeon's knife. This facility probably explains his enjoyment of plastic surgery and willingness to lengthen a columella.

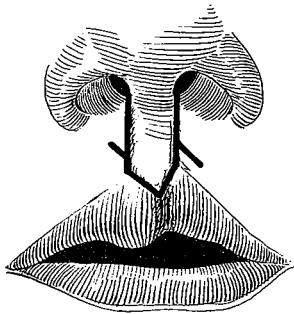
SO DID McINDOE

Sir Archibald McIndoe of 149 Harley Street, London, and Queen Victoria Hospital, East Grinstead, trained in general surgery at the Mayo Clinic, where it was reputed he could perform a

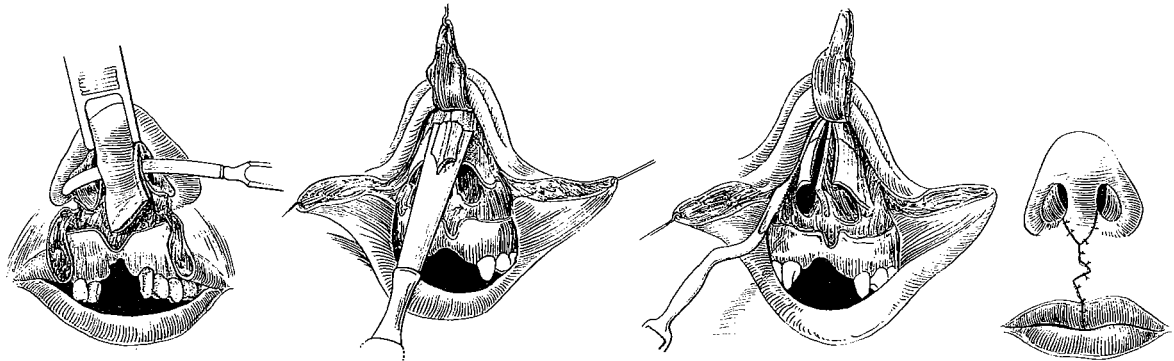




Sir Archibald McIndoe



cholecystectomy as adroitly as anyone at the Clinic during the last of his seven years in Rochester. A distant relative of Gillies and also from New Zealand, he came under the tutorship of Sir Harold Gillies, was knighted for his great work on the burned airmen during the Battle of Britain, became an officer of the Royal College of Surgeons and was undoubtedly one of the top technicians and showmen of plastic surgery in the world. In 1959 McIndoe consorted with one of his favorite students, Tom Rees of New York, to describe a grand and synchronous secondary correction of cleft lip and nose deformities. Using a modification of the Gensoul principle, they elevated the prolabium or a portion of it like a trapdoor based on the nasal tip and with this open door exposure removed the hump with a chisel and sawed bilateral osteotomies. The prolabium piece was then advanced completely out of the lip into the columella and the lip closed with a Z-plasty—but, alas, without a philtrum.



Suave Tom Rees, who has attracted an elite clientele of New York similar to the one that pilgrimaged to McIndoe's Harley Street consulting rooms in London, recently reminisced on his early days with Sir Archibald:

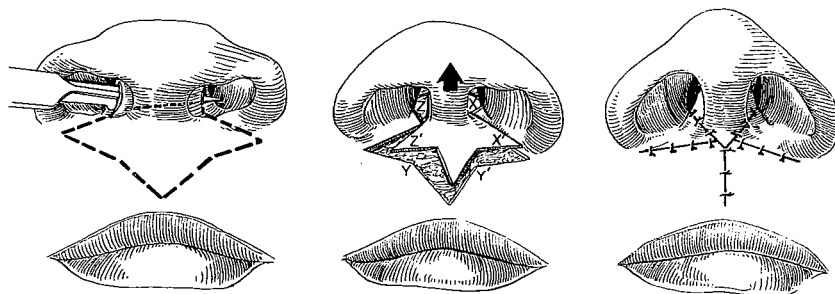
I particularly remember driving to the Queen Victoria Hospital on Monday mornings with Archie in his Rolls Royce, in which he would be in a completely merry mood, full of good cheer and generally feeling fit and ready to tackle a new week. Immediately upon arrival at the hospital, however, he would literally tear the place apart, which he admitted to me several years later he did on purpose, just to "get the troops in line for the coming week."

Certainly Archie had great charisma. He was aware of this and was able to

exert his magnetism in much the same way as a famous politician or even a movie star. As you know he had enormous ham-like hands with which he could do the most intricate and delicate surgery. . . . I helped Archie do several rather radical operative approaches to the secondary deformities of cleft lip nose in which he did a complete take down of all elements of the lip, nose and reconstruction with a submucous resection, nasal plastic and restoration of the lip with or without an Abbe flap.

TRIFOIL

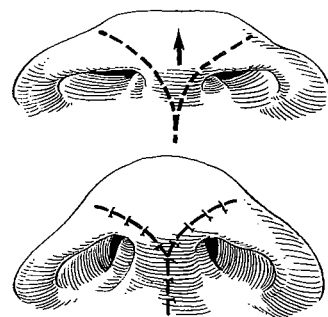
Vilray Blair of Washington University, St. Louis, who in his prime was called upon to do many secondary cleft corrections, modified the Gensoul principle with lateral extensions to fill a releasing incision in the membranous septum by what he referred to as the trifoil flap. This procedure tended to shorten the vertical length of the lip.

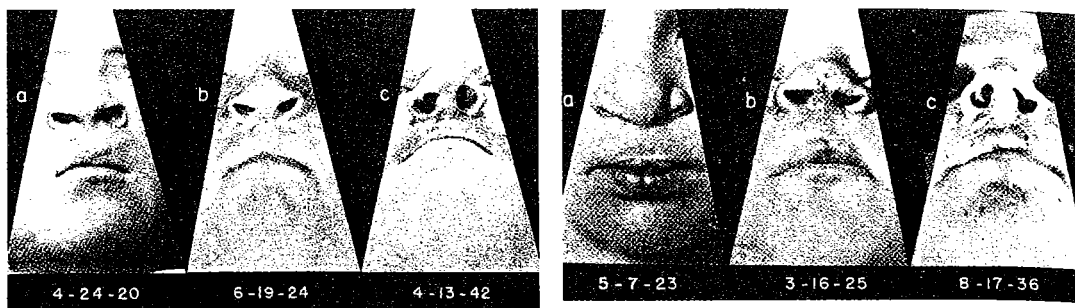


Blair also used the V-Y principle in the nasal tip. He called it the "batwing" procedure and often combined it with his trifoil flap as a consecutive secondary effort to increase the nasal tip refinement, an advancement on top of an advancement. He used these two maneuvers many times during the 20's, 30's and 40's. His description in 1930 is typically lucid:

In the batwing the material comes from the nose and columella by cutting through the cartilages of the columella and nasal tip and suturing the mesial portion forward. This brings the tip of the nose forward, gives a more oblique slant to the nostril, and narrows the columella.

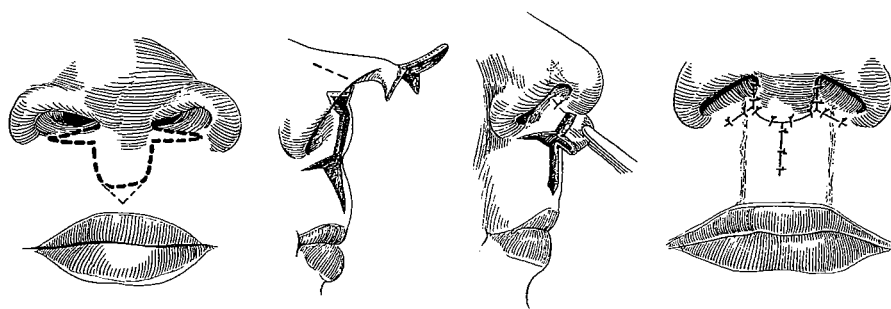
Here are two case examples published by Blair and Letterman in *Plastic and Reconstructive Surgery*, January 1950.





FLEUR-DE-LIS

In 1941 Brown and McDowell reduced Blair's trifoil to a smaller, sleeker fleur-de-lis with lateral extensions near the floor of the nose. Here again the donor area added a third vertical scar in the upper lip, but the procedure did produce columella length with tip elevation.



In 1947 Brown, McDowell and Byars acknowledged that their fleur-de-lis columella lengthening at three and a half years of age often required cartilage support at six years:

Further elevation of the nose may be obtained, when desirable, by an L-shaped [preserved] cartilage transplant.

In 1966 Frank McDowell reviewed their late results and noted in the bilateral complete clefts:

only about 10% actually have enough columella

A further problem in the double cleft is the short columella. About half of the patients will grow a columella of minimal normal length and will require no surgery for this condition. The other half will continue to have columellas so short that the tip of the nose is snubbed down. It seems well established now that these should have surgical elongation of the columella between the ages of 4 and 8 years. The method we used was published in 1941.

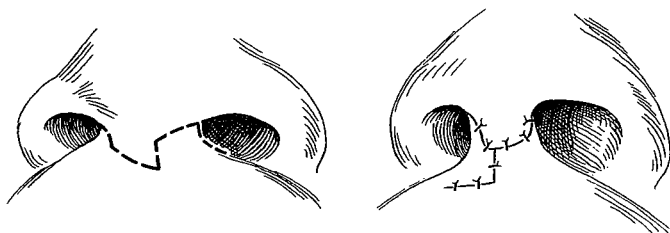
Study of these cases revealed that when the columella was not lengthened it was often just short enough to drag the tip and hook the nose. When the columella was lengthened by the central fleur-de-lis, it did not always lift the tip adequately and it invariably created a third midline lip scar.

Yet as late as 1974 Broadbent and Woolf were advocating:

Minor degrees of depression can be improved with a V-Y procedure on the columella and tip.

Their tiny V-Y maneuvers acted as "petit Ombredannes" and "petit Gensouls," depending on the direction of the V. They stated:

Minor and moderate degrees of depression associated with bilateral cleft lip nasal deformity can be improved by splitting the columella, extending its halves and covering the defects with free grafts or local flaps.

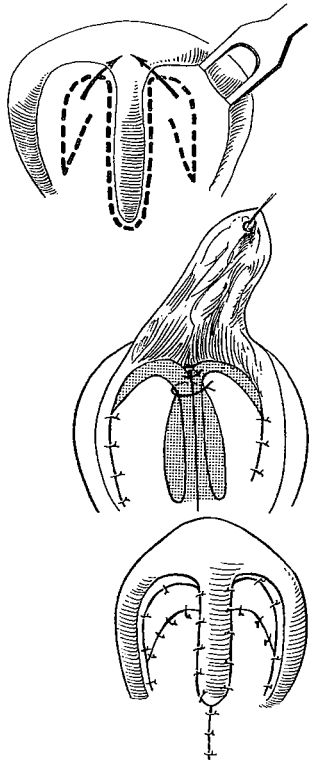


The cases they presented used a V-Y type of flap and seemed to produce too much scarring for the limited amount of tip release.

LATERAL VESTIBULAR V-Y'S

In 1954 John Potter of Stockton-on-Tees in northern England added an important corrective dimension to the Gensoul operation. First he outlined the problem:

In bilateral cleft lip cases, the nasal tip is usually depressed with a short columella, which at times seems almost non-existent. This is due to the shape of the underlying alar cartilages, which have extremely short medial (columellar) crura. The condition is similar to the flat unilateral cases, only the condition is bilateral. The arch of the alar cartilages is flattened and the lateral portions of the cartilages are frequently rotated inferiorly and so their outer surfaces are seen projecting into the nose causing a degree of nasal obstruction. The alar margins tend to be everted laterally; the appearance of the nostrils is low and wide instead of high and narrow.



Obtaining exposure by the Gensoul operation, Potter explained in detail the medial V-Y advancement of his alar cartilage flaps:

The amount of philtrum skin required is estimated in each case to give a correct length of columella. The philtrum skin required is raised and the incision on each side is continued along a line 3 mm. posterior to the columellar margin to the nasal tip and then follows the lower border of the alar cartilage [then turns back] along the upper border of the alar cartilage. . . . The cartilage with its overlying mucosa is then freed from the skin and is fully mobilized. The nasal tip skin is widely undermined. The columellar flap is retracted upwards and the alar cartilages are sutured into their correct positions to each other. . . . There is a raw area laterally. . . . This area is undermined and closed by sutures. . . . The columella skin flap is then sutured into its new position. . . . The defect in the philtrum is closed by approximation, aided by an incision in the alar sulcus and carrying it around the lateral alar attachment for a short distance.

Again the principle is sound and probably has a better chance of success in the bilateral deformity. Many surgeons continue to incorporate it, one way or another, in their nasal corrections.

A CONDEMNATION FROM BEHIND THE IRON CURTAIN

In 1960 H. Peskova and M. Fara of Charles University, Prague, commented on the wedge-shaped flap from the middle of the prolabium to lengthen the columella:

This operation is used by Brown, Ragnell, Benaim, Kirchstein, Dockhorn and others. Lengthening of the columella is only small, however, and in severe deformity is not sufficient for a satisfactory result. The vertical scar of the lip is disfiguring and in children can undergo hypertrophy.

Most surgeons have come to agree with this stand, but for many years a third vertical scar was being added routinely to the center of bilateral cleft lips, with only inadequate columella lengthening.