43. *Nasal Skin Shifting by External Incisions*

DORSAL NASAL ADVANCEMENTS

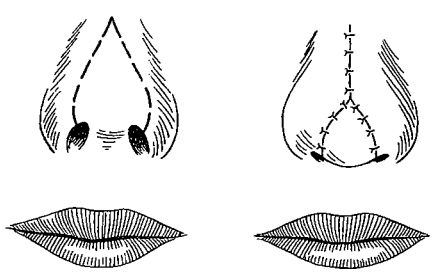
Johann Dieffenbach

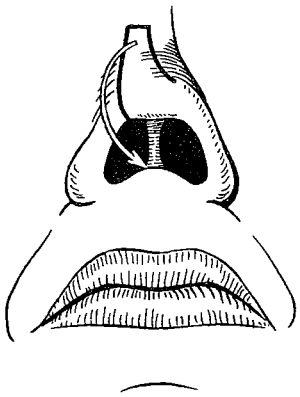
IT seems there are almost "no holds barred" in bilateral cleft nasal tip surgery. The width of the nasal tip has been an excuse for its use.

The first to use the dorsal skin seems to have been the German surgeon Johann Friedrich Dieffenbach, who as a young cavalryman had witnessed the maiming and crippling of young men on the Napoleonic battlefields. Inheriting the sensitivity of his poetic mother, he pursued the study of medicine and, in his 40's succeeded Von Graefe as surgeon at Charite Hospital in Berlin. His fame increased until, it is reported:

> The children of Berlin sang, "Who does not know Dr. Dieffenbach . . . the Doctor of Doctors . . . he cuts off arms and legs and makes you new noses."

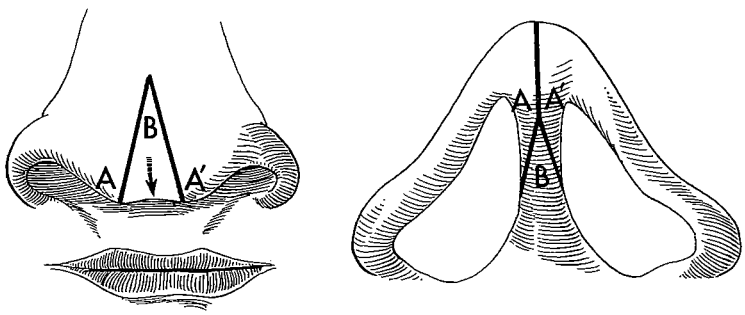
In fact, as early as 1824 he was practically cutting off half a nose to remake it with a V-Y advancement of the dorsal skin into the tip and columella. His comprehensive work on reconstruction was not published until 1845.



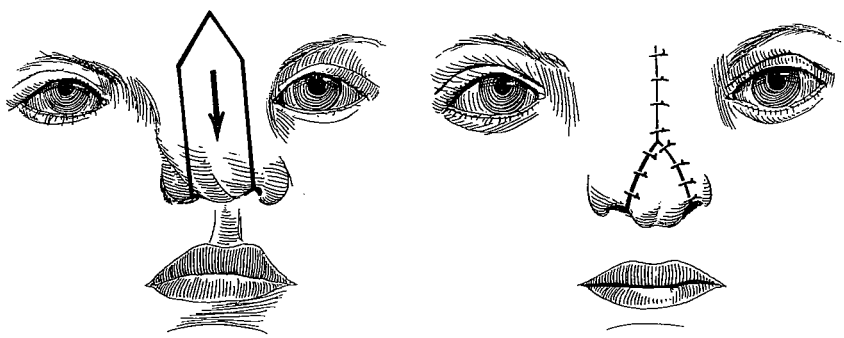


Numerous variations of the principle have been advocated through the past century and a half. J. Szymanowski in 1870 advocated a unilateral skin flap from the dorsum of the nose based inferiorly and slightly off center for columella reconstruction. Although this procedure was not specifically designated for bilateral clefts, it seems to be the forerunner of other methods.

Ombredanne also advanced the nasal tip with a V-Y without concern for external nasal skin scars.



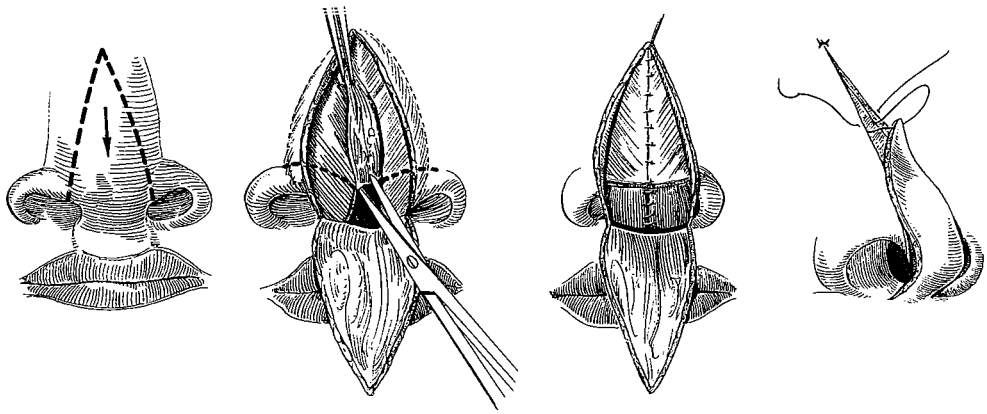
Professor Joseph of Berlin employed an exaggerated V-Y advancement of glabella and dorsal nasal skin downward into the columella and tip in cases of wide and bifid nose often associated with hypertelorism. His name for this procedure is as good as, if not better than, the procedure itself—*Glabellare Schizzorhinoplastile.*



Some 25 years later, in 1955, Burian of Prague described the use of external incisions extending through both alae so that the alae could be shifted from a slanting position to a more normal horizontal position. This shortened the nose length and gave a relative lengthening to the columella. He advised this approach for extreme cases with the nose shaped like a parrot's beak.

The same principle was elaborated upon by the cool, courteous Daniel Morel-Fatio of Hospice des Incurables at Ivry, Paris, whose restrained confidence is reflected in the unostentatious smartness of his dress, the impeccable technique of his surgery and the repeated use of *absolument* to punctuate his teaching. In 1966 he described his use of dorsal skin for columella lengthening in bilateral clefts with depressed nasal tips. He refined the design by resecting the deeper tissue to thin the thickened nose and to facilitate closure of the donor area on its dorsum. The incisions across the alar arches necessary to slide the dorsal skin over the tip and into the columella give a rolled effect, with the tip and column overly rounded.

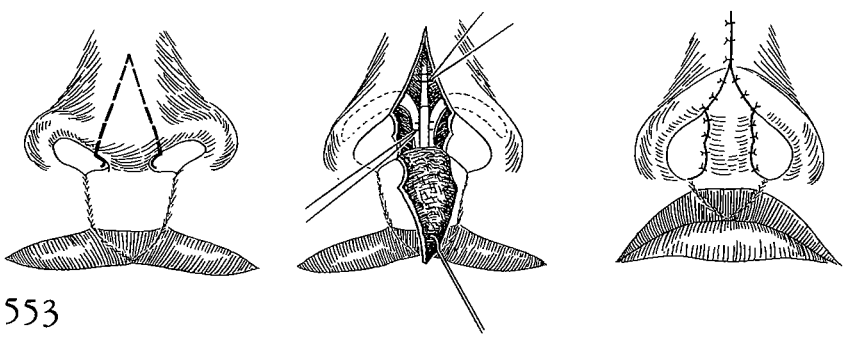
Daniel Morel-Fatio



Then, in 1973 at the International Cleft Palate Congress in Copenhagen and in 1974 in the *Scandinavian Journal of Plastic and Reconstructive Surgery,* the conscientious René Malek of Hôpital Saint-Vincent de Paul, Paris, also advocated dorsal skin of the nose for the columella:

René Malek

> In bilateral cases, the nose is not deviant but its tip is enlarged and flattened. Shortness of the columella is the main deformity. This can be corrected. . .: when the lip is cosmetically acceptable, a V-Y flap raised from the nasal dorsal skin is used. . . . A complete rhinoplasty is usually necessary in a second time.



In 1977 at the Chicago meeting of the American Association of Plastic Surgeons, M. T. Edgerton and J. L. Marsh gave a 12-year follow-up on lengthening the "short nose" in bilateral clefts by sliding nasal mucosa and this same general external V-Y of dorsal skin. The procedure was done at the age of 11 years, long before the nose has its final growth in bridge height and nasal length. Such drastic surgery, if not avoided, should at least be postponed until 16 or 17 years to prevent irreversible scars until growth has a chance to render this action unnecessary.

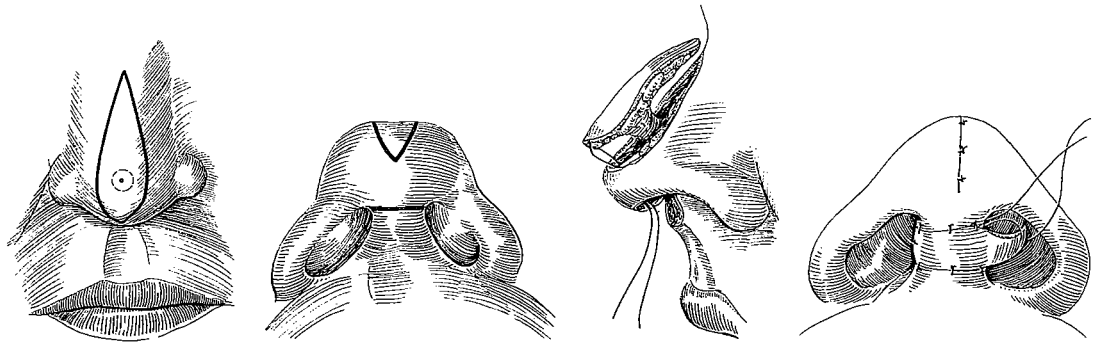
OTHER DORSAL SKIN MIGRATIONS

The seemingly mild Milton Edgerton, with C. M. Lewis and L. O. McKnelly of Baltimore, noted in 1967, as had Morel-Fatio, that even after the short columella has been lengthened:

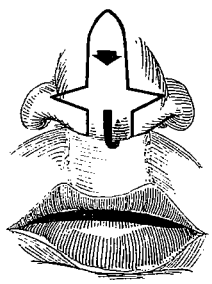
> The released tip of the nose and nasal dorsum often remain wide and bulky.

They acknowledged that the excess dorsal nasal skin could be used as a free composite graft to the columella, but the amount would be limited to 7–8 mm. Therefore, they suggested two ways of flapping dorsal skin to the columella area:

1. ". . .Use of a 90-degree rotation of an island or 'stalk' flap from the nasal dorsum." Pedicled on branches of the anterior septal artery, the dorsal skin ellipse is passed through a tunnel at the tip which exits at a transverse releasing incision at the top join of the columella with the nasal tip. The "stalk" flap is let in transversely to lengthen the columella or longitudinally as an overlap for columella retraction. Of the seven "stalk" flaps that had been used up to the time of publication, they reported that "two of these showed necrosis of a significant portion of the flap."

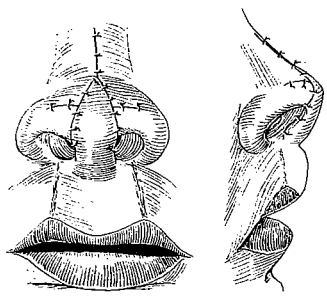


2. "A retrograde pedicle at the superior end of the short nasal columella may be left attached to a midline strip with lateral extensions of the nasal dorsum. This allows downward advancement of the flap into the columella area."



This "retrograde trifoil" procedure had been used five times and was found less "tricky" than the "stalk" flap but it left "slightly more scarring."

After discussing his *12 cases,* Edgerton editorialized on his external dorsal nasal scars:



> The senior author has now used this external dorsal incision in well over 100 cases. Most of these incisions heal with a fine line scar and are not a source of complaint. Approximately 25 percent of these incisions widen or are noticeable to the extent that dermabrasion of the scar is recommended 6 to 12 months after the initial surgery. No patients have found the scar so unsightly that they or their parents have stated that they wished the operation had not been done.

Edgerton, Lewis and McKnelly gave as one of their prime excuses for scarring the dorsum of the nose the small size of the prolabium, which rendered it unable to supply columella tissue. Yet in the cases they published, the prolabium was unnaturally wide and in actual need of an artistic reduction.

Most plastic surgeons, it is hoped, will not take the exposed route over the dorsum of the nose for transporting skin to the columella. There are times when it is tempting but rarely ever justified in my opinion. It produces a round nose, and after

rhinoplasty the scars remain as seen here. Some scars are excellent, but I have had to try to revise some that were impossible.

Edgerton himself described the bilateral cleft nose problem vividly:

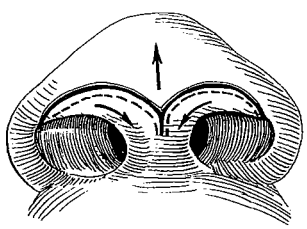
> The face has an appearance similar to that seen when a child's nose is pressed against a pane of glass.

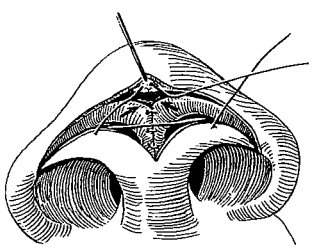
All the more reason for any surgeon contemplating external nasal incisions to consider and reconsider carefully the chance that the nasal tip flatness will be replaced by nasal skin eventually looking as though the pane of glass had actually shattered under the pressure.

ALAR RIM ADVANCEMENT

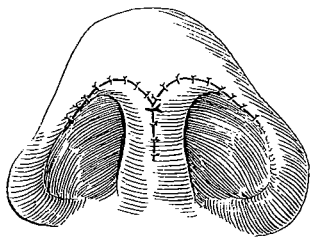
Ray Brauer of Houston, with D. W. Foerster, almost started a Texas shoot-out with his partner Cronin when he reversed the "Cronin" shift by advancing the alar webs into the columella from above. At least this approach is sound in principle as it is taking tissue from where it is undesired and placing it where it is needed.

Brauer thinks of the nasal tip as having three components: (1) dorsal tip above, (2) columella below and (3) two alae, one on either side. Of course, in the bilateral cleft lip nose the dislocation of the alar cartilages presents webbed alar margins that widen the nasal tip and encroach upon the columella length. With a forked design, Brauer first makes his external incisions through skin. Thus he has access for dissection of the medial crus of the lower lateral cartilages out of the columella so that they can be sutured together up into the nasal tip. Then, without including cartilage in the alar flaps, he extends the incisions through the vestibular lining, creating two alar web flaps which are rotated away from the alar rims medially and down into the columella. The tail of each flap is incorporated within the alar margin in a V-Y closure to avoid notching. There is sound economy of tissue shifting in this maneuver, but special craftsmanship is required to blend the alae into the columella at the tip



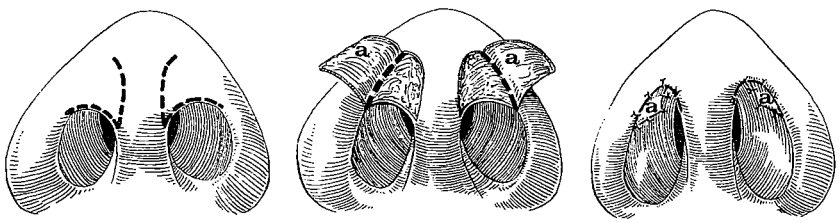


without pig's-ears, notching, columella overhang and visible tip scar marks. Yet, as Brauer indicates, if the prolabium is small and tissue in the nasal floor sparse, the alae are another possible source for columella lengthening.



ALAR RIM TRANSPOSITION

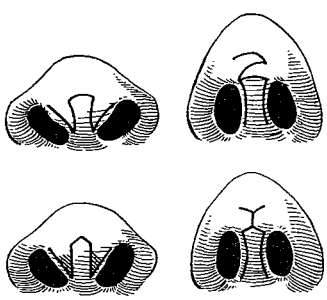
In 1946 Claire Straith, of Detroit, adapted the Z-plasty, which by then was famous for its correction of axillary and extremity skin webs, to the congenital alar rim web of the unilateral and bilateral cleft lip nose. The double Z in the bilateral cases not only removed the excess curtain drooping over the upper nostril but gave an illusory lengthening of the short columella on its upper end and, in fact, did elongate it a bit. Although the principle of the zigzag broke the web line, its interdigitation in an area of the gentle curving flow of columella blending into alar arch was responsible for some unnatural abruptnesses.

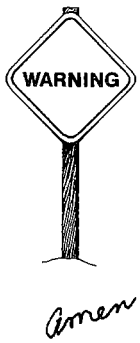


In 1958 F. Wirth tried to smooth out this design when he transposed alar web flaps with columella side flaps in a similar Z-plasty after dividing the alar cartilages laterally and suturing the medial crura together at the tip.

OTHER TRANSPOSITIONS

The ingenious Onizuka of Japan capitalized on the width of the tip above the columella to produce double transposition flaps, which he takes from the lateral vertical axis and interdigitates in the sub-tip as a Z or shortens and brings together in a lying-down H. The effect is a narrowing and lengthening of the columella, but there is an increase in the sub-tip area from the height of the alar arch to the height of the tip. This may be





acceptable in the Oriental but is less so in the Caucasian. The double transposition of medial alar rim into the sub-tip brings with it rather "mod" external scars.

In 1974, Musgrave and Garrett of the University of Pittsburgh, in reference to methods that take skin from the broad nasal tip, stated:

> We have had no experience with these methods. However, we are very reluctant to add any further visible scarring to the nasal tip when there is already abundant scarring in the adjacent lip.

In reference to external nasal scars, Herold Griffith of Northwestern University, while a resident at Cornell, did a cleft lip nasal correction using an accepted external scar approach. He recalled:

> The early post-operative result was excellent, but about two months later, the patient came for presentation to our team at the Cleft Palate Conference and I was startled to see the scar had contracted enough to cause distortion. There was no way I could hide her in a closet so I had to present her in our conference. Dr. Conway looked at her very critically and after the patient had been ushered out of the room, he turned to me and said,
>
> "She looks great, Hal, and I'll bet she'd look even better if you had had a sharp knife."