

47. *Anatomy of the Secondary Deformity of the Unilateral Cleft Lip Nose*

THE asymmetrical nasal deformity of unilateral cleft lip is notorious for its subtle resistance to surgical correction. It is *très difficile, engorroso, eine teuflische sache, a sticky wicket* or just *damned difficult!* The inherent nasal discrepancy of cover, support, lining and platform almost tempts the surgeon, like a tailor facing an extensive alteration, to scrap the misfit and start again. Fortunately the surgeon need not be quite so drastic. Mere perusal of the literature reveals a staggering variety of attempts at correction of the cleft lip nose and, as noted by Musgrave, *there is no simple panacea.*



ORIGIN OF THE NASAL DEFORMITY

A majority of surgeons have always considered that the basis of the cleft lip nasal deformity is a secondary manifestation of a divided orbicularis oris muscle and a deficiency in the maxillary platform. Stenstrom and Oberg even pulled and jerked on cadaver noses to prove that this action duplicated the cleft lip deformity. In 1948 in Professor Kilner's clinic at Alton, England, as already mentioned, I saw a 12-year-old boy with no history of cleft lip. He did have the slight unilateral skin ridge of a "congenital scar" but no disturbance of the main orbicularis oris or the maxilla. He had a typical moderate degree of cleft lip nasal deformity, including septal deviation, dislocation of the alar cartilage at the tip with slumping and overhang of the alar rim and deficiency in the nostril floor with a slight flare of his alar base. At the time I was shocked because it was obvious that

the existence of a lip cleft had not been responsible for this nasal distortion.

Since then I have seen several similar cases, but of course many others have noted the existence of the typical cleft lip nose without an apparent cleft lip. In 1968 Boo-Chai and Tange, in Chinese and Japanese, reported five such cases, and since the alar cartilage was normal in size and shape but displaced, they surmised:

It is, therefore, unlikely that the condition is due to an intrinsic defect within the alar cartilage.

Other observers, such as Rees and Tulenko, consider the mesodermal inhibition-deficiency theory compatible with the occurrence of this anomaly, but specifically applied to the cartilages of the nose.

NASAL DEFORMITY PERSISTS AFTER LIP CLOSURE

All cleft lip methods prior to the rotation-advancement made little attempt simultaneously either to lengthen the cleft side columella or to correct the alar flare. Thus nasal measurements of late results of the LeMesurier method should rank about equal to those of the other standard procedures.

Farkas and Lindsay in 1971 studied adult Canadian unilateral cleft lip patients after a LeMesurier closure and reported:

The length of the columella in unilateral cleft lip and palate patients is significantly shorter on the cleft side than on the non-cleft side and is significantly shorter on the cleft side than in normals. The non-operated side of the columella was almost the same length in patients as in controls.



Leslie Farkas

It would seem that Leslie G. Farkas, once of Charles University, Prague, and now of the University of Toronto, has been very busy making morphological measurements of normal and cleft lip and nose anatomy since his transplantation to the Western world. He has done this work in cooperation with William K. Lindsay, and their studies have been quoted regularly. Using anthropometric techniques, they compared 70 adults after

LeMesurier unilateral cleft lip closure in childhood with 100 normal Canadian adults. They reported an interesting and possibly unexpected finding:

It was surprising to find that the so-called "normal" side of the face in patients with unilateral cleft lips/palates was always narrower, in many cases abnormally narrower. . . . The "abnormally" developed non-cleft side in the patient with a unilateral cleft lip/palate might suggest that the anomaly influenced the development of the face equally on both sides. The work of Fraser and Pashayan suggests that, in a certain number of cases, this is a familial trait.

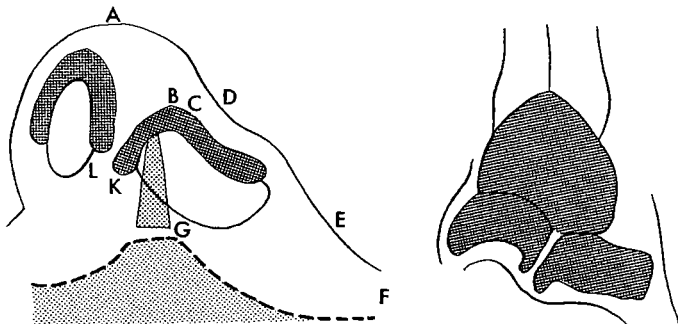
This certainly suggests that there is more to this anomaly than was dreamt of in our study of just the lip or just the nose or just anything!

PATHOLOGICAL ANATOMY OF THE NOSE

Before we can treat pathological anatomy intelligently, we have to know exactly what we have. In 1949 William Huffman and Dean Lierle of the University of Iowa Hospitals studied the "pathologic anatomy of the unilateral hare-lip nose." Since no case presented all deformities equally, a complete composite diagram was charted. They noted: (1) nasal tip deflection, (2) cleft alar cartilage dome retroplaced, (3) obtuse angle between medial and lateral crus of alar cartilage, (4) inward buckling of ala, (5) absence of ala-facial groove with alar attachment to face at an obtuse angle, (6) real or apparent deficiency of bony development, (7) overly wide dorsal extremity of naris, (8) a naris circumference greater than that of its fellow, (9) more dorsal position of entire naris, (10) shorter columella on cleft



William Huffman

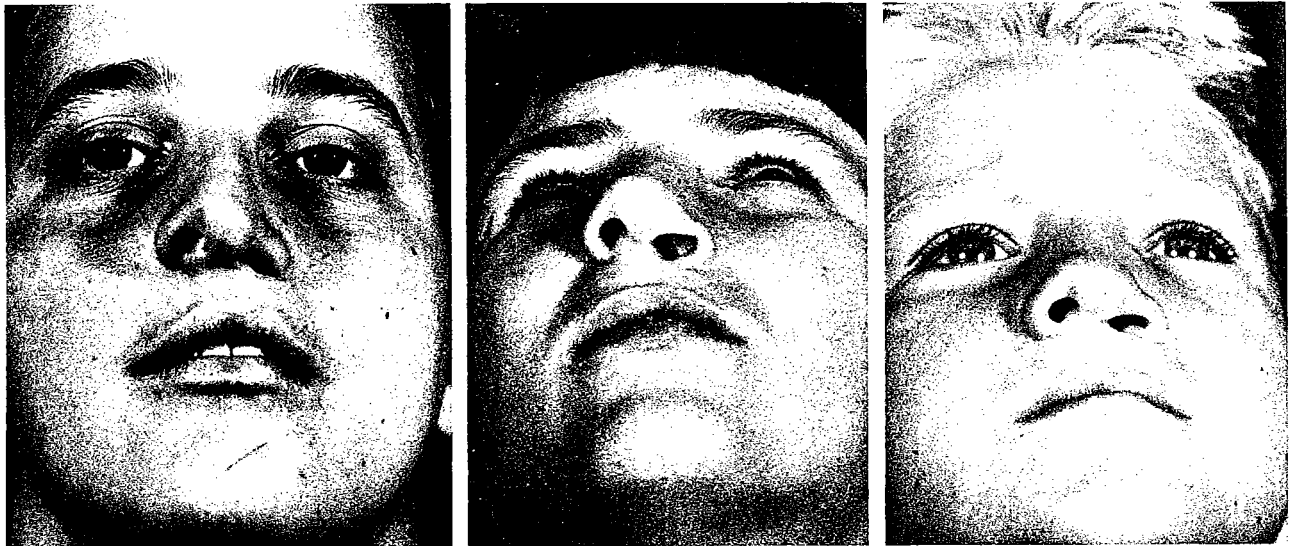


Dean Lierle

side, (11) medial alar crus inferiorly placed in the columella, (12) columella slanted obliquely with the dorsal portion of the septum dislocated off the nasal spine and presenting in the normal nostril with the anterior septal tip leaning over the cleft. The entire tip of a unilateral cleft lip nose is often dependent, but more worthy of attention is that the cleft half is even more dependent than the normal half. To this list Berkeley has added the bow-string contracture of the interior of the nostril extending from its apex along the upper border of the lower lateral cartilage to the margin of the pyriform sinus.

I would like to emphasize a common deformity. The normal alar crease discontinues when meeting the bulge of the normal alar cartilage, but in the cleft lip nasal distortion, the crease is unopposed and continues forward across the impotent alar cartilage even to the alar rim, with evidence of kinking and nicking.

As in all unilateral deformities there is the exasperating aspect of asymmetry. Possibly the most distracting asymmetry is the vertical axis of the normal nostril as opposed to the transverse axis of the cleft side nostril.



In its more extreme form the unilateral nasal deformity presents all of the above-mentioned pathology but in exaggeration. The excessive length of the cleft side of the nose produces a

twisted hemi-hook which all but rests upon the lip. This slump is so severe that the nostril is not only lying in a horizontal axis but is squashed into flattened obscurity.



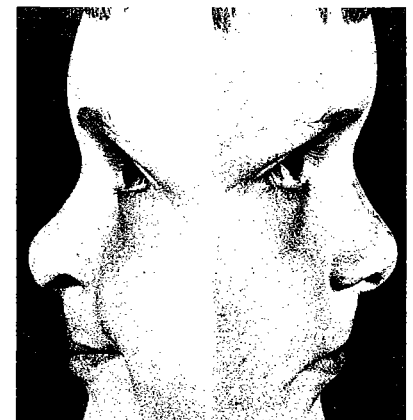
MAN-MADE DEFORMITIES

In addition to inadequate correction there can be exaggerated *over-correction*, resulting in odd man-made deformities. For instance, bitter experience with persistent lateral alar drift probably provoked the over-closure of this contracted nostril.



TWO-FACED ASPECT

The deviation of the anterior septum leaning over the cleft does not support the nasal tip, and since the attenuated, flattened cleft side alar cartilage has never risen to its balanced perch beside its mate at the tip, there is a slump of the entire cleft side of the nose, presenting a hemi-hook. In fact, the left and right profiles look so unlike, they appear to be two different faces.



both an
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and an
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The normal side of the nose stands as a flaunting challenge to the abnormal side, forcing a constant comparison. At the same time, however, it presents a model by which the deformed side can be fashioned.

When the original deformity has *not* been treated directly except for some medial advancement of the alar base during primary closure, then there will *not* be much improvement with age as reflected in the residual secondary deformity.