Repair of Unilateral Cleft Lip-Nose

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The nasal deformity which is associated with a unilateral cleft lip is treated as a separate surgical problem. Congenital cleft lips which present excellence in surgical repair may still be associated with a deformity of the nose. All attempts to improve the nasal deformity during the surgery of the lip on the newborn do not produce the desired effect, if we realize that during development the anomaly will be visible, proving the inefficiency of the surgical efforts. The nasal defect of unilateral cleft lip shows characteristic alterations, with small differences between cases. We usually find, on comparing the normal and defective side, a flat wing and an alar cartilage reduced in size. The dome is at a lower level and the subseptum deviated toward the healthy side. In the more serious cases, which are quite common, we find deviation of the pyramid and the nasal septum toward the normal side. The nasal orifice presents a transverse diameter which is greater than the vertical.

The surgical solution, as can be seen from the vast literature, is complex and the results by the common methods are far from satisfactory. Some authors (*1, 7, 9, 14*) prefer to operate during the first months at the same time that lip surgery is done. A larger number are in favor of repair in older age groups. The majority of surgeons (*2, 5, 6, 8, 9, 10, 15*) solve the problem by exposing the cupulae of the alar cartilages and elevating the dome to the cleft side at the same height as the healthy side. Other authors place the 'crus medialis' at a higher plane. What really varies is the approach. Some prefer access by way of the columella. Others like to do an external incision around the domes of the alar cartilages to provide a better exposition of the cartilaginous structures.

Resection of the skin of the deformed alar rima, which always lies at a lower level than the opposite side, has been combined with the treatment of the deformed alar cartilage (*4, 11*). For a better exposure of the alar cartilages, Rethi's approach has been employed. It consists of incisions in the alar rima on both sides which unite at the median line of the columella (*12*). The same author (*12*) uses another incision which is intercartilaginous. It is at the limit between the alar and triangular cartilage, uniting the two laterally at the level of the floor of the nostril. In this manner the chondrocutaneous flap is defined. By sliding this flap medially, a new dome is formed which is carried to the

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same plane as that of the normal side. The resection of an elipse of skin close to the alar rima of the deformed side (Joseph's technique) is also advised (*3*).

In this paper, we are going to devote ourselves exclusively to the treatment of the alar deformity without becoming preoccupied with the deviations of the septum and the bony pyramid, the treatment of which is nothing unusual. In 1963 (*13*) we had the opportunity of dealing with the problem and we proposed that the repair be done in two or more stages. With the experience acquired in the last few cases, we managed to perform the operation in a single stage, which is the reason for this present paper.

We are sure that the poor surgical results obtained by the various known methods are the result of failure to analyze the pathological anatomy of the deformed nose. All the techniques are concerned exclusively with the isolated treatment of the anomaly of the alar cartilage to the complete exclusion of the internal lining, considering it to be another factor in the abnormal pathology of the wing and tip of the nose. This is so true that most of the methods completely free the defective cartilaginous segment and try to equalize it, in height and position, to the normal side. They forget that the internal cutaneous covering is also insufficient and that the surgical accommodation of the alar cartilage is only one facet in the solution of the problem.

A careful analysis of the problem is called for. The internal alar lining is also hypodeveloped and with an anomalous position. It is not enough to treat the alar cartilage. We must also correct the anomalies of the soft tissues, especially of the internal lining of the wing and the alar rima. The technique we present requires, as a fundamental step, treatment of the alar cartilage and the internal lining as a single step without isolating these elements, in accordance with our point of view. One operative step follows the other, thus correcting the deformity of the wing and tip.

First, the difference in height between the two openings is marked. The skin of the alar rim of the cleft side is resected until it is equal to the normal side (Figure 1). The incision is continued to the internal

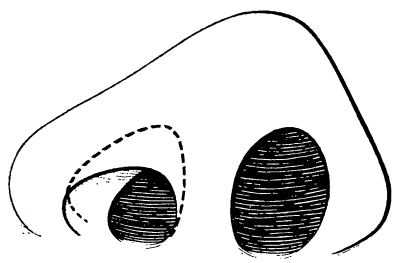

FIGURE 1. Marking of the alar rima to be resected in order to equalize the height of the two orifices.

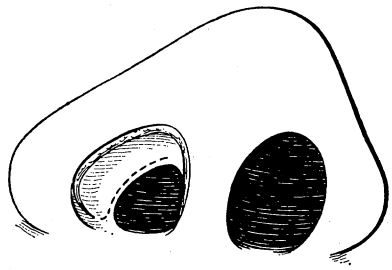

FIGURE 2. Intercartilaginous incision, the lateral extremity of which is united to the nasal vestibule with the primary one.

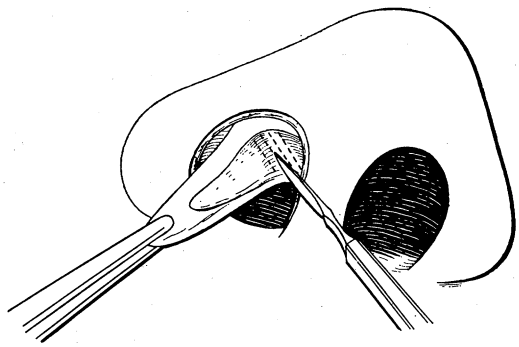

FIGURE 3. Longitudinal incisions in the dome of the alar cartilage to break its resistance.

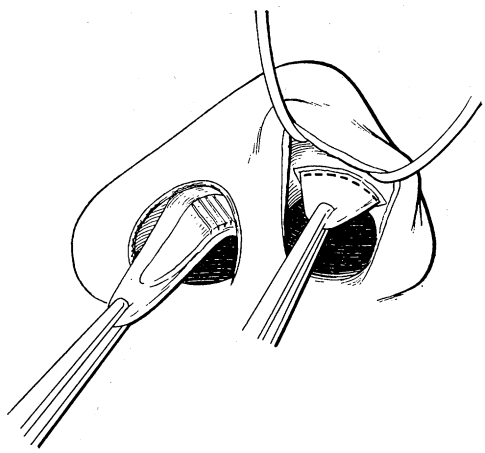

FIGURE 4. Removal of the distal portion of the alar cartilage with its dome.

surface of the wing from the lateral extremity of the wound of the rima, as far as the floor of the nostril. Next, an internal incision is performed which goes between the alar and the triangular cartilages from the median septum as far as the floor of the nostril, uniting it to the

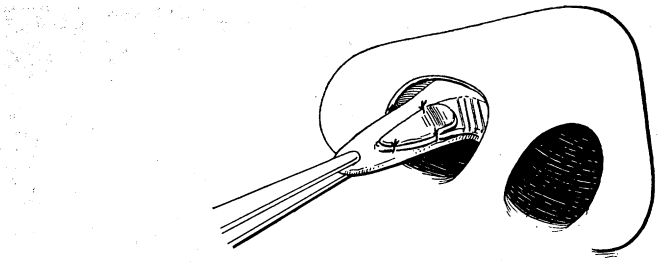

FIGURE 5. Graft of the alar cartilage from the healthy side laterally to the original dome, whose resistance was broken by longitudinal incisions in the previous stage.

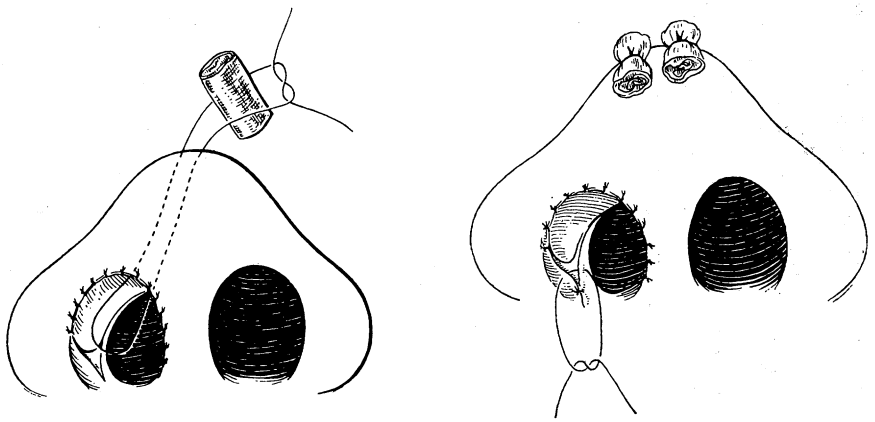

FIGURE 6. Sliding of the composite flap in the direction of the nasal bridge and suturing with U stitches. Suturing of the wound of the alar rima.

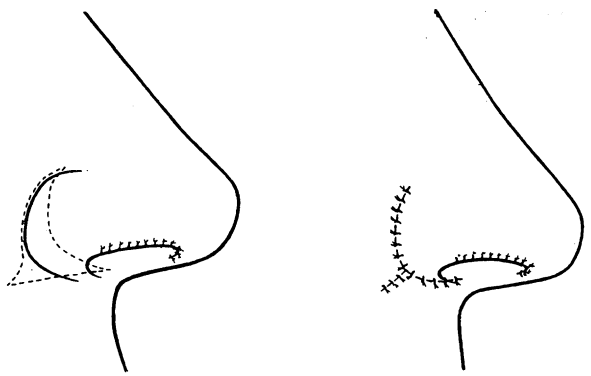

FIGURE 7. Half moon resections of the alar base, if necessary.

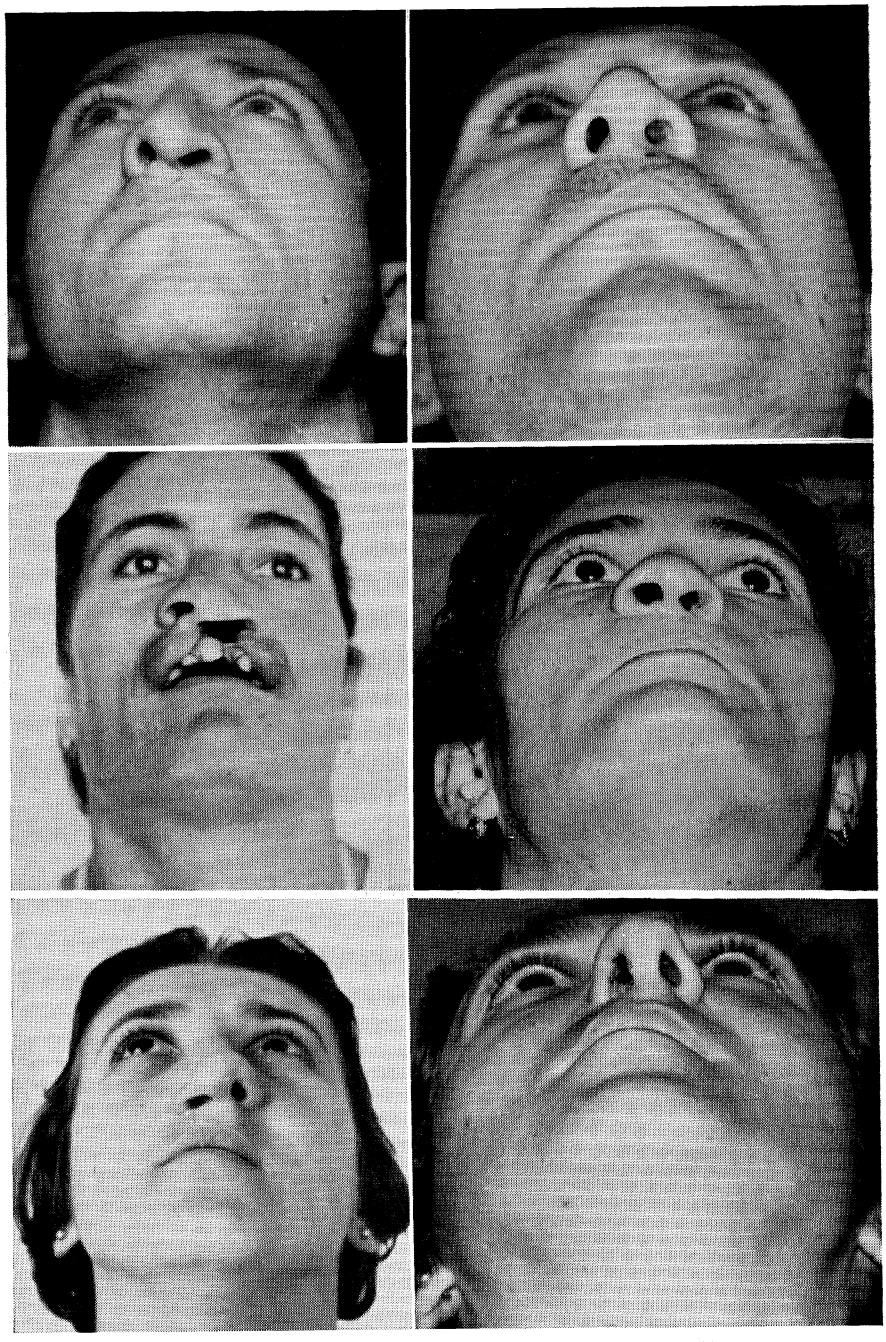

FIGURE 8. Pre (left) and post (right) operative views. The patient in the second row had a simultaneous lip and lip-nose repair.

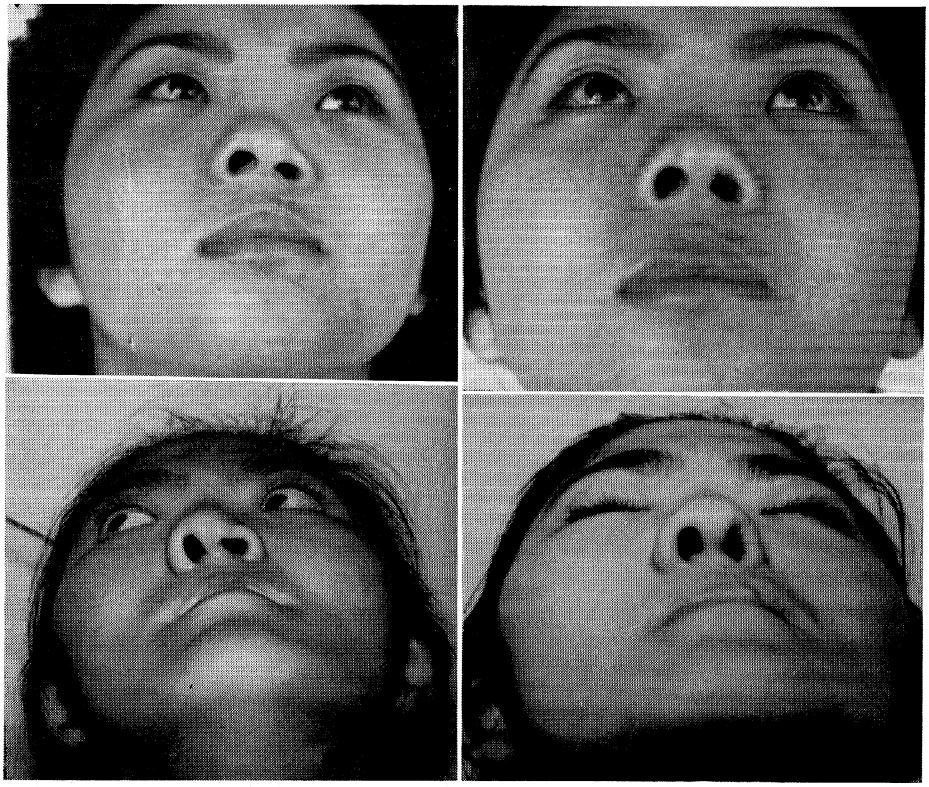

FIGURE 9. Pre (left) and post (right) operative views.

original. Thus, a chondrocutaneous flap is formed that is composed of the alar cartilage and its vestibular skin (Figure 2). This flap is undermined from the external skin of the nose and exteriorized. This exposes the alar cartilage and its dome. The resistance of the latter structure is broken by three or four longitudinal incisions, thus sparing the skin of the vestibule (Figure 3).

Continuing, the distal portion of the alar cartilage, including the dome, is removed from the normal side (Figure 4). This portion of cartilage will be used to supply the missing cartilage of the cleft side. It is sutured to the deformed alar cartilage, laterally to the dome, whose resistance was counteracted by the parallel longitudinal incisions (Figure 5).

The operative steps, which follow, are fundamental to the method. The chondrocutaneous flap, which has been previously prepared (Figure 5), is introduced into the nasal fossa. It is slid medially toward the tip. In this way, the original dome, the continuity of which has been interrupted by the incisions, now becomes part of the 'crus medialis'. The new

dome, obtained at the expense of the alar cartilage of the normal side, will attain the same height as that of the healthy side, thanks to the sliding of the chondrocutaneous flap toward the tip of the nose. Transfixing U sutures adapt the external skin of the wing and the tip of the nose to the internal composite flap. The wound of the alar rima is sutured (Figure 6, left). The wound resulting from sliding the flap to the tip of the nose is sutured edge to edge (Figure 6, right).

Half-moon resections from the alar base may be necessary in order to obtain greater symmetry (Figure 7). Also, the treatment of deviation of the septum and the nasal spine can often complement the repair. The nose is tampooned with furacinated gauze and immobilized with adhesive tape. The results are seen in Figures 8 and 9. In Figure 8, second row, a simultaneous repair of the cleft lip and cleft lip-nose was performed.

It should be noted that Rees, Guy and Converse (*13*) have described a similar operation and used a full thickness skin graft to line the defect in the lateral portion of the alar wing.

Summary

In the present paper the author discusses the problem of alar deformity associated with unilateral cleft lip, omitting consideration of the deviations of the septum and the bony pyramid. A group of patients is presented on whom the results were satisfactory. Repair of the alar deformity was formerly done in two or more stages, but now the same technique can be done in one step, which is the purpose of this paper. Great importance is placed on the pathological anatomy of the nose. The repair of the ala should include both the repair of the soft tissues and alar skeleton, especially the internal lining of the wing of the nose and the alar rima.

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