

The Advantages of Two Stages in Repair of Bilateral Cleft Lip

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The suggestion of using two stages for the surgical correction of complete bilateral clefts of the lip with protruding premaxilla was made in two previous publications (9, 11). The completion of the first stage before the age of one year is aimed at diminishing the deformity without necessarily obtaining a satisfactory esthetic result. The purpose of this first stage is to provide ideal conditions for the development of the maxilla without causing excessive pressure on the premaxilla as would occur with a tense lip. The prolabium is totally preserved and as much as possible of the vermilion is spared on each side. The fundamental feature is to save the greatest amount of tissue.

The second stage is purely of esthetic concern and is completed at five or six years of age, by which time the maxilla will have attained most of its development. During the interval between the first and second stages, closure of the palatal cleft is performed, and when necessary, orthopedic and orthodontic care with or without bone grafting to the maxilla is carried out. In a recent work, Holdsworth (5) expounds this same view, dividing the repair of bilateral cleft lip into an early and a late stage, although he employs a different technique.

In some cases, the total preservation of the prolabium might seem to be useless if it is very small in height and in thickness. However, we believe that even in these cases employing techniques designed to increase the size of the prolabium is not necessary, either by approximating the skin of the sides in the midline inferior to the prolabium (1) or by inserting skin wedges into the median portion of the prolabium (12).

After the marginal incisions are made, the prolabium increases in height, thus permitting the alignment of the muco-cutaneous lines and the re-establishment of the continuity of the Cupid's bow. The recent techniques which have been described and which are designed to preserve the prolabium and to complete the repair at a very early age are contrary to our practices (2, 3, 4, 7). We believe that a secondary repair will be required later on in these cases. However, the early definitive repair is useful in cases where the premaxilla is in continuity with the maxillary alveolar arches, or in those cases where the deformity is limited to the lip and in whom the alveolar arch is well formed.

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In those cases in whom the vermillion of the prolabium is well developed and in good position, an early primary repair is recommended as has been previously described elsewhere (11). When the vermillion of the prolabium is insufficient and the premaxilla protrudes, surgical closure is recommended in two stages as described below.

Classification

Following the embryological studies of Kernahan and Stark (6), congenital lip and palate clefts are divided into three groups as follows: Group 1 are pre-incisive foramen clefts, which include clefts of the lip and possibly the alveolar arch either unilateral, bilateral, or median. Group 2 are post-incisive foramen clefts, which are exclusively palatal clefts. Group 3 are trans-incisive foramen clefts which include clefts that involve the lip, alveolar arch, and palate on one or both sides.

The technique described in this paper is particularly applicable to the bilateral trans-incisive foramen clefts in whom the premaxilla is projecting forward.

Technique

FIRST-STAGE. One side is closed in the first few months after birth and the other side is closed a few months later. The operation consists of a simple incision along the cleft edges, and the approximation of the edges with the maximum preservation of the vermillion of the lip margins (see Figure 1). The first stage converts a complete bilateral cleft to an incomplete bilateral cleft and the results are usually well accepted by the parents.

SECOND-STAGE. The definitive surgical repair is completed in the pre-school period at about five to six years of age and after orthopedic and orthodontic treatment of the maxilla is carried out. The technique

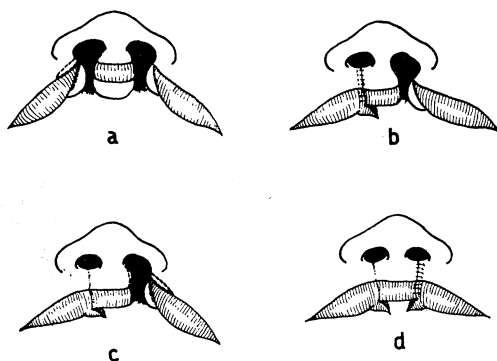


FIGURE 1. Representation of stage 1, which transforms the complete bilateral cleft lip to an incomplete bilateral cleft lip in two operations. a) Marginal incision to close one side with careful preservation of the maximum amount of vermillion. b) One side closed. c) and d) Two or three months later, closure of the other side by the same technique (see acknowledgment).

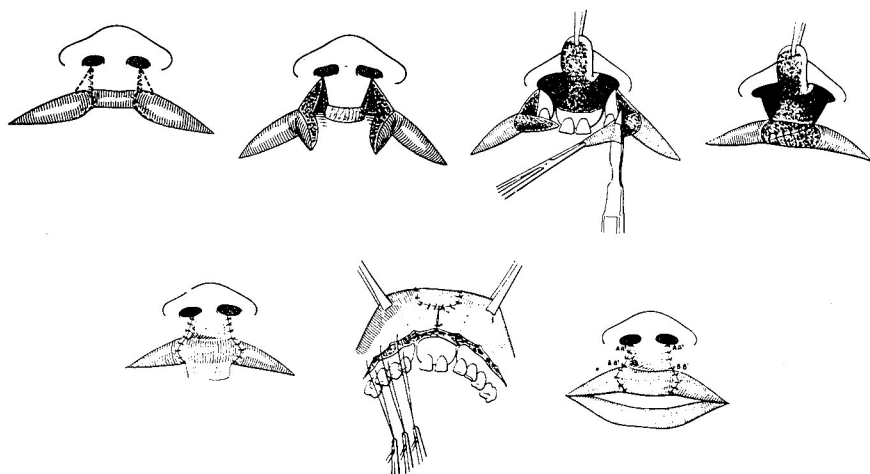


FIGURE 2. The second stage, carried out at five to six years of age and consisting of reopening the cleft with a maximum preservation of the vermilion from the lateral segments. The epithelium is removed from these segments and they are interdigitated in the midline underneath the vermilion of the prolabium, thus providing bulk for the prolabium, reconstructing a midline tubercle in the vermilion, and enlarging the gingivo-labial sulcus (see acknowledgments).

consists of reopening the lip while preserving the vermilion of the lateral segments. These lateral vermilion flaps are then decorticated of epithelium and sutured together in the midline under the vermilion of the prolabium so as to increase the bulk of the prolabium vermilion (8, 11) (see Figure 2).

Results

Figures 3, 4, and 5 illustrate some of the patients who have reached school age. This procedure has not presented undue difficulties, though a

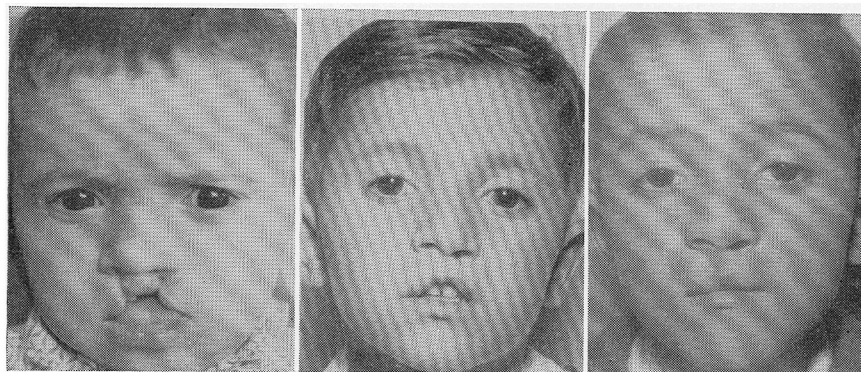


FIGURE 3. Left, before treatment; center, after stage 1; right, after stage 2, which was carried out at seven years of age.



FIGURE 4. Left, after early closure with maximum preservation of soft tissue; center, partial result at five years of age; right, final result after second stage.

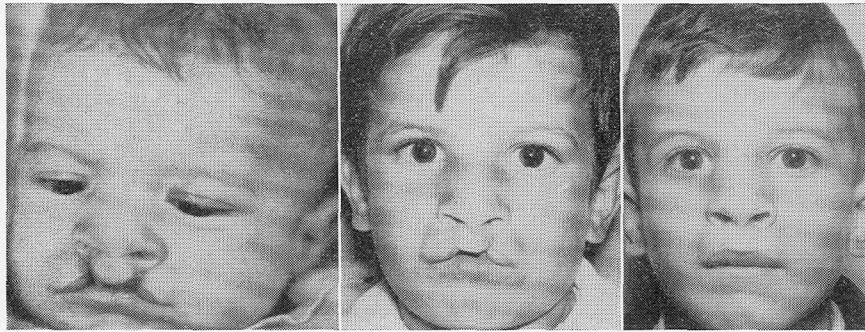


FIGURE 5. Left, after stage 1; center, before stage 2, right, after stage 2.



FIGURE 6. Left, after stage 1; center, shortly after stage 2 showing scar contraction in vermillion; right, several months later.

slight projection of the prolabium vermillion occurred in two cases in a total series of 12 patients. This was due to scar contracture, and disappeared after a few months (see Figure 6).

The technique offers the following advantages: a) proportional development of the maxilla; b) favorable conditions for orthopedic and orthodontic care as well as bone grafting, if necessary; c) availability of a maximum of soft tissue which makes the operation easier, favors obtaining a more satisfactory esthetic result, and allows the reconstruction of a median vermillion tubercle; d) enlargement of the gingivo-labial sulcus which permits the use of a future dental prosthesis, if necessary.

Summary

A two-stage surgical repair is described for bilateral clefts of the lip when the prolabium is underdeveloped and the premaxilla protrudes. The first stage is performed at a few months of age, one side at a time, and consists of closing the cleft with a maximum saving of tissues, and the total preservation of the prolabium.

The second stage is performed at five to six years of age by a technique which allows the total preservation of the prolabium, the augmentation of the prolabium vermillion, and enlargement of the gingivo-labial sulcus.

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Acknowledgment: Figures 1 and 2 are reproduced through the courtesy of Excerpta Medica Foundation, Amsterdam, Transactions of the Third International Congress of Plastic Surgery, Washington, 1963.

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