1971

Year Book OF PLASTIC AND RECONSTRUCTIVE SURGERY

OWENS
STEPHENSON

THE YEAR BOOK *of* PLASTIC *and* RECONSTRUCTIVE SURGERY 1971

EDITED BY

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THE HEAD

Congenital Clefts

Oculoauricular Dysplasia (Franceschetti-Goldenhar Syndrome). Franceschetti's classification of dysplasias in the sphere of the embryonal 1st branchial arch distinguishes dysostosis of the mandible, oculoauricular dysplasia, mandibulofacial dysostosis, oculomandibulofacial dysmorphia and oculovertebral dysplasia. The main characteristics of the oculoauricular syndrome are epibulbar dermoids, auricular appendixes and congenital auricular fistulas. Data on 31 patients with the syndrome were reported by Goldenhar in 1952. In 30% of these patients epibulbar dermoids were present; in 60%, aside from auricular alterations, predominantly unilateral colobomas were seen.

F. Hollwich and B. Verbeck[1] (Univ. of Münster) present data on a patient with craniofacial dysplasia with predominantly oculoauricular manifestations.

Boy, aged 5½ years, was admitted for surgical repair of a congenital coloboma of the upper lid on the right. Because of hemorrhages during the 2d month of gestation, two injections of 250 mg. and 125 mg. Proluton had been administered to his mother. The boy was thin and pale although his physical and mental development were normal, except for right-sided faciocranial hypoplasia as well as a coloboma on the right upper lid comprising the median third of the lid. At 3 and 9 o'clock, epibulbar lipodermoids were present on the limbus. Irregularities of hair growth were noted in the right eyebrow; dysplasia of the outer ear with microtia and auditory canal aplasia and auricular fistulas were apparent. A suggested submucous upper lip cleft with the characteristic asymmetry of the nasal orifices, numerous orthodontic malformations and carious enamel defects were seen. Spinal x-rays showed lumbarization of S1 with spina bifida occulta in the sphere of the sacrum. The karyogram was numerically and structurally unremarkable.

A plastic procedure was used to repair the coloboma, starting with canthotomy and simultaneous removal of temporally entrenched aberrated glandular tissue and dermoids.

The etiology and pathogenesis of this malformation are

(1) Klin. Monatsbl. Augenh. 154:430-443, 1969.

largely unexplained; heredity could not be established in this patient. Many causative factors have been suggested such as intrauterine noxious damage, recessive traits and manifestation lability of the responsible gene, environmental factors and embryonal blood supply. In the present patient the possibility of a hormonal lesion in the 2d month of pregnancy might be considered.

Coloboma of Eyelid and Harelip: Case Report is presented by Hans Fledelius[2] (Rigshosp., Copenhagen). Coloboma of the eyelid has a low incidence, whereas harelip is one of the commonest congenital defects. The combination of the two is seldom reported and then as part of more complex entities. The two defects were found without other malformations in a newborn girl. There was a partial harelip on the left side and a coloboma of the left upper eyelid. The latter defect involved all the structures of the medial half of the lid, including the tarsal plate and eyelashes. The upper fornix was almost obliterated in the area of the coloboma. The cornea and sclera were partly exposed during relaxed sleep. There was no evidence of syphilitic or toxoplasmotic infection and none of other developmental defects. The chromosomal pattern was normal female. Consanguinity was not present. The father had had a son with harelip but normal eyes in a previous marriage. No teratogenic factors were known to have been present during the pregnancy.

Only a few cases with both coloboma of the lid and harelip were found in the recent literature and all such patients had many deformities, whereas the present patient appeared healthy in all other respects. No coloboma of the lid was found among 3,000-4,000 children presenting in Copenhagen with harelip and cleft palate until the present patient appeared.

Congenital Pits of Lower Lip with Cleft Lip and Palate are discussed by Hymie Gordon, David Davies and Shirley Friedberg[3] (Univ. of Cape Town). Congenital pits of the lower lip are small depressions in the vermilion part of the lip, which usually occur in pairs and are present symmetrically on both sides of the midline. They may be round, oval or slitlike and

(2) Acta ophth. 47:560-564, 1969.

(3) South African M. J. 43:1275-1279, Oct. 18, 1969.

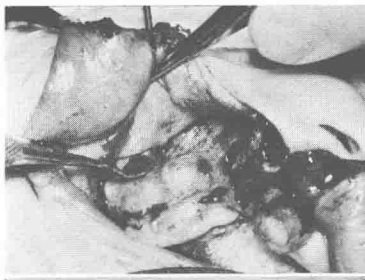
vary from about 2 to 6 mm. in greatest diameter. They may be up to 10 mm. deep, but are usually shallow. The pits sometimes exude a viscid fluid. They are lined by stratified squamous epithelium, through which pass the ducts of mucinous glands. They are thought to result from a failure of the lateral sulci of the mandibular process to obliterate. Stasis and infection are most unusual. Operative correction is simple, however, and the results are usually satisfactory.

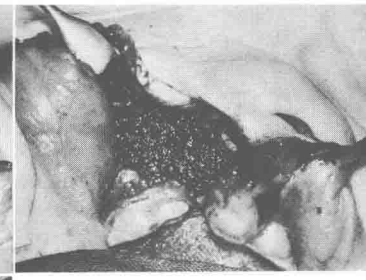
Two families with congenital pits of the lower lip associated with cleft lip or cleft palate, or both, were encountered recently in Cape Town. They were found in a survey of 398 cases of cleft lip or palate, or both, in Cape Town. Five subjects had lower lip pits as well as clefts and 1.2% of the cleft cases were associated with lower lip pits. Inheritance is by an autosomal dominant pattern. Phenotypic expression of the gene is varied. The most important feature of the presence of lower lip pits is their significance in genetic counseling. In a person with a cleft lip or palate, or both, and congenital lip pits, or a history of such pits in a near relative, the risk of having a child with an oral cleft may be as high as 40%. The risk in the usual cleft case without lower lip pits is only 3-6%.

Repair of Unilateral Cleft Lip Deformity: Maxilla, Nose and Lip. Tord Skoog[4] (Univ. of Univ. of Uppsala) conceives of the congenital cleft lip deformity as a tripartite reconstructive problem. The cleft maxilla must be restored, the nasal deformity corrected and the lip repaired. The cleft lip is only part of the malformation. It is repaired by flaps, with restoration of the muscle balance. Periosteoplasty is used to restore the maxilla, and the nasal deformity is corrected by shifting the dislocated alar cartilage into normal position.

For restoring the maxilla, the osteogenic capacity of tissues bordering the cleft is used. Subperiosteal exposure is carried out, and periosteal continuity is established between the maxillary segments across the cleft, using local flaps of the periosteal membranes. A double-layered periosteal lining is created across the cleft. The procedure is illustrated in Figures 1-3. Surgicel is used as scaffolding to maintain the periosteum in the desired position and to maintain a hema-

(4) Scandinav. J. Plast. & Reconstruct. Surg. 3:109-133, 1969.





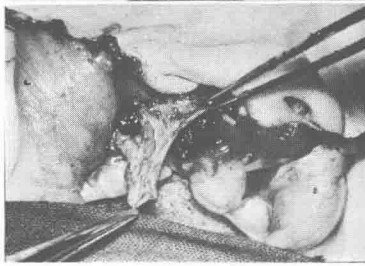


Fig. 1 (above left).—The periosteum is extensively raised from the outer surface of the maxilla up to the infraorbital foramen.

Fig. 2 (above).—Surgicel (oxidized regenerated cellulose) impregnated with blood is placed into the cleft and bony defect previously exposed.

Fig. 3 (left).—The periosteal flap raised from the lateral segment is rotated and sutured over the cleft.

(Courtesy of Skoog, T.: Scandinav. J. Plast. & Reconstruct. Surg. 3:109-133, 1969.)

toma in the area. Periosteoplasty may be safely combined with Surgicel implantation in repairing incomplete clefts.

The alar cartilage is repositioned to restore the topographic anatomy of the nose. An intercartilaginous incision similar to that used for classic rhinoplasty is made, and the nasal cartilages are mobilized before shifting the lower one forward as far as possible. It is possible to restore nasal symmetry to a surprising degree, but the effect is not permanent. Prolonged splintage is now utilized to prevent recurrence of the deformity.

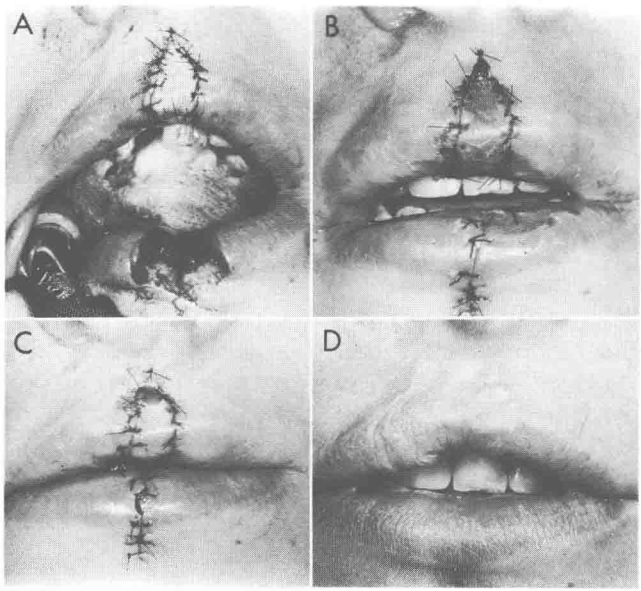
Muscle balance is achieved in the lip by attaching the lateral muscle segment to the midportion of the philtrum. The general appearance of the lip is improved, and a philtrum ridge may form on the cleft side.

►[A good review. It is interesting to note the use of Surgicel to replace autogenous bone, producing equally good results. One of us (K.L.S.) for a number of years has been using acrylic splints as illustrated. At the time of surgery two silicone tubes are inserted in each nostril and held in the desired position by adhesive tape. A mold is made about the 10th day postoperative, and then the acrylic form substituted and maintained for 6 months. This is especially useful in secondary repairs.—Eds.]

Free Composite Lip-Switch Procedure is described by F. T. Moore and P. G. Lendvay[5] (East Grinstead, England). This one-stage procedure avoids the danger of postoperative airway obstruction, the discomfort of the patient in having his lips connected for 2 weeks, the necessity of lengthy hospitalization and two separate operations, and the technical difficulty of matching skin-vermilion junction at the time of pedicle division when the tissues are in a reactive and indurated phase.

TECHNIC. – Under nasotracheal anesthesia, the composite graft is marked out, its transverse diameter not greater than 1.5 cm. The area of new surface contact is increased by an oblique through-and-through incision in the lower lip and also when preparing the recipient site in the upper lip. Bleeding is controlled by diathermy, and the graft is sutured with 5-0 nylon and "bites" close to the margin. Skin and mucosa are sutured, leaving no buried suture material. Minimal and

Fig. 4. – *A*, completion of lip-switch procedure. *B*, *C* and *D*, results of the procedure 6 hours, 3 days and 12 days, respectively, after operation. (Courtesy of Moore, F. T., and Lendvay, P. G.: Brit. J. Plast. Surg. 22:262-264, July, 1969.)



(5) Brit. J. Plast. Surg. 22:262-264, July, 1969.

gentle handling of the graft is imperative. Skin sutures are removed on the 5th postoperative day and mucosal sutures on the 7th postoperative day. The patient is kept on a semisolid diet. Deepening of the upper buccal sulcus is possible by incisions along the sulcus, laterally advancing the mucosa and a relatively greater ratio of mucosa to skin in the composite graft (thus further increasing the area of contact).

Completion of the procedure and some postoperative results are shown in Figure 4. The color of the graft changes from dead white to pale pink within 12 hours postoperatively; 48 hours after operation it shows cyanosis but with obvious return of color. A final healthy color is noted at about the 3d day.

Since 1965, 25 patients, aged 5-30, have had a one-stage composite lower lip to upper lip graft procedure. No total losses have been noted. In 5 patients superficial crusting of the graft occurred, but this separated by the 7th day, displaying intact graft underneath. The results of this procedure compare favorably with the two-stage Abbe flap operation.

Variations of Masters Interlocking Z-Cheilorrhaphy are described by Roger J. Bartels, Joseph E. O'Malley, William M. Douglas and Roy G. Wilson[6] (Orange Mem'l Hosp., Orlando, Fla.). Masters described an interlocking Z-technic for repairing incomplete cleft lip or revising a cleft lip scar. In some instances a line lies within the scar to be excised. Two lines would have to be moved laterally to maintain right angles throughout, but one point could not be moved laterally without narrowing the nostril floor excessively. Three points are therefore shifted laterally, making one angle acute and another obtuse or a right angle. Two angles remain right angles. The slight discrepancy between line lengths is of no practical significance. In this way the Masters repair is made flexible enough to be used to revise a wider variety of unsatisfactory cleft lip scars.

In the unrepaired unilateral incomplete cleft lip, the lateral distance from the cleft to the columella is greater in some patients than in others, and the point at which the vermilion becomes thin in the lateral lip segment also varies. The Masters technic is applied to such instances by moving two, and

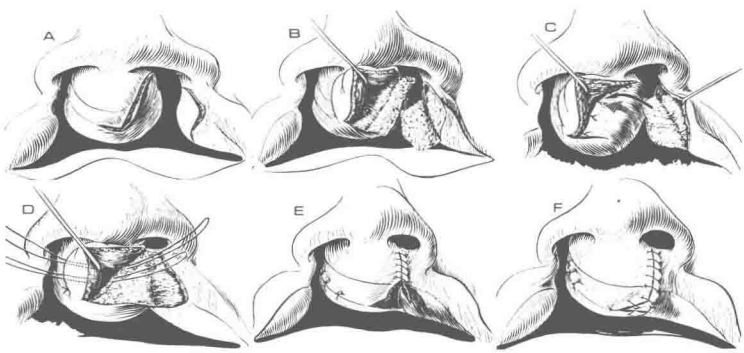
(6) Plast. & Reconstruct. Surg. 45:189-190, February, 1970.

sometimes three, points laterally. Two angles are varied and two remain as right angles.

The Masters interlocking Z-repair for incomplete cleft lip may be adapted to a wider variety of patients by varying the angles in the lateral incision, rather than always adhering to the 90-degree angle pattern originally described.

Upper Lip Sulcus in Cleft Lips. Charles E. Horton, Jerome E. Adamson, Richard A. Mladick and Ronald J. Taddeo[7] (Norfolk, Va., Gen'l Hosp.) discuss the treatment of deficient upper lip sulcus in patients with bilateral or single cleft lips. In severe cases of primary bilateral cleft lip, little, if any, lip sulcus is present. Deleterious effects may occur if the lip is left attached to the premaxilla. The central lip may not grow normally, and the central vermilion at the bottom of the prolabium is less full than normal. The method of creating an upper labial sulcus is shown in Figure 5. The lip is closed in two stages, using a straight-line technic. The lip repair is strengthened by closing the mucosa at a level different from the muscle and skin suturing. The stages are separated by an interval of 6-8 weeks. A small frenum is left in patients with

Fig. 5.—Operative steps to create an upper labial sulcus, while closing one side of a double cleft lip. *A*, incisions made, according to the type of lip repair to be followed. *B*, lateral half of prolabium undermined, lateral mucosal flap prepared and ready to bring under it. *C*, prolabial vermilion used to resurface the premaxilla. *D*, lateral mucosal flap brought under prolabium with mattress sutures. *E*, small Z-plasty at free border of vermilion. *F*, final appearance. (Courtesy of Horton, C. E., *et al.*: Plast. & Reconstruct. Surg. 45:31-37, January, 1970).



(7) Plast. & Reconstruct. Surg. 45:31-37, January, 1970.

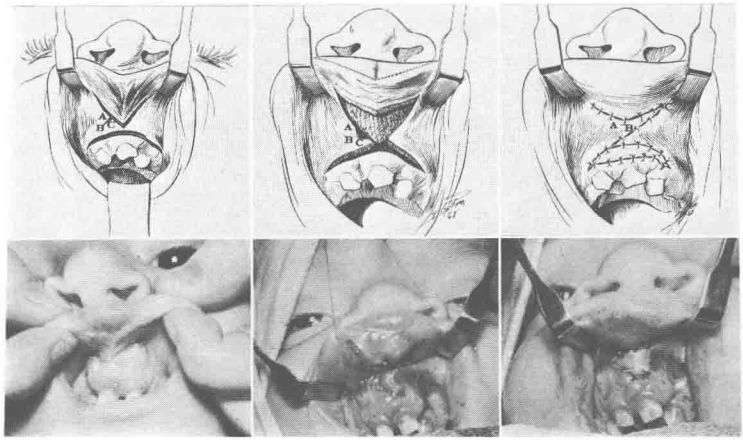
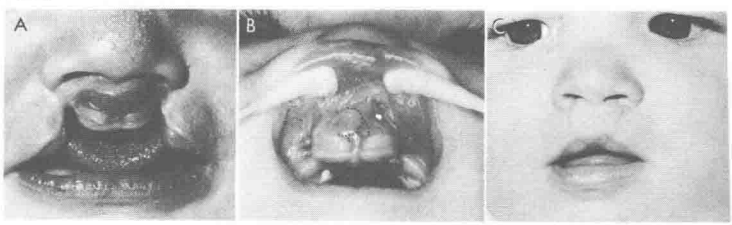


Fig. 6.—Secondary correction of upper sulcus adhesions, when proposed operation was not done at primary repair. *Left,* short central segment of upper lip; incisions shown are for V-Z advancement. *Center,* V-Z advancement continues. Central vermilion increasing in size. All flaps are undermined widely. *Right,* V-flap has been advanced to fill out the vermilion. Z-flaps prevent straight scar. A mucous membrane graft has been sutured to the denuded alveolus. (Courtesy of Horton, C. E., *et al.*: Plast. & Reconstruct. Surg. 45:31-37, January, 1970.)

severely protruding premaxillae; it can be released later when the premaxilla is in good position.

Usually, after surgery, bands and adhesions are found in a unilateral cleft lip patient with asymmetric lip growth. They should be corrected early. If the anterior alveolar ridge is denuded while mobilizing the medial part of the cleft lip, the area is resurfaced by a flap as in the bilateral technic. A

Fig. 7.—*A,* small prolabium, preceding operation of secondary bilateral cleft lips. *B,* alveolus is covered with tissue (vermilion) discarded in the ordinary lip repair: dots mark outline of flaps. An adequate sulcus is present. *C,* prolabium has grown, with its full potential unrestrained. (Courtesy of Horton, C. E., *et al.*: Plast. & Reconstruct. Surg. 45:31-37, January, 1970.)



mucosal flap from the lateral side of the cleft can be used to line the posterior surface of the medial cleft lip side if necessary.

In cases of adherent sulcus with secondary bilateral cleft lip, there rarely is sufficient mucosa in the form of local flaps to line both the posterior surface of the middle part of the lip and the anterior alveolar ridge. The technic used in such cases is shown in Figure 6. The bare anterior alveolar ridge may or may not be covered. A small mucosal graft from inside the cheek is preferred for resurfacing the alveolar bone (Fig. 7). This procedure has created an adequate upper lip sulcus and has helped greatly in the management of "whistling deformities." Early release is imperative in cases of adherent sulcus in secondary single cleft lips.

►[The utilization of all available tissue in congenital clefts is again emphasized. Utilization of the lateral portion of the medial vermilion to cover the premaxilla would seem to be worthy of trial in the deficiency of prolabial tissue.—Eds.]

Combined Nose-Lip Repair in Bilateral Complete Cleft Lip Deformities is described by John Marquis Converse, V. Michael Hogan and Christian-Charles Dupuis[8] (New York Univ.). Despite closure of a lip defect in cases of complete bilateral cleft lip, deformity of the lip, nose and maxilla may progress as the patient grows. Shortness of the columella may pull the nasal tip down, causing the alar cartilages to separate in the midline; the nose then appears flat and bifid, with flaring nostrils. Development after surgery of the prolabial-columellar area in the bilateral cleft lip is not entirely satisfactory. The prolabium may be used to lengthen the columella, with immediate repair of the resulting upper lip defect by a cross-lip flap.

TECHNIC.—General anesthesia is preferred in most cases. The entire prolabium is freed (Fig. 8), as are the medial crura of the alar cartilages, which are sutured together in the midline. In some cases, a split-rib cantilever bone graft was wired to the nasal bones. The elevated prolabial tissue is thinned by resecting subcutaneous tissue. The orbicularis oris is reoriented horizontally. The Abbe flap is taken from the center of the lower lip to replace the central part of the upper lip. More muscle than skin is transferred in the flap. The pedicle is divided and inserted 10 days later.

This technic is indicated when a repaired bilateral complete cleft lip is functionally and esthetically unacceptable and

(8) Plast. & Reconstruct. Surg. 45:109-118, February, 1970.