The Principles and Art of

PLASTIC SURGERY

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VOLUME II

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The Principles and Art of

PLASTIC SURGERY

VOLUME II

17. Harelip and Cleft Palate

A Classification

Prealveolar cleft. This is a soft tissue defect without skeletal deformity. There are three types:

1. Single, right or left, complete or incomplete defect. Close the lip in the first few days of life and return the infant to the breast.
2. Median defect. The true harelip, a rare deformity, with half prolabium on each side.
3. Double, complete or incomplete defect. Early closure is desirable and can be accomplished in one or two stages, depending on the width of the clefts and the size of the prolabium. In the worst cases, one side should be closed at 3 weeks and the other 1 month later.

Postalveolar cleft. There are varying degrees of palate defect, but with the alveolus intact. The approach depends on the size of the cleft and deficiency of tissue. If the cleft is small and enough palate tissue is available to make a long, perfect organ of speech, go ahead with a standard method at 9 months. If there is any doubt, wait 18 months to 2 years, insert a Dorrance skin graft and after 3 months push the palate back.

Cleft lip and palate with alveolar defect. This involves both soft tissue and skeletal deformity. Types are:

1. Single cleft. Nasal septum should be straightened, nasal mucosa of the anterior palate approximated and lip closed as soon as the baby is gaining weight. Posterior palate should be closed at about 1 year.
2. Median defect. Rare congenital absence of septum, premaxilla and prolabium.
3. Double cleft. Moderate protrusion of the premaxilla should be treated by joining lateral lip elements to the prolabium in one or two stages, along with anterior closure of the palate. Extreme protrusion of the premaxilla deserves a wedge excision of the septum and a push-back, along with closing the lip in front. The main part of the cleft may be closed at about 1 year.

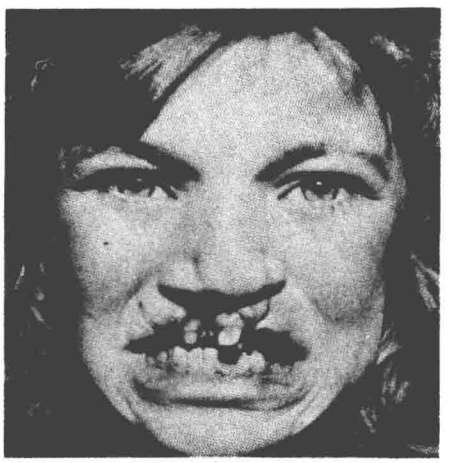
Two great factors influence treatment and results: (1) Is there or is there not an intact alveolus? (2) How much is actually missing on either side of the cleft?

Few Cases in Ancient Egypt

In all the ancient tombs of Egypt only one mummy was turned up with a cleft palate. This suggests that, although many clefts must have gone unstuffed, the Egyptian incidence was somewhat below the approximate 1:1000 ratio of today. The ancient custom of destroying the deformed had a part in keeping down the incidence and probably explains the low ratio in the Negro. As late as 1917, at Sidcup, "Snowball," a Gold Coast African soldier with a gunshot loss of his mandible, was being sent home to Nigeria on convalescent leave. Fear widened the whites of his eyes and he begged first to have his deformity repaired, else his chief and tribe were certain to kill him on arrival.

Surgical Success May Be a Menace

Genetically, plastic surgeons, in devoting such energy to the surgical correction of congenital deformities, merely promote the perpetuation. Some patients are made quite attractive, and more and more little clefts are brought into the world. Yet these little ones are so pitiful that the laws of heaven and earth demand we give them the very best within our power. When a trained plastic surgeon gets the first crack at a harelip the result has a better chance and a standard method will usually suffice. When many others have had a go, the problem then calls on fundamental principles rather than a particular routine technique.



A Derelict

This case turned up in the O.P. at St. James's L.C.C. Hospital. Obviously many unsuccessful operations had been done, and the unicorn effect of a single jutting incisor on the premaxilla, between two halves of a scarred, ununited lip, was particularly revolting. The nose was down drawn, right ala flattened and the small prolabium attached to the left half of the lip.

The nose-tip was released with the prolabium and advanced on the septum. The two halves of the lip were freed by whole-thickness naso-labial incisions until the muscles and mucous membrane met in the middle. The vermilion border was adjusted with a Cupid's bow. A Gillies-Fry operation to the palate was performed and intrabuccal inlay was fitted with a most effective denture by Fraser.

When one studies the change in the expression of the eyes, the "before" showing a frightened rabbit, the "after" the quiet confidence of a young lady—one could almost call it plastic surgery of the psyche—with a little stitching.

Incomplete Evidence of Causative Agent

Prevention rather than correction is science's ultimate goal. It would seem an unscientific attitude not to concern ourselves with the etiology. Yet our primary plastic job is to cure the deformity, whatever its cause, which leaves too little time to delve into the fascinating aspects of embryological development. It is in the research laboratory that this problem must be solved. At the moment the cause of the failure of the embryonic parts to fuse is vague and prevention out of our reach. A defect in the embryonic circulation at the crucial fusion time has been offered as a cause. Malnutrition and vitamin deficiency have been found to produce clefts in animals, but such findings have not been substantiated in humans.

Early Intrauterine Time Factor

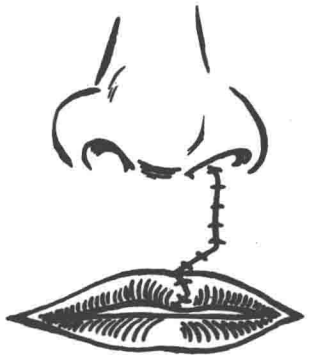
Whatever the etiology, it must have its deleterious effect sometime before the tenth week of intrauterine life, for after this time the face and palate have already fused.

Hereditary Influence

It is quite definite that there is a hereditary tendency in the occurrence of these anomalies. In a family with a history of cleft lip and palate there is always a greater chance of its recurrence. Yet it is quite common, say, for an individual with a harelip when marrying a normal mate to produce normal children. I feel it is only fair to reassure unhappy parents, frightened by the deformity of their first child, of the likelihood that further children will be normal. A harelip patient of mine from South Africa wrote of his coming marriage and asked if they dared have children. Whereupon I wrote back my congratulations and urged him to go ahead, as the chances of normal offspring were excellent. He was most appreciative, followed my suggestion and in due time I repaired his son's harelip!

Ambroise Paré

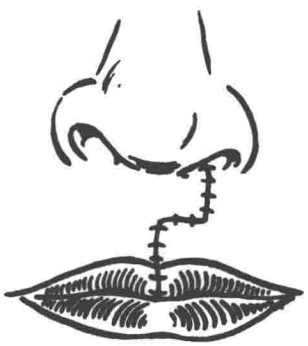
In the Middle Ages, Ambroise Paré first labelled the cleft lip "bec de lièvre." The reason is quite obvious. Let us first deal with cleft in the lip. There is no doubt that Mirault conceived a useful flap for single clefts; its main drawback was that subsequent corrections were not easy. His flap tended to make the lip too long vertically, but its

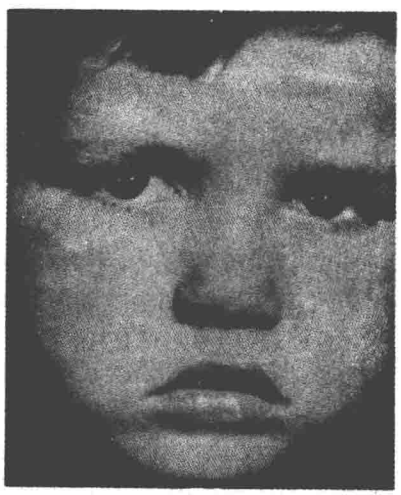


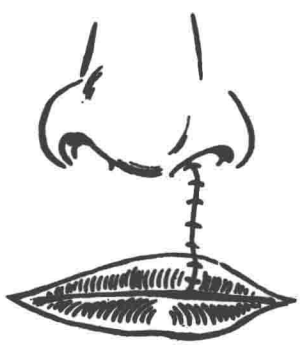
size was gradually reduced as first Blair, then Brown added their improvements. The optimum is indeed a pleasing lip with a single curve to the vermilion border, but the tubercle, if created, inclines to lie just to the cleft side of the midline.

The Midline Tubercle

Le Mesurier modified the old Hagedorn method and in certain cases in sympathetic hands it is probably the most nearly perfect primary cleft lip reconstruction. The double curve of the natural vermilion bow is created as well as a midline tubercle. A conceivable drawback is the requirement of a relatively large flap from the cleft side when this portion of the lip is too deficient to spare it. It is successful in incomplete clefts, as seen in this case by D.R.M.







Conservative Muscle Suture

Some of us through the years have preferred the simple paring of the lip edges, dissection and suturing of the muscle elements and closure in a straight line, anticipating minor alteration at a later date. This conservative approach discards no precious tissue and avoids chopping the lip up into irreversible flaps, but it may require a bag of plastic tricks for later minor corrections.

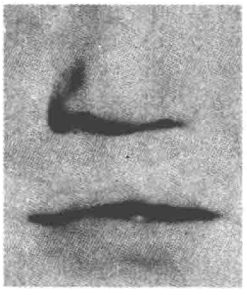
A Sound Method

The edges of this complete cleft were freshened and the lip muscle was brought together with three buried catgut sutures, which resulted in about as good a lip as one can expect with the simple paring operation. At best there is a gentle, even convex curve of the ver-

milion border, which is sometimes benefited by a small Cupid's bow procedure to evert the centre of the philtrum as well as break the unnatural curve into Cupid's double bow. But not all go so well.

Leaving a Notch

In this case the simple straight-line closure of the lip contracted into the usual notch. A "V-Y" advancement of the buccal mucous membrane down from behind filled out the notch in the free lip border. A "Z" transposition of the alar base and nasal floor reduced the alar flare and a Cupid's bow supplied the finishing touch.



Irishman's Lip

The Cupid's bow operation has come to our aid in corrections of many secondary harelips. It was originally designed for the long, tight Irishman's lip, as often seen in postoperative bilateral and in large Mirault unilateral lips. In those cases where the lip is vertically long and horizontally tight, by lifting the vermilion in two convex curves on either side of the central fixed point, a shortened but wider lip is created. In occasional unilateral lips when the scar has raised one side, instead of a more extensive procedure, it has been found quite pleasing to lift the opposite side into a symmetrical Cupid's bow.

A disadvantage of this procedure is seen when the white rolled ridge along the muco-cutaneous junction of the normal lip is included in the removal. It can *often* be preserved by making the shortening in the skin just above or even through the white line.

Bowing a Grafted Lip

However, if the junction line has already been destroyed, as in burns, trauma or other cases in which the upper lip has been resurfaced with a flap or graft, there is no question of the "bow's" value in imitating the normal lip curves.

Tips in Technique

Here are several little points that may make all the difference in this procedure. First estimate by measurement from the alar base the desired lift, mark the elliptical skin areas and excise them. Then undermine the lip mucosa from its muscle except at the central point, which is to remain fixed. Nick the tight muscle bands at the centre of each "bow," or perhaps even excise a small triangle, which will increase the side-to-side length of the lip. As the fresh vermilion edge is advanced up into its new position, the central point tilts forward.

When this operation is being used to shorten the up-and-down length of the lip, obviously the central point cannot remain fixed; the entire vermilion border, therefore, must advance up and the lower border of the orbicularis oris be trimmed shorter before it is nicked at the Cupid's bow.

Normal Level

A guide to the ideal length of the new lip is the level of the resting position of the lips against the teeth. The upper and lower lips meet at a point 1 or 2 mm. above the bottom edge of the normal upper incisor teeth.

The Nasal Defect

A well-mended harelip would pass unnoticed at a cocktail party were it not for the nose. It is natural for the harelip surgeon to be so pleased with a satisfactory lip result that his eyes go temporarily out of focus while gazing upon the nose. Although there is often a marked nasal deformity even in an incomplete cleft lip, the distortion is greatest in a complete cleft associated with an alveolar defect.

The Lining Is Short

During the primary unilateral lip closure it is quite evident that there is an inherent shortness of nasal lining on the cleft side. The nasal attachments to the cleft must be divided when the lip is dissected off the maldeveloped maxilla before the nose will come forward into a relatively normal position. Even then it is rare to get it perfectly placed, for there is some shortness of skin as well, not only of the alar region but the actual cheek.

Symmetrising the Septum

The deflected septum is freed from its vomerine groove, straightened, and held in position by suturing it to the upper edge of the lip muscle from the cleft side. This manoeuvre also positions the alar base and supports the nasal floor. Care in these fundamentals will produce a reasonable nasal result following the primary operation. Undermining the alar cartilages from the overlying skin is an advantage, but the attractive immediate result, while the through-and-through stitches are in position, is deceiving and likely to slip when the sutures come out. The danger of affecting cartilage growth by early surgery seems overshadowed by the fact that deformed cartilage without correction will continue to grow deformed. On the whole, nasal corrections are easier when the child is older.

The Flat Ala

The crux of the nasal deformity is the deviated septum and the undergrown maxilla. The bridling effect of the tissue shortage on the cleft side drags one entire alar cartilage component from its normal riding position with its opposite fellow on the tip crest of the septum. This results in a flat nasal tip on that side, along with a webbed nostril arch and alar flaring. In an adult there may be an increase of as much as ½ inch in total nasal length on the deformed side. In fact, if the patient is approached from the left one may be presented with a prospective Hollywood profile, from the right a Fagin caricature.

Roman and Saxon Profiles

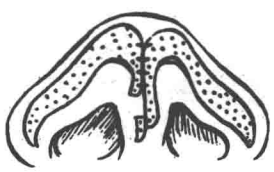
When a student is taught to do a harelip nose he should first go through a series of nasal reductions of the long, hooked variety. Then he is not frightened to tackle what is, in fact, only half a hook.

Full Exposure Best

Through a paramarginal incision in the vestibule, the alar cartilage with its mucosal lining is widely separated from the skin over the whole side of the nose. At the tip the undermined cartilage and lining are divided on the columella side of the alar angle and the scissors cut continued close along the septum to make one composite flap.

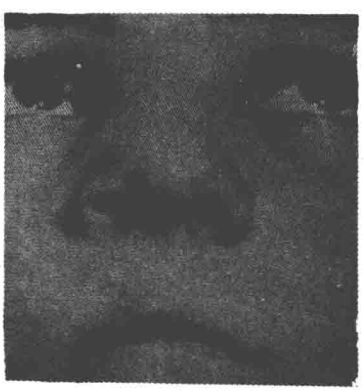
Manipulate and Trim

This gives a clear, open view of the flattened alar cartilage, and allows it to be trimmed along its lower border for the shortening and its curvature to be increased by advancement. Light scoring of the cartilage may aid the moulding. When this shortened, modelled half is replaced in contact with its opposite fellow, the skin often surprisingly accommodates itself to the new position. When it fails to do so, it must be trimmed and rolled in. The alar cartilage on the sound side often has been pulled forward on the septum. It should be freed and reduced if necessary, so that when the depressed ala is brought up and sutured to it, the two will ride evenly together on top of the septal crest. At the same time the flared alar base can be moved in by reducing the wide nasal floor. One method is to transpose the alar base and the nasal floor as a "Z" plasty.

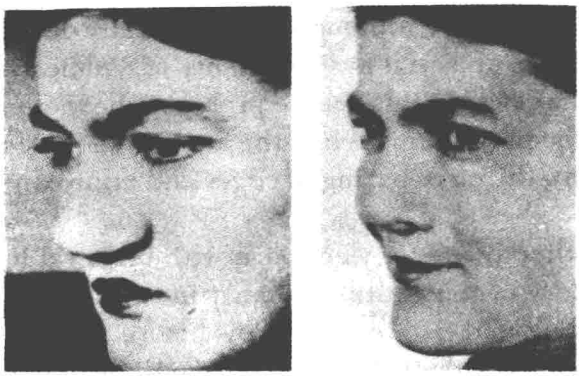


In late reconstructions when the nasal bridge is deviated the septum is freed from its vomerine groove and an ostectomy performed through the frontal process of the maxilla so that the entire nose swings around straight on the face.

1. Alar cartilages adjusted and approximated
2. Alar base moved medially
3. Nasal bridge straightened
4. Tip tilted



1. Alar cartilages 2. Alar base 3. Nasal bridge 4. Tip



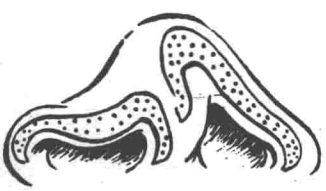
Note the one-sided hook corrected by the same series of steps.

The "Knock-Kneed" Alar Cartilage

When the deformed alar cartilage is too flimsy to support the nostril arch, it prolapses across the nares. Straith likes a "Z" plasty on this web; Kilner prefers to roll it in after a crescent excision of skin and cartilage.

Support by Cartilage Strip

It seems a better principle to reinforce the flimsy cartilage with an additional piece overriding it. Dissect a tunnel under the nasal skin but over the sagging alar cartilage and insert a relatively long strip of autogenous auricular or even ox cartilage, which as a bow-spring arches from a little pocket at the base of the ala to the nasal tip. The results are often quite satisfactory.



Needless to say the general improvements in the nose, such as removal of an objectionable hump, will improve the ultimate result and be greatly appreciated by the patient. Do not forget the value of shortening the whole nose in cleft lip.