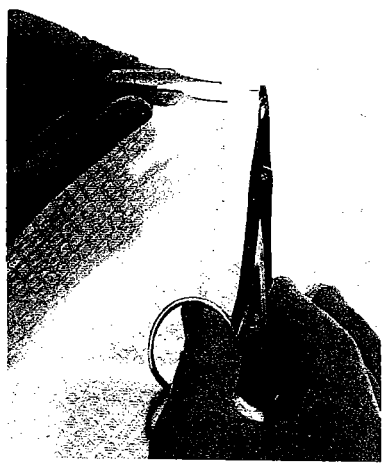
28. *Suturing*



OF necessity the key stitch has already been placed in order to facilitate accurate cleft edge matching and trimming. Flap c has lengthened the columella while the alar base has been advanced and the nasal floor constructed, and all of these actions have been fixed with sutures. So as not to confuse the surgery with the stitching, the description in detail of the suturing has been postponed until now.

Part of the craftsmanship in cleft lip surgery is the skill of the suturing. For me this is best accomplished with a slender-nosed Stille-made Gillies needle holder and fine-toothed forceps.

THE ACTUAL STITCHING

Early in the surgery, flap c is advanced into the columella and fixed with skin sutures of 6-0 silk (Ethicon #780) in front and when indicated 5-0 chromic catgut (Ethicon #792) behind in the membranous septum.

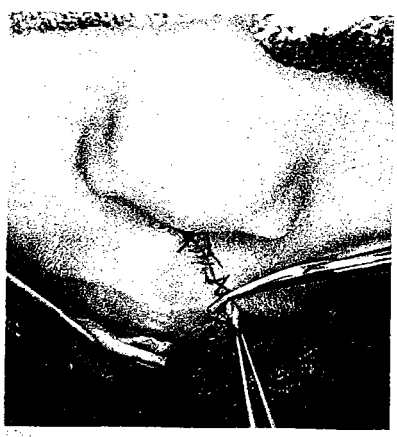
After the incisions have been made and flaps created, the vermilion parings are cut free on a single base and sutured with 4-0 chromic catgut (Ethicon #752) to line the sulcus by covering the raw area of the alveolus. At the same time, and with the same suture, the lip elements are advanced medially by suturing their upper lining edge to the maxillary mucosa along the labial sulcus on each side.

KEY STITCH

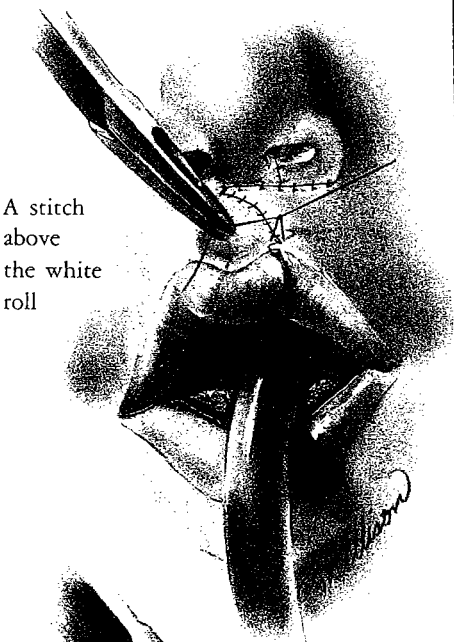
Now comes the key stitch. A 4-0 white Prolene (Ethicon #8603) or a 4-0 Mersilene (Ethicon #765) suture first picks

up the subcutaneous tissue of the leading point of the advancement flap and then takes a good bite in the depths of the rotation gap at the bottom of the back-cut. As this stitch is tied, the main actions of rotation and advancement shift the tissues into their final interlocked positions. Interrupted 4-0, 5-0 and even 6-0 chromic catgut (Ethicon #790), or preferably 4-0 Mersilene, sutures are used to bring the muscles together with one last suture in the orbicularis marginalis to force the free border of the vermilion "smack" together right to the very edge. A 6-0 silk suture is placed in the skin just above the white roll interdigitation and another in the vermilion just below it. Then a triangle of white roll is excised from the medial edge skin and a 7-0 silk (Ethicon #768) suture pins the point of the white roll flap into this notch. If the muscle sutures have succeeded in bringing the skin edges into "kissing" position, a 6-0 silk continuous suture will complete a gentle apposition.

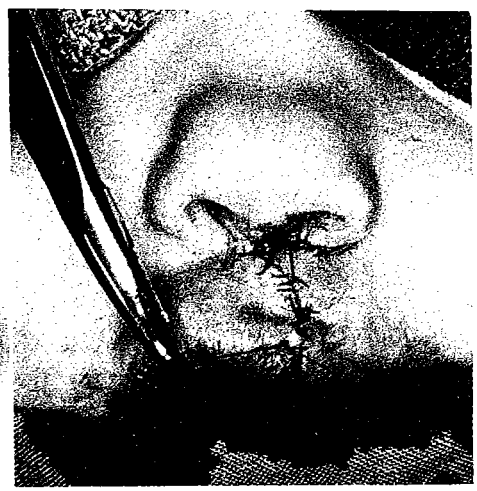
Suture of muscle at the free edge.



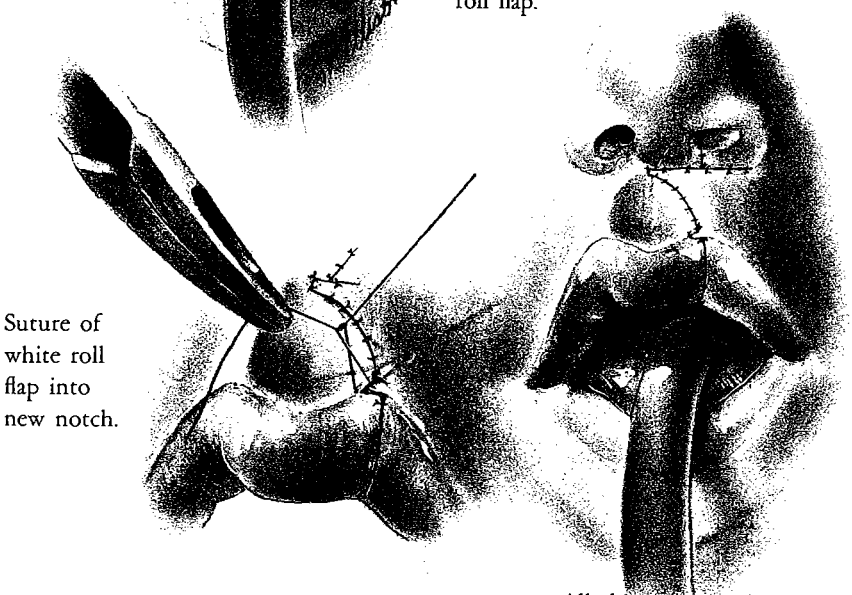
Excision of triangle of medial mucocutaneous ridge skin.



A stitch above the white roll



A stitch below the white roll flap.



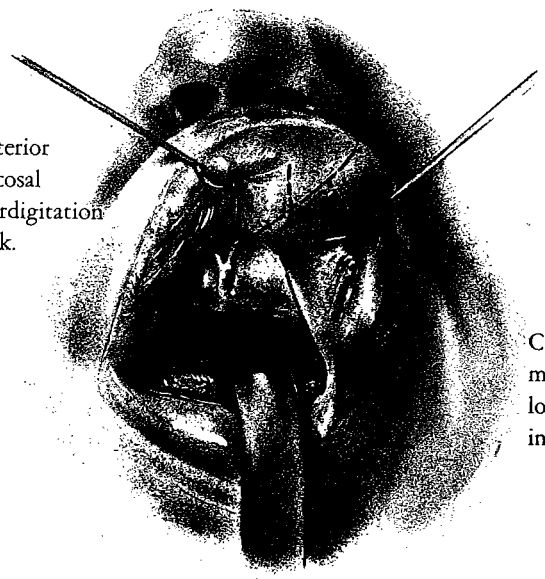
Suture of white roll flap into new notch.

All skin sutures placed.

ALAR BASE AND NASAL FLOOR

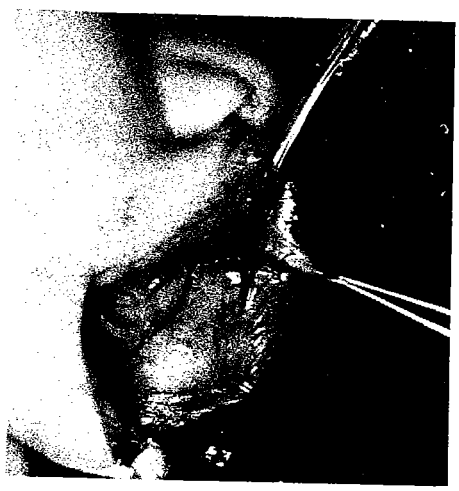
Usually an incomplete cleft will have a wider than normal nasal floor, which is corrected by a wedge excision of the excess followed by direct closure with 4-0 catgut sutures. In wider clefts which have merely a skin thread of a band joining the cleft, more active advancement and fixation of the alar base may be indicated. In such cases the tip of the alar base flap D, which has been created by division in the nasal floor region rather than discarded by wedge excision, is denuded of epithelium and advanced medially across the nasal floor and sutured with 4-0 Prolene to the septum. Mersilene 4-0 is also good for this suture. Flap c overlaps the denuded area and is sutured to the skin of the alar base to complete the nostril sill with 6-0 silk.

Closure of the externally visible vermilion edges around the free border is carried out with 6-0 chromic catgut. Then the posterior mucosal edges are approximated with 4-0 chromic

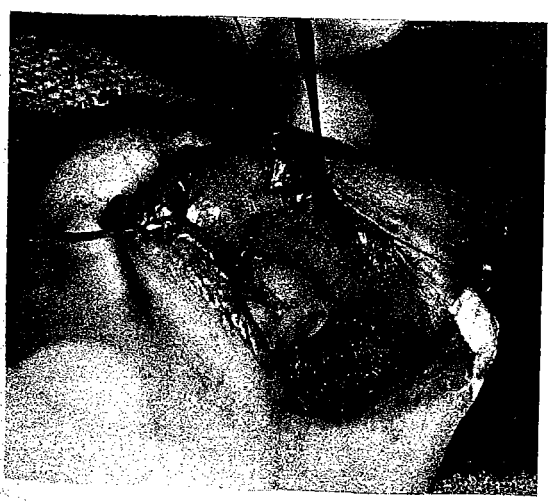


Posterior mucosal interdigitation mark.

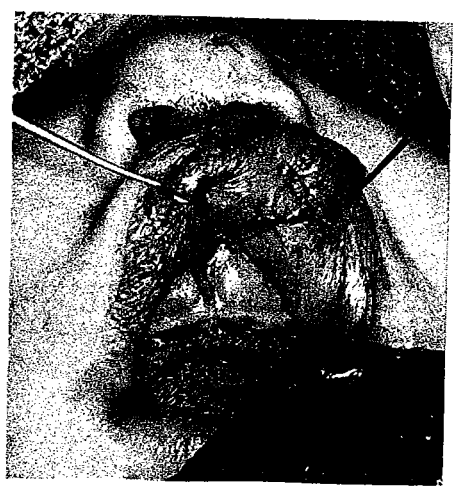
Cleft edge attenuated, medial flap made longer and releasing incision extended.



Cutting the lateral release.



Suturing the transposition flap.

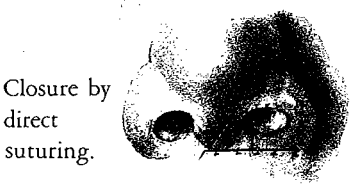


Total posterior mucosal closure.

catgut. A mucosal interdigitation is incorporated into the posterior closure to break the straight-line scar.

Alar skin web marked for excision.

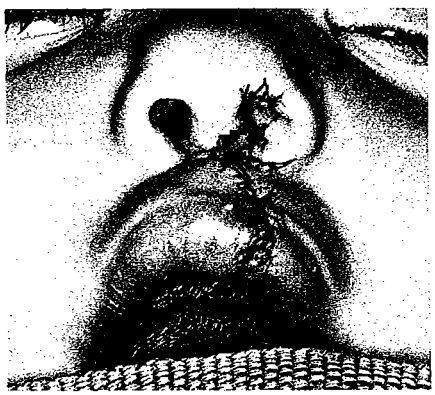
If the free border of the cleft edge is attenuated, then the medial vertical mucosal flap is cut longer and the lateral releasing incision is placed nearer the edge in order to achieve free border balance.

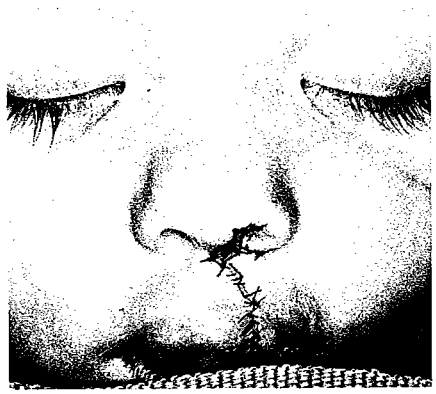


Closure by direct suturing.

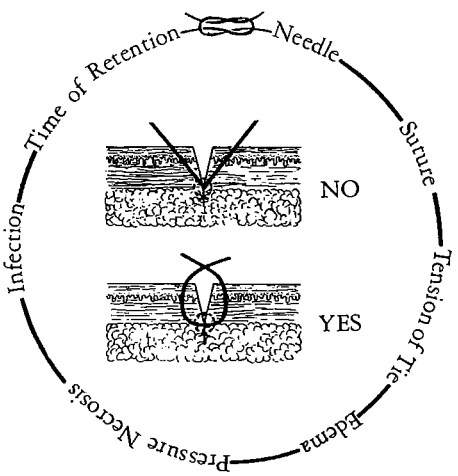
The final action is usually a crescent excision of skin along the webbed margin of the cleft nostril. This is simply sutured. There are other methods of dealing with the alar margin overhang, but they will be illustrated in the complete cleft section.

All sutures are now set.





A DISSERTATION ON THE STITCH MARK



Like a beast tracked by the print of its claws, the surgeon is known by the mark of his sutures. If by these permanent tracks we are to be known, it behooves us to scrutinize this potentially vicious cycle of suture. Each link in the chain of stitch mark making was charted in a circle for *Medical Times* in 1965.

1. First is the *needle,* fine, sharp and atraumatic, which enters the skin near the edge passing perpendicular or preferably turning slightly lateral to encompass a good bite of dermis. This ensures edge eversion.

2. Next are the *sutures,* which must be fine in caliber and for exact action must be interrupted or for gentle apposition can be continuous. They are placed close together to profit by the Lilliputian distribution of stress. Sutures placed far back from

the wound edges leave their ladder of cross marks which will require for removal too great a sacrifice of tissue.

3. During the *tie* the first loop of the knot is laid and locked, bringing the edges together by gentle persuasion. There need be no tension in the tie as the wound should be well approximated already with subcutaneous sutures. The tie merely nudges the skin edges together without the slightest evidence of blanching.

4. Postoperative *edema* is certain to swell the tissue trapped in the relentless suture loop.

5. Resulting *ischemia* may lead to necrosis.

6. Any local *necrosis* is easy prey to skin surface bacteria.

7. *Infection* will eagerly nibble a larger hole around the stitch.

8. *Time* of removal is of prime importance. The longer the foreign body suture is retained, the greater the chance of scar marks and even actual epithelialization to form permanent pits. Lip and nose sutures should be removed in two to four days. Earlier removal is possible if the wound is supported by microporous tape. Where closure demands tension, requiring longer suture retention and in a position where stitch marks are objectionable, a subcuticular suture can be used and left for one to two weeks without danger of cross tracks.

As can be seen, the sutures are out of the little patient that I have used for this entire demonstration and now even on the fourteenth postoperative day no stitch marks are visible.