III. Rotation-Advancement Conception

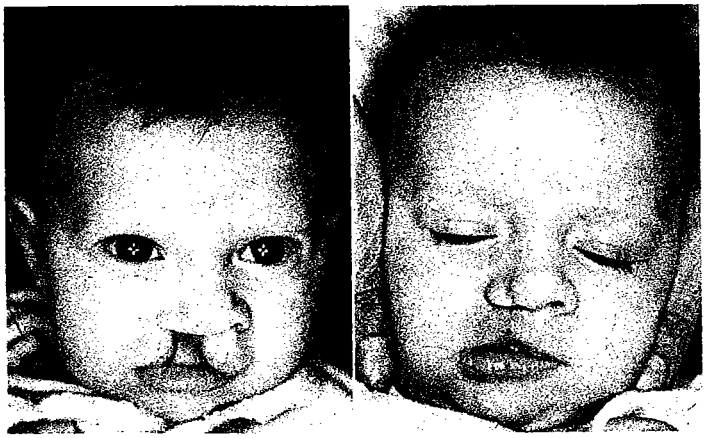
12. *Personal Approach to Cleft Lip*

THE fascination of cleft lip surgery is primed with a double-barreled charge, the *pathos* of the deformity and the *artistry* of its correction. This combined appeal was directly responsible for my entering the specialty of plastic surgery. My early training in cleft surgery provided a preamble to the rotation-advancement approach.

As a surgical intern at Boston Children's Hospital in 1944–1945, I was introduced to cleft lip surgery while assisting the fastidious and meticulous "Blue Bonny Donnie" MacCollum to mark and do Rose-Thompson and Mirault-Blair procedures. The more primitive curved-angled paring seemed simple enough, but even with Hance's diagrams from Blair's 1930 article it took me six months to figure out the logic of the Mirault-Blair principle, and by that time I began to be suspicious of its merit.

Donald MacCollum

While at Rooksdown House, near Basingstoke in England, from 1948 to 1949, as a trainee under Sir Harold Gillies I discovered that every other Saturday Professor Kilner and Eric Peet had a cleft lip and palate operative schedule at Lord Mayor Treloar Children's Hospital in Alton. This was a two-hour ride on a red double-decker bus through Hampshire countryside which was rewarded by superb technical demonstrations of straight-line lip closures. Then, during my last few months at Rooksdown House, Bill Holdsworth, an amiable Australian, took me on his lip and palate service. Holdsworth was then writing his book, *Cleft Lip and Palate,* which Gillies later reported to be "so bursting with solid common sense." This offered me the opportunity to do half a dozen straight-line lip closures.



Dissatisfied with the results, I began experimenting with a rectangular flap from the cleft side in an attempt to produce a cupid's bow. When I sketched an outline of my plan for John Barron, he asked if I had seen the new method recently described by a Canadian, LeMesurier. I was disappointed until I saw how cleverly LeMesurier had mastered the cupid's bow construction. In my attempt I had not had the imagination or the courage to use the non-cleft side to cut and drop half a bow. This was indeed an exciting concept.

Six months with Brown and McDowell was excellent exposure to their simplified triangular flap. Then a visit to LeMesurier and six months with Straith put me definitely in the quadrilateral flap camp. While a resident in Houston I carried out the LeMesurier method on two unilateral clefts which prepared me to demonstrate and promote the technique in Gillies' clinic in England in 1952–1953.

GUIDANCE FROM GILLIES

Sir Harold Gillies

As a student I had been extremely fortunate to have been exposed to so many pioneers and craftsmen in cleft deformities. I was thus provided not only familiarity with a variety of approaches but an awareness of their discrepancies.

Superimposed on this specialized background was Gillies' teaching of empirical principles. So pertinent were these principles to all phases of plastic surgery, a cleft or a contracture, a hole or a distortion, that in 1949 I condensed them into 10 commandments. As it turned out, commandments 3, 4, 6 and

9 were to have, and still do have, a guiding influence in my personal struggle with the cleft problem. By way of review, briefly they are:

3. *Honor that which is normal. Return it to normal position and retain it.*

4. *Thou shalt not throw away a living thing* until it has been proven absolutely useless.

6. *Thou shalt never steal from Peter to pay Paul unless Peter can afford it. Thou shalt not commit tension.*

9. *Thou shalt not have a routine* or make any graven image or any likeness of routine that is at East Grinstead or even St. Louis. *Thou shalt treat each case individually.*

#9 ended my residency at Barnes

Upon my return to the United States in 1953, I volunteered for naval duty and somehow ended up in the First Marine Division, in the field, Korea.

ROTATION-ADVANCEMENT CONCEPTION

The arrival of a plastic surgeon in the U.S. Marine camp caused a Korean working for the Americans to bring in his seven-year-old son, who had a rather severe unilateral cleft lip. The LeMesurier method was used and, although the family was pleased, the more I studied my result the less I liked it.

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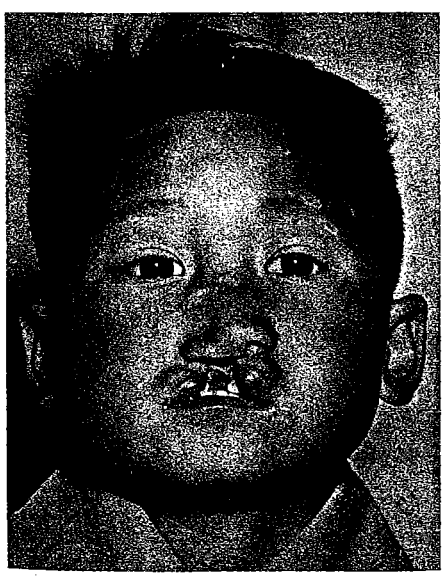
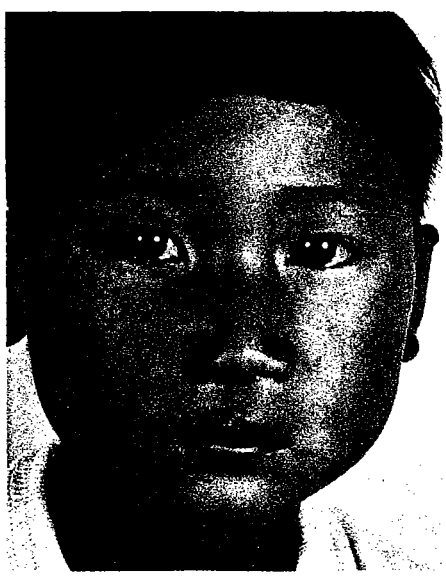
Personal Total 10
(over a 10 year in-training period)





I hold this total up to any resident who complains he is not getting enough lips

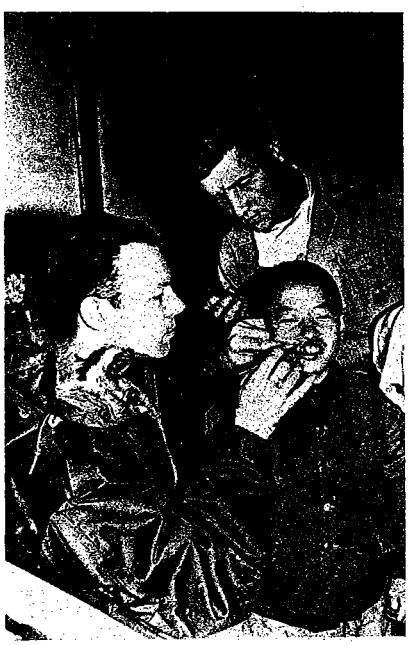
Disturbed by this dissatisfaction, I kept going over and over the problem. An obvious priority was a method that would end up with a respectable cupid's bow. LeMesurier seemed to achieve this, but by taking the main flap from the weak cleft side, already deficient in tissue. This was the *hang-up* for me and while I was trying to reverse the process, George Brusseau, the division photographer, made up a number of 8 × 10 matte prints of the "before" picture of my first Korean boy and a couple of other children who had been seen around camp earlier but had not returned. The camp carpenter, when presented with an orange crate, constructed a drawing board. With the cessation of hostilities, except for the officers' bar and an occasional old movie, after sunset there was absolutely no distraction. Many an hour was spent pondering over and marking on the photographs. In my quest for a flap from the strong non-cleft side, I began to concentrate on this portion of the deformity. As I recall, one night I had been restudying the cleft deformity in a group of Brusseau's photographs which were propped up on my orange-crate drawing board. Evidently my eyes had closed for a moment and then I had fallen asleep. The bed light must have awakened me an hour or so later, and as I opened my eyes, they focused by chance on the photograph that was standing askew. The angle of its position suddenly made me aware that what we had been searching for had been there all the time! Two-thirds of the cupid's bow, complete with tubercle, white roll of the muco-cutaneous junction, one column and the dimple of the philtrum were all present but had not been accounted for previously because of their distorted position. To get this non-cleft component down into the correct position—that is, *move what is normal into normal position*—was merely a matter of releasing it from its abnormally high attachment to the columella base. The best method seemed to be a rotation incision which, while dropping the entire cupid's bow, philtrum and dimple into normal position, would leave a triangular gap in the wake of the rotation. Thus, the main flap now became the entire non-cleft component, which had to be *rotated* to form two-thirds of the lip, leaving

the true defect as a triangle in the upper one-third of the lip. The next logical move was to maintain the rotation by supplying a *filler* for this triangular gap. A horizontal relaxing incision on the cleft side, extended laterally just under the alar base, would allow medial *advancement* of the lateral lip element into the rotation gap to complete the remaining one-third cupid's bow and lip. This advancement promised an extra bonus, that of correcting the flare of the alar base. In principle it sounded promising and on paper it looked pretty good, but only by actual application could the value of the theory be proved. This required a unilateral cleft lip patient!

FIRST ROTATION-ADVANCEMENT

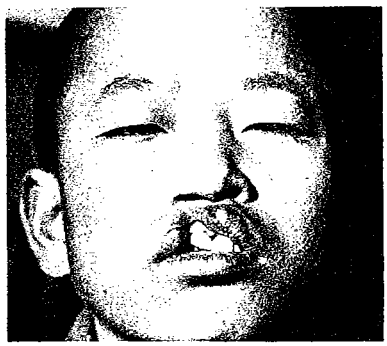
While riding in an open jeep through many a Korean village, I had noticed children with cleft lips hiding in the shadows of their huts. Yet how to entice even one into our native outpatient clinic proved to be quite a problem. Repeated appeals to the clinic interpreter were rewarded with a smiling "Ahhh, so!" but never a cleft. Finally, one day out in the rice paddies, I spotted a 10-year-old Korean boy with a unilateral cleft lip.

During earlier days in Texas I had spent numerous free afternoons roping calves. I carried a rope coiled in my footlocker for it can serve as a quiet, lethal weapon at night at close range in an emergency. Actually, I had been playing catch with a group of Korean youngsters several days previously. In desperation I dashed up the hill to my tent, grabbed the lariat, opened the loop on the way down and, on the flat run along a paddy path, lassoed the little lad. He seemed to get into the spirit of the game and allowed himself to be herded over to "A Med," our quonset hut hospital. There, with two favorite corpsmen, Texan B. L. Parker, as shown, and Dakotan Richard Ward, I marked the planned incisions on the patient.

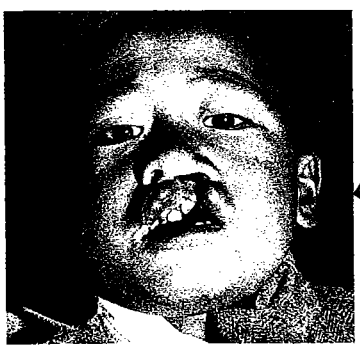


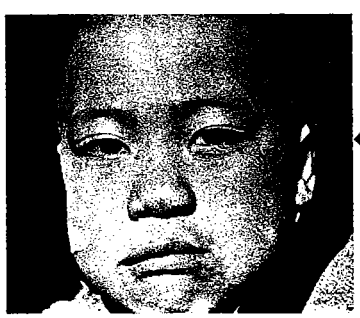
Then, under general anesthesia and without parental permission, the first rotation-advancement procedure was performed.

Reminiscent of 4th century Wei

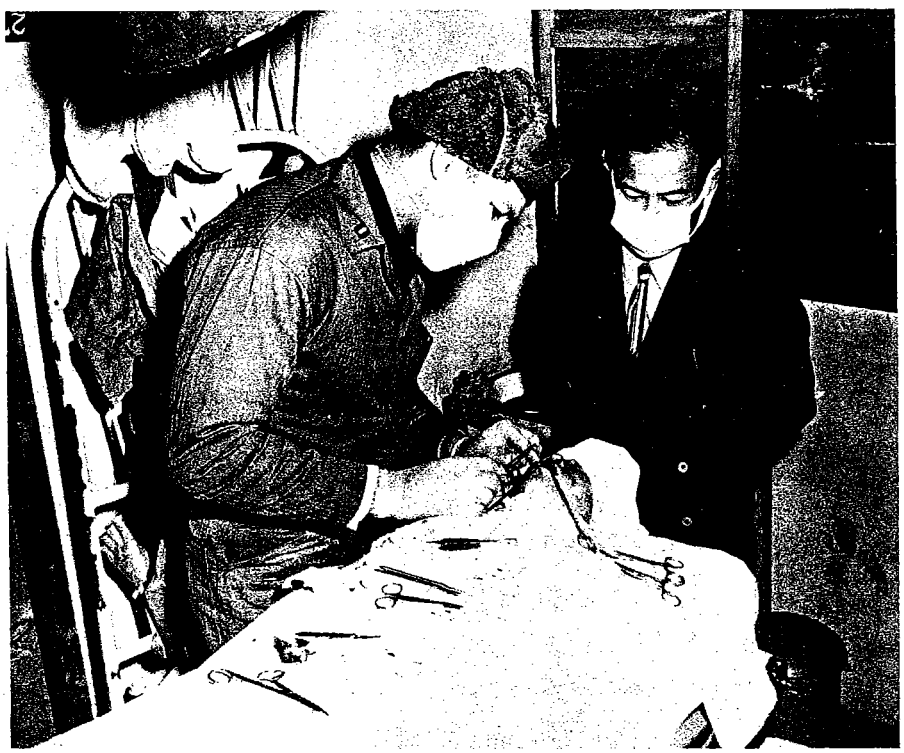


Once the stitches had been removed, the boy was turned loose, and soon other clefts began to appear. Eventually they came from all over Korea, on foot, in oxcarts and in crude baskets called "A frames" carried by shoulder straps.

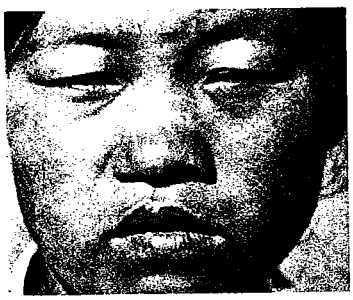




Then, after only four months, there was a change of command, and suddenly all Korean native surgery was discontinued at the main hospital. This event forced me to shift my site of operation to Kum Chon Hospital, which was little more than a local Korean first aid station. As a matter of fact, on a clear day a dry paddy had about as much to offer. The hospital had no electricity, so the operating table had to be moved about the room to follow the sun coming through a window. On cloudy days or after sunset, Dr. Kim very kindly held a flashlight. When the temperature dropped down around zero, we tried the pot-bellied stove, but the smoke only added to the low visibility. It became routine for corpsman Parker and me to wear parkas, fur-lined caps and Mickey Mouse boots with our masks and gloves. Here is a day when it was warm enough and light enough for an easy rotation-advancement under local anesthesia and Dr. Kim could devote his entire attention to the surgery.

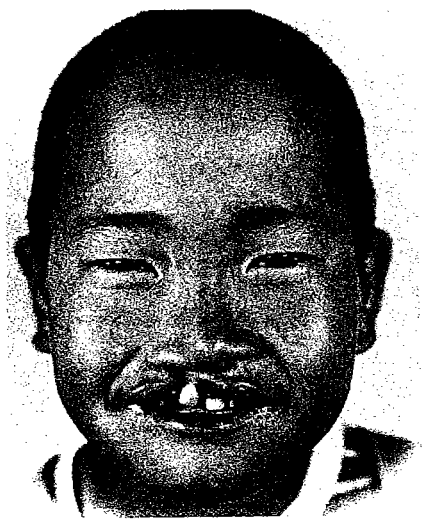


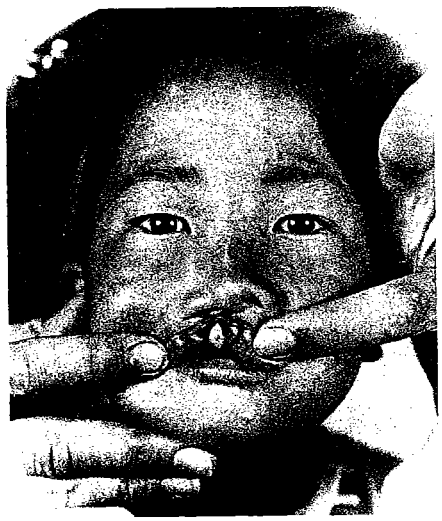
In the beginning, I was reluctant to use local anesthesia, feeling certain that after one needle an entire village, grass huts and all, would disappear down the dusty road. Such was not the case, for these people possess a stoical grace and even their



young children often accepted a needle without a whimper. As it turned out, following our shift to Kum Chon Hospital, of necessity rather than choice, the major part of the work was carried out under local anesthesia, and especially the cleft lips, whether infant, child or adult.

Most of the patients operated on in Korea were children from 5 to 10 years of age and an occasional adult. This was a fortunate eventuality as it offered an opportunity to develop the method under exceedingly favorable circumstances with robust patients presenting ample lip tissue. The results were promising, and, although the Oriental often shows a tendency toward keloid, the scars with this design healed happily.

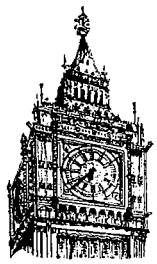




IGNORANCE IS BLISS

With the Marines in the field there was seldom a chance to peruse up-to-date medical journals. It just happened that one appeared in our tent which had an abstract about Cardosa's method for cleft lip. Although the abstractor was vague, this approach seemed to have similarities to what I was doing in Korea. Having been on the move for years in England and now in the Orient, I had not been able to keep abreast of cleft lip developments. Sometime before I had had a quick talk with Tennison about his stencil method but was completely distracted by the bent wire. Marcks's "Further Observations" were not

known or available, so actually I came onto the vestige of the cupid's bow independently. The same course of events has happened often in history and was a boon in this instance. Diversion by the advances of Tennison, Cardosa and Marcks toward the tempting inferior placement of a triangular flap might have caused me to bypass the more complete shifting of all normal structures into their rightful position.



My return to the states in 1955 from Korea was routed through Hong Kong, Delhi and *London.* It was great fun seeing familiar faces, and when the rotation-advancement method was outlined and diagramed at the London clinic at 149 Harley Street for Sir Harold Gillies, he snapped it up like "a trout on a dry fly." He insisted it be presented at the "first" International Congress of Plastic Surgery, to be held in Stockholm in August of that year, and wrote the Congress secretary, Tord Skoog, a letter requesting that my paper be added to the already overcrowded program. Skoog courteously replied to me:

The Committee has reserved five minutes for your paper on "Cupid's Bow Vestige in Harelip" and hopes you will be able to give the members the essential information in that short time.