

45. *Closure of Total Cleft in One Operation*

IN developing countries of the world, expediency in surgery, as in other aspects of life, must often take precedence over the ideal. When patients are forced to travel great distances to be treated by a plastic surgeon at all, as much as possible must be done for them at the one, and probably only, time. Seldom will they have a chance to return. If the lip cleft is closed, there will be less motivation to return as the palate cleft is not so easily visible. In these circumstances the surgeon is under pressure to try to close both the lip and the palate cleft in one operation. In the light of modern knowledge it may not be ideal for maxillary growth in the young child to carry out traumatic mucoperiosteal elevating procedures, but logic dictates that it is better to do "all" and take the chance of some secondary deformity than to settle for none or only part, thus retaining a portion of the residual cleft forever.

Of course, except for the time required, it is easier to do "all in one." Closure of the alveolar and hard palate cleft is greatly facilitated by the exposure afforded by the open lip. For many years, and even today in many clinics in England, the alveolus and anterior hard palate were and are closed at the time of lip closure. The crossbites created are being studied and treated by orthodontists.

F A R I N A

Brazil is a vast country of contrasts encompassing such extremes as the tropical jungles of the Amazon infested with the deadly



Roberto Farina

piranha to the great industrial city of São Paulo with skyscrapers and innovative plastic surgeons like Roberto Farina. Since much of Brazil is undeveloped, many clefts must travel great distances for treatment; hence the motivation for a one-stage closure of the entire cleft. Farina, who had used the two-stage Veau successfully, wrote in 1958:

Today, we have come to think that one can easily do everything at once in certain cases.

He set the age at 1 year or older and reported 23 such cases with the average operating time of two hours and normal recuperation. His one-stage cheilognathouranostaphyloplasty included a Veau-type closure of the alveolus and hard palate extended to close the soft palate followed by a LeMesurier lip closure. He cited the advantages:

1. This is hardly any risk to the patient.
2. One avoids two operations and thus two anesthetics—a doubled risk.
3. One no longer has the difficulties which one had at the junction of the hard and soft palate in palatoplasties done in two stages as recommended by Veau.
4. The closure at the level of the alveolar arch becomes easier with a perfect reconstitution of the nostril floor, without having to fear the appearance of bucco-nasal or vestibular fistulae. . . .
5. It is more economical for the patient.
6. The results, in general, are “marvelous” from an anatomical and morphological point of view.

The 1971 Melbourne International Congress was the site for simultaneous reporting by Manchester, Kaplan and Davies of simultaneous lip and palate closure in one operation.

MANCHESTER

William Manchester of Auckland, New Zealand, is rather proud of his extensive closure of the alveolar and hard palate cleft along with his lip closure. This radical action is with the aid of presurgical orthodontics by Peat in the form of an expanding plate to spread the maxillae and simple elastic traction to restrain the premaxilla, so that by 5 months the segments are prepared. As he

wrote in the 1971 *Transactions* of the Melbourne International Congress:

Everything is now ready for the first stage of the programme which aims to repair not only the lip on both sides but the whole length of the hard palate as well. Thus, when the second stage is reached at the age of nine months, only a cleft in the soft palate remains.

Manchester's second stage involves a palatal pushback using the Cronin posterior advancement of the nasal mucoperiosteum and a V-Y repositioning of the oral mucoperiosteum. This totally denudes the hard palate at 9 months of age; which outcome should give some interesting data after 20 years.

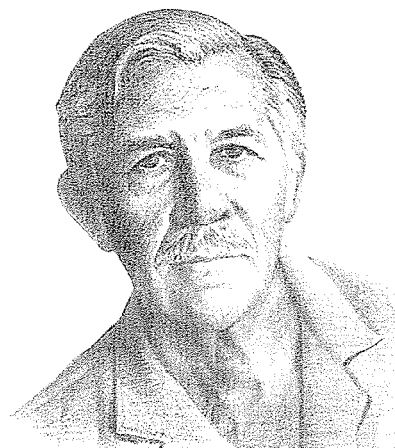
Manchester also has a third stage for rhinoplasty and columella lengthening at 15 years. Thus the number of surgeries is not remarkably reduced.

KAPLAN

Isaac Kaplan, born in the Orange Free State, served as an intelligence officer in the South African division of the 8th Army during World War II and received his degree after the war at the University of the Witwatersrand Medical School in Johannesburg. Trained by Sir Harold Gillies in England, he established a plastic surgery department in Beilinson Hospital, University of Tel Aviv, Israel, where, during the Yom Kippur War, he turned over an entire floor for care of the wounded. Kaplan, also a pioneer in the development and use of a continuous-wave carbon dioxide laser knife, in 1974 with Dresner, Gorodischer and Radin, recalled his work at Barsky's unit in Vietnam:

In 1 year (1968-1969) over 400 untreated cases of cleft lip and palate were seen at the Children's Medical Relief International Plastic Surgery Unit in Saigon. Their ages ranged from infancy well into adulthood. Because of the workload and the difficulties of multiple-staged operations, simultaneous repair of the lip and palate was carried out on some of the older patients (Kaplan and Wesser, 1971). The operation was found to be so technically feasible that it soon became routine for infants too.

An experiment was set up in Israel between 1970 and 1972 in which 13 cleft infants had the combined lip and palate closure at



Isaac Kaplan

*Subsequent
maxillary
retrusion may
bring on family
tension later!*

3 months and a control group of 13 cleft infants had the lip closed at 3 months and the palate at between 10 and 12 months of age. The lip was closed by the LeMesurier or Millard operation, the palate by the von Langenbeck with no attempt at closure of the alveolus, primary bone grafting or premaxillary setback. Naturally, the psychological effect of early complete cleft closure lessened family tensions at this stage. No maxillary growth retardation had been noted after two to four years and none would be expected to be noticeable at that time. The incidence of ear infections was much less in the experimental one-stage group. Study of speech development was of interest:

Commencement of "babbling" in the experimental group was comparable with normal children whereas in the control group it was delayed.

Uttering of first sounds such as nasal sounds and sibilants commenced at the time expected for normal children and was delayed in the control group.

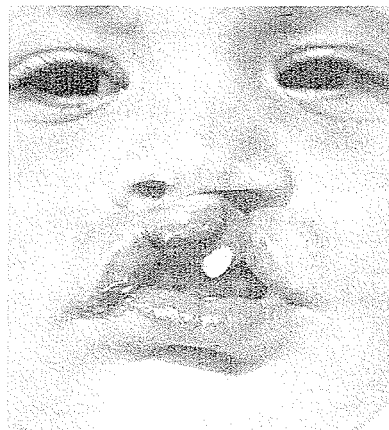
"One-word response" appeared in all these cases at the time expected for normal children, whereas in the control group this was delayed.

Two- to three-word response was delayed as compared to normal children but was manifest earlier than in the control group.

The initial nasal sounds on which intelligibility of phonation depends were judged to be adequate in 40 per cent whereas the remaining 60 per cent were comparable with the control group.

Word intelligibility was adequate in 50 per cent of the cases whereas the remaining 50 per cent were comparable with the control group.

Three of these children have now reached the age of fluent speech and speak normally with regard to length and sequence of the sentences although nasality is variable.



In 1977 Kaplan, enclosing these photographs, wrote:

We are at the moment preparing an article which will confirm our previous observations that the development of the maxilla in these cases of simultaneous repair of lip and palate is not significantly affected, provided the classical Langenbeck procedure is performed on the palate. The speech in these cases is highly satisfactory in a vast majority and our results compare very favorably with those of others.

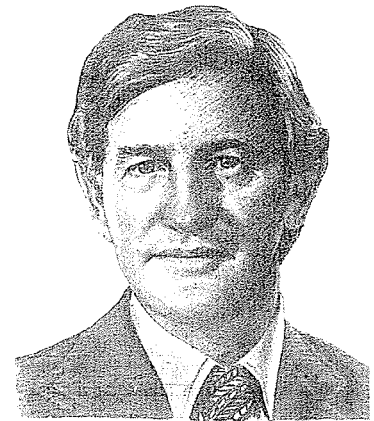
DAVIES' TRUE ALL-IN-ONE CLOSURE OF THE CLEFT

David Davies of Capetown, South Africa, said at the International Congress in Melbourne, Australia, in 1971:

Our problem, which I am sure is common to all developing countries, is the difficulty of insuring adequate parental care and nutrition of these children until they are ready for operation. Farina approached this problem initially in adults by suggesting a one-stage repair. I was told many years ago that the late Eric Peet from Oxford repaired adult bilateral clefts in one stage while holidaying in India. However, most of these repairs were simple closures with no pushback and a high percentage of resultant fistulae. Unless one can produce a comparable or better result than a multistage procedure the operation should not be done. We started this operation at first tentatively in 1964, but the procedure has now become routine. . . . The lip is repaired with a Z-plasty, the alveolar defect grafted, and an extensive pushback done with the use of a Millard island flap. After the operation parental acceptance of the child is good and no further adjustments are necessary until the child is five or six years of age. . . .

A good speech result is the most important aim of the cleft palate repair. For this reason, the entire palate is closed before the child starts making any noises so that auditory feedback can be normal from the beginning; otherwise, it will result in habit patterns which are difficult to break. This is particularly important in the less intelligent patient. It has often been noted on cineradiography that an intelligent child will be able to use the pharyngeal muscles for a slightly short palate and still have good speech results.

In a series of 85 complete clefts of the lip and palate closed in one stage at 3½ months, with more than 60 percent of the children black, Davies reported 22 out of 27 at normal or near normal resonance (82 percent). His impression is that the longer, more mobile palate resulting from the island flap is giving much



David Davies

better speech results, but would like to wait until he has 50 children over 6 years of age before making a final comparison with other series.

He does not agree with the orthodontists' objections to an island flap on the ground that it leaves a large raw area and the resultant scarring causes collapse. The raw area epithelializes in two to three weeks. No decrease in vault space has been noted in any of the cases. Davies feels that in the one-stage closure there is less surgical insult than in the multiple-staged procedure since the operation is easier. This claim is borne out by the fact that he had only two fistulae in 85 cases, one of which closed spontaneously.

In 1972, in a paper prepared for the *Journal of the South African Speech and Hearing Association*, D. Davies, D. M. Whitting, B. H. Miller, B. J. Cremin and D. Morrison gave an extensive report on 95 cases of one-stage closure. They discussed all aspects, but the one of greatest concern was orthodontic assessment.

Results show that 47% of these patients have a Class III relationship of the incisor teeth, i.e., the lower incisors occluding in front of the upper. The remaining 53% have a Class I (or normal) occlusion. The maxillary minor segment showed varying degrees of collapse in 66.7% of cases. This was assessed by relating the teeth on the minor segment to the opposing mandibular teeth and noting the amount of collapse towards the midline.

Although the percentage of cases showing Class III incisor relationship and collapse of the minor segment may appear to be high, these figures compare quite favorably with those of other published series. Also, in many of these cases, simple orthodontic treatment is all that will be required to bring about correction.

In reference to speech assessment the senior speech therapist of this group, D. M. Whitting, wrote in 1972:

95% of the children did *not* have normal speech. They had normal or near normal *nasal resonance*. 60% had normal or near normal articulation. I think we will have to wait till we have assessments of 50 children over the age of 6 years before we can quote figures suitable for comparison with other series. Articulatory development is not stabilized in the normal child before 6-8 years.

LØSKEN AND OTHERS

In 1973 H. Wolfgang Løsken, trained by David Davies in Capetown and as a Maytag Fellow in Miami, wrote after one year of practice in Pietermaritzburg, South Africa:

The most exciting repair of all was when I did my first all-in-one cleft repair on a five months old complete cleft of the lip and palate, with a gap in the alveolus of 1.7 cm.

Løsken's next letter was written in 1974, and an excerpt from it is of interest:

I have now done three complete repairs of the lip and palate together with no fistulae. At our recent Congress in Johannesburg, Davies presented the results of his 110 complete one-stage repairs. He was certainly tremendously honest in his presentation and very critical of his own work and results. He is certainly a tremendous example to us younger surgeons who tend to be over-enthusiastic and possibly not sufficiently critical of our own work and results.

I got the impression from David that he felt it was still a little early to come to any conclusions about his results or felt one would have to wait a long time before being certain.

In 1977 Davies wrote:

In spite of criticisms from our orthodontic colleagues I feel that there is a definite place for a more radical approach to cleft lip and palate surgery. We have completed 155 cases repairing the lip and palatal clefts in one operation and the last fifteen cases have been neo-nates six days of age. Technically the operation is not a difficult one for the surgeon and providing that the anaesthesia is superb there does not appear to be any increased risk for the child. Eight of these cases needed no blood transfusion as their measured blood loss was less than 5% of their total blood volume. Neo-nates are very resilient as they are still protected by maternal antibodies and in fact from the physiological point of view the infant is more vulnerable at three months of age when most surgeons start their operative procedures.

Early radical surgery is ideally suited to the 75% of the world that is under supplied with medical care and has socio-economic problems unknown in the States. I was most interested to hear from Fernando Monasterio that his mobile units and the people that they have trained in outlying parts of Mexico have completed no fewer than 1000 radical repairs.



Wolfgang Løsken

*another incidence
of David's Total
honesty - He
Wrote on a 1978
Xmas Card:*

*Don't get too excited
Ralph, but I am
falling in love
with the
rotation-advancement
procedure! "*

Brown and McDowell stated in 1945:

Amnen..

It is unfortunate that cleft lips so frequently coexist with cleft palate, causing many surgeons to be pre-occupied with closing part of the palate at the same time the lip is closed. Aside from the probability that early surgical treatment to the palate may result in unnecessary dental damage, it seems to us that good repair of the lip is difficult enough to require the surgeon's individual attention in the process.

Of course, it depends on the circumstances involved in the specific case. If it is a question of "all at once" or "only a part ever," then the "all in one" principle is the wiser choice. Under the usual modern conditions, speed or "all in one" is not the goal. The surgeon must design the number of stages, sequence of closures and optimal age for each, guided by his circumstances, his experience and that of the other specialty members of his team.