

5. Optimum Time for Cleft Lip Surgery

SURGEONS have disagreed as to the best time to close the lip cleft through the centuries, and the controversy continues in most clinics throughout the world today.

The cleft surgeon of the Chin Dynasty had such strict and prolonged postoperative orders that it is unlikely he would have attempted closure on any but mature and responsible adults.

What illustrations have survived from the works of the sixteenth-century French surgeons such as Paré and Guillemeau suggest that they operated on their patients in later childhood or early adult life.

About 1666 James Cooke of Warwick, England, noted:

'Tis more dangerous to perform upon a grown than young person, though happily perform'd on some of 28 years of age. The younger children are when cut, 'tis the better, yea while Infants, unless they be sick or weak. It's more fitly done in Summer than Winter, in Spring than Fall. . . .

To operate in, choose a very clean place, and put the Child in the Lap of a discreet person, and let one stand behind to hold the Head, the Child's Hands being ty'd down, and if possible keep it from Sleep for ten or twelve hours before the Operation, that it may be disposed to Sleep presently after. . . . cut both sides of the Hair-Lip with Scissors, so much is needful; after pass through a Needle or two, . . . leaving them in, winding the Thread about, as Taylors do when they stick them on their skirts.

The skillful Dutch surgeon Henrik van Roonhuyzi, in Amsterdam in 1674, recommended surgery on cleft lips at three to four months, warning that if performed prior to this the chances of success were markedly reduced.

Consistent with the general French attitude that early cleft



operations were dangerous and unnecessary, LeClerc in 1701 advised that the operation should not be practiced

upon old nor scorbutic Persons, nor upon young Children by reason that their continual Crying would hinder the Re-union. But if any are desirous that it should be done to these last, they are to be kept from taking Rest for a long time; to the end that they may fall asleep after the Operation, which is thus effected.

As Heister, the founder of scientific surgery in Germany, wrote in 1739:

It has been the opinion of the ancients that it is not safe to perform the operation for the harelip upon infants before they are two years of age or even four or five. The contrary of which is taught by experience from whence we are furnished with instances of infants happily cured of a harelip when they have not been above five or six months old, if they are well in other respects and the operation rightly performed . . .

Even the Boston *Evening Post* in colonial 1770 put in its two cents' worth with an editorial comment after reporting two cases, a young man and a child, treated for cleft of the lip by Mr. Charles Hall:

press
pressure

The Impressions these unhappy Sights are apt to make on married Women, should be an Inducement to have this Defect in Nature rectified early in Life, as there are numerous Instances of the Mother's Affection having impressed her Offspring with the like Deformity.

Dupuytren preferred the second or third month, Sir William Fergusson the end of the first month, while Dieffenbach advised postponement until dentition was accomplished.

Surgeons like Malgaigne and Giraldes approved a very early operation: immediately or soon after birth. Guersant in 1826 reasoned that children can do without the breast for four days and noted that out of seven operations performed immediately after birth he had failed only once, whereas out of seven performed at one month he failed five times. Mason cited the examples of Dawson of Dungannon, who operated on an infant at seven hours, and Douglas of Shatford (1854), who operated successfully at two hours. Blair at Washington University, St. Louis, in 1930 advocated cleft lip closure early:

very
early

During the first few days of life, there probably remains some of the immunity to surgical shock which is necessarily present during the process of birth. Operation may be done in the first 24 hours. In our series no deaths have occurred from operations on 24 hour old babies. During the period of jaundice, usually from the fourth to the tenth day, the clotting time may be prolonged and operation is not done in this period. The technique of the operation at this early age is difficult but the advantages to the baby and its mother outweigh the disadvantages to the surgeon.

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Robert H. Ivy of the University of Pennsylvania has often spoken forth with sense backed by experience. At school he was a long-distance runner, then a dentist, a 1905 missionary in China and finally a plastic surgeon who continued to run the long race of life, and even after 92 years still with a spry but steady stride. Although a longtime friend and admirer of Vilray Blair, he did not let personal feelings influence his common sense. In 1955 he wrote:



Robert Ivy

Regarding early treatment, it should be stated that newborn cleft lip and cleft palate do not constitute a surgical emergency. Frequently the physician who has delivered a baby with one or both of these anomalies is under the impression that immediate closure of the cleft is imperative to allow the baby to nurse and without surgical closure, starvation is imminent. Nothing is more erroneous. The surest way to kill a baby in a poor condition of nutrition is to operate on it. . . . By the use of a little ingenuity and patience, feeding can be carried out with a medicine dropper, spoon or special feeders. Swallowing of the food is facilitated by holding the baby in the upright position. Some surgeons advocate operation a few days after birth. *We do not* subscribe to this, as we feel that accurate coadaptation of the cleft edges is more difficult when the parts are so small and much better end results are obtained by waiting until the child is six weeks to three months old or has reached ten pounds in weight.

In 1954 MacCollum and Richardson of Boston Children's Hospital answered the parents' question "When will the operation be done?" with "We usually operate when your child is around six pounds, must be gaining in weight steadily, and must be in good health." Evidently, this dropping of the limit by four pounds was not a hazard at Boston Children's Hospital as they reported in 1958 no operative deaths in a series of 2,635 cases.

Clarkson, of Guy's Hospital, London, said in 1955:

Once the baby is gaining weight and is considered by the surgeon fit to stand his operation, the lip should be closed. Apart from the psychological upsets which the open cleft causes to the parents, and apart from the feeding difficulties associated with it, there is the fact that the infant by sucking its thumb and using it as a lever in the cleft will enlarge the size of the palatal cleft and increase the difficulties of its successful closure. The rule which holds generally in this country [England] that the baby should be at least 10 lb. in weight was possibly a reasonable one when this work was done in general services. Its effect in practice to-day is to delay the primary repair of most cleft lips in England until the baby is between 3 and 6 months of age. I believe this to be quite unnecessarily late, and indeed undesirable, when the work is done at plastic centres.

Claire Straith in Detroit operated at a very early age and used local anesthesia to reduce the dangers. But Straith was an unswerving Scotsman and a fast surgeon not easily disturbed by minor details such as a twisting head or distances measured in millimeters. I have heard him defend his stand on early surgery with

If I don't operate, someone else will and it is important that the lip be done correctly.

*Quite
Late*

A peek behind the Iron Curtain in 1959 revealed to me, and was confirmed by Michael Lewin in 1962, that most Russian surgeons operate on clefts of the lip between six months and one year. The old master, Limberg of Leningrad, withholds surgery for at least an entire year.

Bradford Cannon of Harvard Medical School wrote in the *New England Journal of Medicine* in 1967:

The operation for cleft lip should be done in the first few months of life; it may be done within the first twenty-four hours if the baby is healthy in every other respect. . . . The mother need never see the deformed baby. Another period of hospitalization for the baby will be unnecessary. The problem of feeding will be simplified. . . . If early operation is impossible, closure of the lip should be postponed at least until after the birth weight has been regained—usually in two or four weeks.

Holdsworth of London noted in 1970 that in Great Britain 4.5 kg. weight or three months age is the usual criterion for primary lip operation. He wisely suggested:

Parents will be more reconciled to their child, and his surgery, if they have lived a few weeks with the untreated deformity. As a gesture of kindness to over-wrought parents, the early operation is a mistake.

After one month of age, the patient has better cardiovascular-pulmonary adjustment, nutritional transition and ability to combat infection. This combination emphasizes Wilhelmsen and Musgrave's 1966 preoperative requirements in the "rule of 10":

Weight—10 pounds

Hemoglobin—10 grams

White count under 10,000 per cubic millimeter

*prime
time*

Most modern surgeons follow this general rule.

As I wrote in 1965, the cleft of the lip can be closed any time from the day of birth to old age. There is no need to rush from the *womb* to the *operating room*. The best final results are being achieved when the first operation is carried out at about three months, which is after the nose and lip components have had a chance to increase in size along with the patient, who should weigh 10 to 12 pounds. In 1967 the general "rule of *over 10*" was proposed as a criterion for lip surgery:

Weight—over 10 pounds

Hemoglobin—over 10 grams

Age—over 10 weeks

The addition of the simple adhesion procedure in the wide clefts has enabled us to move up the initial surgery to a *few weeks* after birth and to postpone the final lip closure to *six months*.

Denis Glass lamented in 1970:

It is a pity that the work by Straith (1955) and McCash (1957) has not received more attention. Lip closure in the first week of neonatal life under local anaesthesia would seem to have many beneficial effects.

This was spoken like a true orthodontist, interested in alveolar molding with little insight into the details of actual lip surgery. He would probably settle for a "lip adhesion" at three weeks which will start early molding of the maxillary elements. This might be, indeed, the best compromise for all sides, leaving the

detailed surgery until the baby is six months old, when he will be stronger and offer more and better tissue toward the lip and nose construction. As the time for surgery is not a life-and-death matter today, surely if the surgeon can do a better operation later with a more nearly perfect result, this advantage can never be outweighed by either comfort or expediency to patient and parents.

THE BEST OF BOTH TIMES

Today I postpone an incomplete unilateral cleft to at least three months of age and preferably to four or five months when possible. Of course, at the time of surgery a hemoglobin level of 10 gm. and freedom from infection are required. The same timetable is used for complete clefts without alveolar distortion or palate cleft. For complete clefts with alveolar distortion and cleft of the palate, a lip adhesion procedure and a soft palate closure are carried out at about two to three weeks of age with the same general blood requirements even though these preliminary operations are quick and bloodless. Then, at approximately six months of age the definitive closure of the nasal floor and lip and correction of the nose is accomplished.

*a
happy
compromise*