

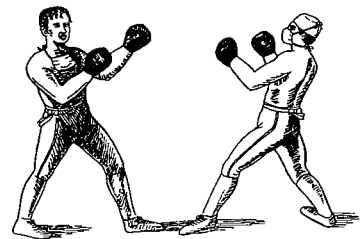
5. *The Surgical Evolution of Bilateral Lip Clefts*

THE evolution of the surgical treatment of bilateral clefts of the lip has been influenced by several fundamental factors: the inability of the infant to suck breast or even a bottle nipple, the amount of projection of the premaxilla, the size of the prolabium and the shortness of the columella. Yet, even when the palate is intact so that feeding is not quite such a problem and when the premaxilla does not project, when the prolabium is of adequate size and when the columella is long enough (rare!), this deformity still presents difficulty.

Most cleft lip surgeons through the ages, with or without good cause, have adapted their unilateral cleft design to bilateral cleft cases simply by doubling it. Many of us at some time have participated in this expedient ruse, but it becomes more and more apparent that it is *nonsense*. The deformity of a bilateral cleft is not merely a right or left unilateral fissure with its mirror image on the opposite side. It is an entirely different entity with different requirements deserving a different approach.

A BILATERAL BOXING RING

Through the ages, bilateral cleft lip surgery, beset with controversy, has progressed painfully and in spite of many heated battles raging on its every aspect. As already noted, there are numerous ways to deal with the premaxilla, and each has its merits, its discrepancies and its enthusiastic champions. The presence of the



projecting premaxilla and how it is to be handled has always been and continues to be a difficult variable and at the core of some of the controversies. There are such questions as whether to close the clefts in one or two stages and whether to use the prolabium in the lip, in the columella or in both. There is also the question of whether to bolster the prolabium with tissue from the lateral elements, and the variations of design for this aspect are legion.

ONE - OR TWO-STEP CLOSURE

Closure of soft tissue over the projecting premaxilla can be responsible for great tension which increases the chance of disruption. Besides their direct but varied attack on the projecting premaxilla, surgeons have varied their approach to the lip. There are some who prefer to close one side first and wait for healing before closing the opposite side. Yet, there have probably been more surgeons, and just as early in history, who preferred to close both sides at the same time.

unless absolutely necessary why add asymmetry to the problem?



Pierre Desault

THE DESAULT PLAN

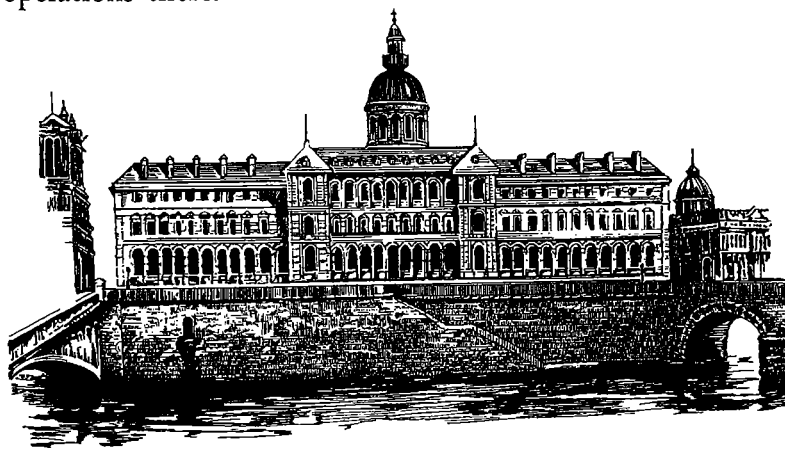
After premaxillary compression by a bandage, Pierre Joseph Desault, as early as 1790, advocated surgical closure of both clefts simultaneously, using the prolabium for the central portion of the lip. Translation of Desault's work by E. D. Smith of South Carolina College in 1814 reproduced sketched diagrams of Marie Dehannes, a five-year-old girl with a severe bilateral cleft who was admitted to Hôtel-Dieu, Paris, September 7, 1790. Desault's classic cloth compression bandage was applied before and after the surgery. Once the compression had retracted the premaxilla sufficiently, Desault pared the cleft edges and approximated lip elements with through-and-through needles wrapped with wax thread in figure-of-eight fashion. The compression bandage was reapplied over the suturing until healing by the tenth day. The illustration of the result recorded use of the prolabium in the lip and even sketched the production of a cupid's bow and a philtrum dimple. Both bow and dimple, however, were only a figment of the artist's imagination and the surgeon's dream.



AN EARLY CLEFT CENTER

Hôtel-Dieu of Paris is probably the oldest hospital in Europe, having been founded about A.D. 651. In the twelfth century it was rebuilt adjoining Notre Dame cathedral on a branch of the river Seine. All extremes of human misery have been suffered within its walls, and at times during the French Revolution it contained 9,000 inmates with as many as eight huddled in a bed with no regard for sex, disease or, for that matter, death itself. Here, through the centuries, cleft lip and palate surgeons have pioneered this specialty. Ambroise Paré served on its staff, as did Blandin, de la Faye and Desault. The Clinical School of Surgery which Desault instituted at Hôtel-Dieu attracted great numbers of students from France and abroad; he frequently had an audience of about 600. Later, Dupuytren became known as the Brigand of Hôtel-Dieu.

Gensoul was responsible for the use of ether, and for the first recovery room in this hospital. In his time, to serve as a surgeon major at Hôtel-Dieu one had to remain unmarried and live in rooms on the premises on a very small salary. Gensoul rebelled against such regimentation and turned the hospital into the "Hotel" its name suggests by charging on the side for the rooms. When his unusual means of increasing personal income was discovered, he was threatened with dismissal. Demonstrating a resourcefulness befitting a plastic surgeon, he evaded the penalty by marrying the administrator's daughter and continued in service until his expanding private practice made it impractical. Roux also worked at Hôtel-Dieu and did many of his early palate operations there.



A common scene by the side of Hôtel-Dieu, even in the depth of winter, was a group of Augustinian sisters who, having broken the ice on the Seine, were standing up to their knees in the freezing river water washing the soiled hospital linen. Among the sheets, pillowcases and towels would have been Desault's string head bandages used to restrain and maintain the projecting premaxilla in his bilateral cleft cases.

MORE CONTROVERSY

Many early surgeons seem to have followed Desault's format. Yet the controversy has been and is still being waged, and various regimens gain and lose favor from year to year. In 1939 Fomon reported what he called the general consensus among surgeons at that time but what actually were the teachings of their field leader, Victor Veau of Paris:

[in] clefts in which the premaxilla protrudes markedly early surgery is imperative, otherwise the bones can no longer be molded by pressure of the reconstructed lip muscle . . . and are best repaired in three or more stages, one side of the lip and anterior palate first, the second side four weeks later, and finally the posterior palate, third.

Veau also noted that

in these complicated bilateral cases, closure of the entire defect at one time is too formidable.

Thus the *haste* to close had influenced the *amount* of closure possible.

Brown and McDowell in St. Louis set the premaxilla back and closed both clefts at once while Kilner of Oxford left the premaxilla projecting and closed one side at a time. As Holdsworth of Britain said:

Each cleft is closed at a separate operation with an interval of about one month. The narrower cleft is closed first.

There are many, including the Americans Cronin, Bauer, Trusler and Tondra, who prefer to close one cleft at a time but favor the wide cleft first in order to pull the deviated premaxilla into the midline.

Russian Kolesov in 1970 acknowledged that years ago S. D. Ternovskiy and others recommended a two-stage closure of the lip in bilateral clefts. He then gave his reasons for following this plan:

As the experience of many clinics has shown over many years, closing both sides of bilateral clefts at the same time when the alveolar ridge and palate are also cleft does not obtain a good functional and cosmetic result. The complex anatomical interrelationships of the maxillary bones and the defect of soft tissue interfere with this.

Slaughter, Henry and Berger of Chicago, concerned about the blood supply to the philtrum, feared that the extensive undermining, excisions and incisions of tissue bordering the cleft required for a one-stage closure could be compromising. They stated:

It is, therefore, logical to assume that only one side of a bilateral cleft should be repaired at a time. This allows for a revascularization of the area in a manner compatible with accepted plastic surgical procedures. The double cleft is thereby first converted into a single cleft.

Clarence Monroe of Chicago, renowned for his work on preliminary premaxillary recession in infancy, by 1974 was hedging on this aspect and compensated with:

Where we formerly closed the bilateral lip at a single operation, we now do it in two steps, if necessary.

Manchester of New Zealand and Broadbent of Utah prefer a one-stage closure while for various specific nasal and labial reasons Skoog of Sweden and Guerrero-Santos of Mexico both favor two stages.

It is not of great importance to record each surgeon's stand on the number of stages he uses for bilateral closure. In 1972 I estimated the probable general percentage and gave arguments for a one-stage closure:

If a poll were taken today, certainly there are surgeons on both sides but probably the two-stagers outnumber the "all in one." The general regime advocated by Desault—early external compression followed by closure of both sides of the lip at the same time—will eventually be the method of choice. I consider this best because it maintains symmetry and enables better

muscle union across the cleft primarily and eventually more effective columella lengthening. A key factor is the actual craftsmanship of the surgeon to accomplish the lip closure in one stage and this is easier than it seems.

As it turned out there has been more progress along this line than was predicted, probably because of the reasons already noted. A survey reported in June 1974 by resident John Osborn of Toledo revealed that in 80 residency training programs in the U.S.A. and Canada the approach to bilateral cleft lip closure is divided, with both sides being approximated at the same time in about 60 percent and approximation on one side at a time in 40 percent.

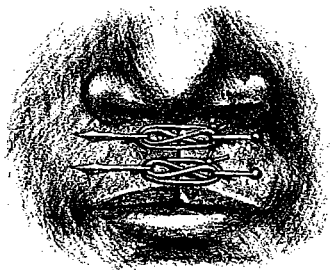


DESTINY OF THE PROLABIUM

There have been as many fisticuffs over how to use the prolabium as over what to do with the premaxilla or in how many stages to close the lip. At least Englishman James Cooke of Warwick took a positive step in 1693 when he advocated saving the prolabium:

The lip sometimes is double cleft. There remaining only a piece between both, which unless it be callous, it need not be taken away.

American Joseph Pancoast, in his 1844 *Treatise on Operative Surgery*, logically planned his operation for "double hare-lips" around the specific prolabium.



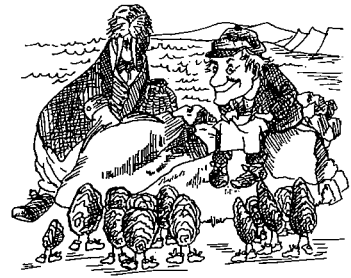
The mode of proceeding in the cure of this variety of deformity will depend upon the size of the intermediate part. If it be less than a third of an inch broad, and thin, it should be excised near its base, and the operation proceeded in as in ordinary cases of single hare-lip.



If the prolabium was larger, Pancoast used it to form the center vertical portion of the lip, but if it was short, he was content to bring the lateral lip elements together below it.

Since those days the prolabium has continued to be hustled in every direction—pushed up into the columella, pulled down into the lip, chopped up along each side, high, low and in the middle, had flaps stuck along its lower border and even shoved behind its backside. This poor, innocent, little soft tissue termination of the

frontonasal component, the *oyster* of bilateral clefts, has been exploited in so many ways by so many surgeons that one is tempted to allegorize the prolabium in the words of Lewis Carroll. Like any couple of surgeons in a cleft palate clinic—and that could be Dieffenbach and Langenbeck, Franco and Paré, Kilner and Peet or any of us today—



from John Tenniel

“The Walrus and the Carpenter
 Walked on a mile or so,
 And then they rested on a rock
 Conveniently low.
 And all the little Oysters *stood*
 And waited in a row.

.....
 ‘Now, if you’re ready, Oysters dear,
 We can begin to feed.’

In The O.R.

“‘But not on us!’ the Oysters cried,
 Turning a little *blue*.
 ‘After such kindness, that would be
 A dismal thing to do!’

.....
 “‘I weep for you,’ the Walrus said;
 ‘I deeply *sympathize*.’
 With sobs and tears he sorted out
 Those of the largest size.

a little
 anesthetic

.....
 “‘O Oysters,’ said the Carpenter,
 ‘You’ve had a pleasant run!
 Shall we be trotting home again?’
 But answer came there none—”

Post-op.



