

And now I would ask—Is this type of case frequent in countries where the orthography is phonetic or at least follows clearly defined rules, or is it chiefly the result of a language such as English where sounds and letters are almost unrelated to each other?

58. Mr T. POMFRET KILNER, M.B., F.R.C.S. (London): *The provision of speech mechanism in cleft lip and palate cases: the surgical aspect.*

The time has passed when the surgeon interested in Cleft Palate surgery requires a torch and a tongue depressor to judge his or his colleagues' results. He is no longer seriously interested in the look of the repaired palate, but he is intensely interested in its function. Given a functional result he may with justifiable pride exhibit a good anatomical result: and it certainly proved encouraging to me when on one occasion a colleague was unable to find evidences of my repair operation and insisted that no cleft of the palate had ever been present.

It is impossible in the very short time at my disposal to enter into any detailed discussion of operative technique, and I propose therefore merely to indicate by diagrams the steps which I take in an average case to obtain a good functional result. I lay no claim to originality of technique: some fifteen years' experience of cleft palate surgery has indicated quite clearly to me that the man who writes up a new technique for cleft palate repair is merely relating his particular selection from a number of procedures, many of which, alone or in some other combination, were introduced many years previously. I have operated on a large number of cases myself, I have seen other surgeons' work and heard their speech results, and gradually I have accumulated a "bag of tricks" which, in my opinion, promises best to give the desired result.

What are the essentials for the development of good speech in cleft-palate cases? What is it that must be provided by the surgeon if he is to put the speech-trainers out of work? Palato-pharyngeal sphincteric control—provided at a time before the child has seriously tried out his faulty speech-mechanism and run the risk of developing all those tricks of speech (which we all know too well) to overcome his deficiency. Operation must therefore be early, and I usually operate at or about the first birthday. Palato-pharyngeal sphincteric control is, however, in many cases so difficult to achieve that it is unlikely that there will be any serious falling off of work for the speech-trainer.

The all-important muscles are the Levatores Palati and the Superior Constrictor of the pharynx and of the latter more especially the palato-pharyngeal sphincter fasciculus described in the *Journal of Anatomy* by WILLIS in 1930.

If a cleft palate consisted simply of a divided sphincter, then effort need only be directed towards efficient suturing of the cleft, and indeed until comparatively recent years all procedures had this as their main or only object.

It is obvious, however, that in the majority of cases the two parts of the palate could never together make a whole palate of normal proportions, and when one sees, in addition to this, an abnormally wide and deep naso-pharynx (Fig. 1), one realises immediately that the provision of palato-pharyngeal sphincteric control is not going to be easily achieved.

What steps then are to be taken?

One attempts to narrow the naso-pharynx in both diameters by the pharyngoplasty procedure of WARDILL. By this operation (Fig. 2) a reef is taken in the posterior half of the sphincter mechanism. The diagrams describe this better than words. A good result exhibits very considerable side-to-side narrowing with an exaggeration of the ridge of Passavant. The tonsils come to look more forward than the

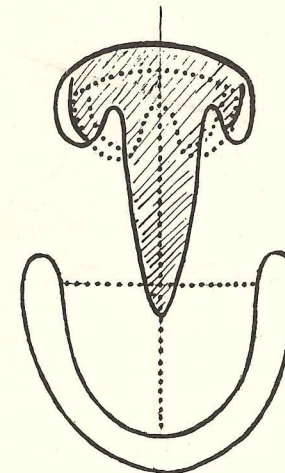


Fig. 1. The oro-nasal gap is too wide from side to side and from before back.

normal and the over-wide naso-pharynx frequently appears considerably over-corrected (Fig. 3).

This operation is a simple one, and since it can be performed in 7 minutes or so and as I am convinced from careful observation of WARDILL's own cases and a long series of my own that it definitely improves speech results, I do it as a routine as the first step in every cleft-palate closure.

In the palate itself everything is concentrated on the production of a long, supple, mobile soft palate placed well back in the pharynx in such a position that it, together with the shortened posterior half of the palato-pharyngeal sphincter, can occlude the oro-nasal isthmus. No single step should be taken which considers mere closure of the cleft at the expense of this desideratum.

The Tensor Palati muscles are concerned probably entirely in deglutition. They may be released from their pull around the hamular processes certainly without interfering adversely with speech and,

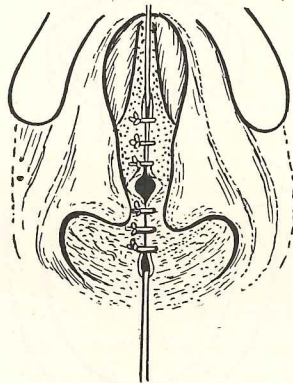
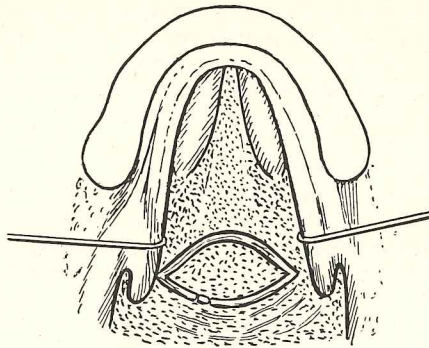


Fig. 2. From *The British Journal of Surgery*, xvi, 1928.

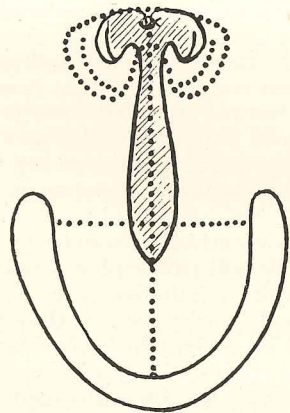


Fig. 3. Wardill's pharyngoplasty reduces both antero-posterior and lateral dimensions of oro-nasal gap. Uvular elements are approximated.

in my experience, with definite improvement in speech even in old cases. The hamular processes are palpated, small incisions are made over them and they are fractured and displaced inwards. The margins of the soft palate elements are pared (in preference to splitting) so that broad surfaces of muscle may be available for approximation. At this stage it is usually obvious that mere closure of the cleft in the soft palate region will be a relatively simple affair, for the edges can be brought together without any tension whatever.

But this is not the whole story, for a soft palate repaired in this way is sure to be found to lie too far forwards. Flaps are outlined on the hard palate elements after the manner of VEAU (Fig. 4).

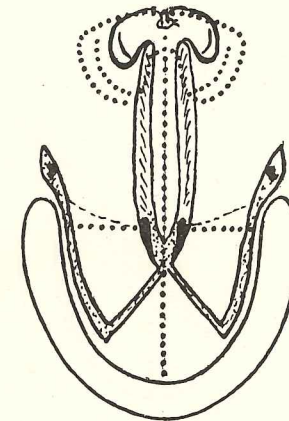


Fig. 4. Margins of soft palate cleft have been pared to expose muscle. Hamular processes have been fractured and Veau flaps cut and freed. Nasal mucosa has been freed from upper surfaces of palatal processes.

These are turned back (Fig. 5) and all the soft palate tissues are carefully separated submucously from their attachments to bone. This is done without cutting mucous membrane, the palatal process being, as it were, "filleted" out from the soft tissues on both under and upper surfaces. Especial attention is given to the separation of soft tissues in the region of the posterior nasal spine of the palatal process. The flaps thus become true "artery pedicle flaps", and if separation around the posterior palatine artery is carried out (the so-called lengthening of the artery spoken of by VEAU) the soft palate element plus its hard palate flap will be free to literally *hop* back into the pharynx. In some cases where the hard palate flap is short and its viability therefore certain, it is justifiable to divide the artery when still greater freeing is obtained. WARDILL is convinced that the artery itself often prevents this desirable retroposition of parts.

In the majority of cases material for complete closure of the nasal aspect of the cleft is available, for the nasal mucoperiosteum strips readily from the upper surfaces of the palatal processes and can be

approximated while, in unilateral clefts, much valuable material for this closure can be obtained from the Vomer. One or more sutures are passed through the edges of the nasal mucoperiosteum (*A*, Fig. 5) and their ends are held aside to be brought through the buccal flaps at a later stage. The nasal mucosal and mucoperiosteal edges are now approximated by catgut sutures so introduced that their knots lie in the nasal cavity (Fig. 5). The muscle and buccal mucosal edges of the soft palate elements are united by one or two end-on mattress sutures and a number of interrupted apposition sutures of finest silk-worm gut, while the mucoperiosteal flaps from the hard palate are rotated inwards and backwards and are approximated in their new position by similar sutures. The ends of the suture *A*, passed

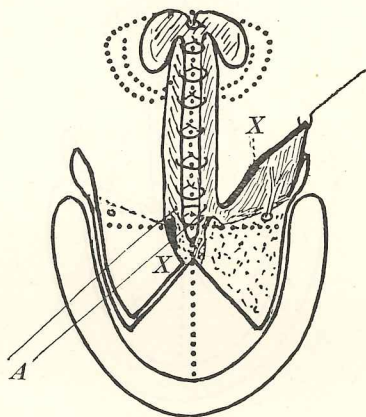


Fig. 5. The right Veau flap turned back to show clear access to posterior border of palatal process from which soft tissues have been separated without division of mucous membrane.

Sutures placed with knots on nasal surface for closure of nasal aspect of cleft.
Suture *A* will be passed through buccal flaps.

through the buccal flaps immediately before their edges are sutured together, are now tied. This suture is an important one, for it draws up the buccal flaps into apposition with the nasal flaps and so obliterates that dead space, always present in the older procedures, where blood accumulated and scar tissue formed in abundance.

It should be noted that the flaps employed are not the sliding flaps of the older operations, dragged together often under tension in spite of ample lateral relaxation incision, but are true rotation flaps and give the elongation desired by virtue of the well-known "V-Y" plastic principle (Fig. 6). Further, the raw surfaces which they leave are on bone and are rapidly epithelialized without the production of the hidden scar tissue and inevitable contraction of the LANGENBECK procedure.

When lateral separation on the side wall of the pharynx (the inner aspect of the internal pterygoid plate) advocated by ERNST of Berlin and packing of the spaces so formed at the end of the operation

are added to these procedures, one is left wondering whether the patient will ever be able to breathe through the nose again and the necessity for the traction stitch in the tongue, which completes the operation, is very apparent.

Simple tests for palato-pharyngeal sphincteric efficiency have been suggested by WARDILL. Many are available but only two need be mentioned.

Snorting. Tongue protruded slightly between teeth—air sucked into nose as in clearing away pharyngeal mucus.

Blowing exercises. Bubbles, candle, balloons, trumpets, etc.

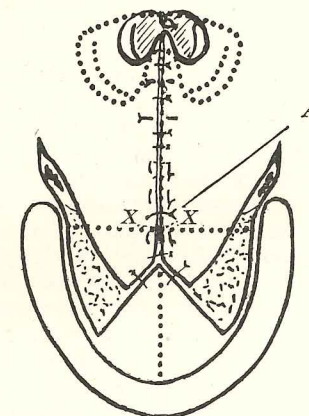


Fig. 6. The repair completed.

V-Y arrangement of flaps has transposed all tissues backwards. Note position of point *X* in this and in previous figure.

Suture *A* holds flaps up against nasal mucosa.

Gauze packing is inserted in the posterior parts of the lateral incisions where separation on the inner aspects of the internal pterygoid plates has been carried out.

Summary

Early provision of palato-pharyngeal control gives the best possible chance for the development of normal speech in cleft-palate cases. Successful results call for little, if any, expert speech-training.

59. ELENA GARNETTI (London): *The exercise of voice.*

Voice is exercised—whether for the practice of speech or for the practice of song—on the same physiological mechanism. The difference between the two phenomena lies in the degree of physical energy generated, that is, in the degree of vocal intensity.

The greater the bodily tensions the stronger the suctions induced. Exact correlation and co-ordination of these two physical factors determines the exercise of voice; for voice is a phenomenon excited through co-ordinate expression of somatic "energy" in relationship to the somatic skeletal "form".