OPERATIVE TECHNIC IN CIRCUMCISION OF THE TONSIL.

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Two and one-half years of experience with this operation has convinced the writer that the technic followed in its execution is of signal importance. That any operative procedure that has for its aim the disposal of the peritonsillar sinuses will meet with a fair degree of success is certain. With this in mind a more detailed description of the methods employed, than has been heretofore given, may be of help to those who have not attempted the operation, and who have not developed a technic of their own.

While the plica triangularis is as varied as the tonsil itself, the position is taken that in normal tonsils the plica has practically disappeared before birth and that the mucous glands of the faucial region rarely become infected when the plica has reduced to normal as has been shown in former communications.^{1, 2}

It is of the greatest importance that adequate drainage be established in the peritonsillar fossae as the indications are that this is the source of our peritonsillar and systemic infections. It is also important to establish drainage of the tonsillar crypts as is shown in figure 4, when the palatal muscles are free to compress the tonsil at its base during deglutition. Where there is a persistent plica neither the tonsillar crypts nor the peritonsillar spaces drain normally. (Fig. 5.)

Drawings in Figure 1. These drawings illustrate a condition which at a glance would appear as if there were no tonsil at all. The tonsil is undeveloped or is in a condition of advanced atrophy and is entirely hidden by the plica that has retained its embryonic state and covers the greater part of the fauces. The white line diagonally across the plica in *drawing B* represents the dividing line between that portion of the plica that is adherent to the faucial wall below and the unattached part above that encloses the deep anterior faucial sinus. The black lines in *C* running parallel with the anterior pillar indicates that part of the plica removed by the U punch. The white dotted line indicates the removed attached plica below the white line and the unattached part of the plica above, all of which is removed by the Hartman punch. *D* shows the operation completed. The anterior fossa is no longer a culture tube for pathogenic bacteria that may infect the peritonsillar glands

whose ducts open into this area. The lower portion of the plica that partly overlaps the tonsil is closely adherent to the faucial wall and to the lower border of the tonsil and covers no mucous ducts nor tonsillar crypts which makes its removal necessary.

Drawings in Figure 2. After the cotton-tipped probe has been dipped in a 10 per cent. cocaine and 1:1000 adrenalin solution it is

Fig. 1.

applied to the inner surface of the plica from the base of the tongue upwards covering the inner side of all the plica to be removed as in A. The cotton-tipped probe is then inserted in the supratonsillar fossa and the anterior fossa as in B, which is enclosed by the plica triangularis, and from this point the probe is carried down to the bottom of the anterior fossa. The cotton-tipped probe at the bottom

of the anterior fossa is in about the same position as it is in A, except that it is hidden by the plica. Usually there are no attachments in the supratonsillar fossa that require breaking down. The writer makes these applications to both sides of the plica every five minutes until from four to six applications have been made, when the field is ready for operation.

Fig. 2.

Starting with the U punch the writer thinks it is not usually necessary to remove much of the plica covering the supratonsillar fossa as that membrane rises when separated from its attachments, and sufficient drainage is established in that region. The incision by the U punch is carried forward and slightly downwards towards the anterior pillar as in C, and then to the bottom of the anterior

fossa as in D. It is then necessary to search with the blunt-hooked probe behind the anterior pillar to be sure no pockets or attachments remain.

Drawings in Figure 3. A represents the work of the U punch completed, the incision having been carried down parallel with the anterior pillar to the bottom of the anterior sinus. The anterior

FIG. 3.

fossa does not usually reach to the base of the tongue; therefore, the remaining portion of the plica between the incision and the tongue is removed by the Hartman punch as in B. The writer thinks it is not necessary to always remove the plica as far as the base of the tongue except where the anterior faucial sinus is deep. In practically all cases, that portion of the plica that is adherent to the lower

lobe of the tonsil is removed for about one-fourth inch below the bottom of the anterior fossa and also for the same distance posteriorly as in C. In C there is a triangular portion of the plica remaining on the tonsil inferiorly and above the base of the tongue that the writer does not always remove except when the lower lobe of the tonsil is considerably developed as in this illustration. That portion of the plica that is in evidence above the punch in C is unattached to the side of the tonsil and should be removed entirely regardless of how large it may happen to be. D shows the operation

Fig. 4. Horizontal section of superior constrictor muscle and normal tonsils as in deglutition showing pillars constricting base of tonsils, milking the crypts. (Schematic.)

Fig. 5. Horizontal section through superior constrictor muscle on line with center of tonsils, showing anterior pillars riding tonsils on account of persistent plicae. (Schematic.)

completed except that an application of a 25 per cent. tincture of iodine is now made to the field of operation.

When it is not possible for the patient to report to the office for subsequent treatment, a half-ounce of the freshly made tincture of iodine is prescribed and the patient taught to apply it once daily for a few days. The patient is advised that frequent efforts to swallow is beneficial. It is best to have the patient report for inspection in a few weeks and should any attachments have formed that interfere with the drainage of the anterior fossa they should be broken down. However, if the work is carefully performed

there is usually little annoyance with adhesions afterward. After a persistent plica has been removed the buried tonsil begins to present itself between the pillars which is particularly noticeable the first week or two following the operation. The plica having been removed the superior constrictor muscle meets with no resistance in its efforts to force the tonsil through the palatal arch and the tonsil that appeared to be small may now show itself to be of considerable size.

In the normal tonsil and in those where the circumcision operation has been properly carried out the tonsil should be easily forced between the pillars by the superior constrictor muscle when the patient retches or gags and during deglutition as in Figure 4.

When there is a persistent plica the anterior and superior fossae become culture beds for pathogenic bacteria which infect the mucous glands and the anterior pillars ride the tonsil in deglutition, preventing drainage of the crypts. (Fig. 5.)

As soon as the tonsil begins to function normally old epithelial plugs begin to work out from the deep crypts and occasionally cause a little annoyance to the patient until the mass has been forced through the mouth of the crypt. It is best to explain this to the patient that he nor his physician friends may not misinterpret this effort of the tonsil to function normally for a pathological condition.

Several laryngologists have written that they felt that no matter how successful this operation might be, the fact that the tonsil remained would furnish opportunity for unprincipalled physicians to discourage the patient and convince him that a proper operation had not been performed. The writer's experience has been that the physicians who do not operate on the tonsil and who are unbiased in their judgment are friendly to the operation and no difficulty is experienced in doing conscientious and thorough work for their patients. The physician who operates the tonsils of every patient who will permit him to do so regardless of the pathological conditions found is an enemy to this operation as he is invariably a menace to scientific medicine in general.

The writer has, upon the advice of Dr. Robert S. McCaughey, internist to the Park Hospital, enucleated the tonsils in every case when the improvement in the patient's systemic condition did not meet his expectations, after a thorough circumcision operation had previously been performed, and so far no improvement after tonsillectomy has been observed. It seems to me that this is the most reliable test to make in determining the efficiency of the operation.

The fact that bacteria of a virulent type may be found in the crypts of the tonsils after the circumcision operation, is no evidence that their toxins are entering the circulation or that the pathologic tonsil will not become normal, after proper drainage of the crypts has been established. While the writer has for more than two years been convinced that the peritonsillar theory of infection is correct, the technic of the operation has presented the usual difficulties.

The morphologic variations of the plica are so marked and the development or atrophy of the tonsil so diverse that the technic of each operation must vary to some extent. The tonsillar conditions presented in *Figures 1 and 5* in the communication "The Plica 'Triangularis' and its Morphologic Variations," appearing in the May, 1917, number of *THE LARYNGOSCOPE*, have been selected as the two best types to describe this operation because of the unreduced plica and the variation in the development of the tonsils.

1. MURPHY, F. G.: *N. Y. Med. Jour.*, 1917, V. cv., p. 785.
2. MURPHY, F. G.: *THE LARYNGOSCOPE*, May, 1917, p. 409.
The Park Hospital.

Changes in the Central Nervous System in Hypothyroidism.

F. W. MOTT, *Brit. Med. Jour.*, Feb. 24, 1917.

There is a universal chromatolytic change in the cells of the central nervous system, sparing no system or group of systems of neurons entirely. The changes had been especially noted in the smaller cells of the autonomic nuclei (vagus and glosso-pharyngeal, for example). The cells of the olivary body showed much less change and the Purkinje cells of the cerebellum less chromatolysis than the large motor cells of the medulla oblongata, spinal cord and Betz cells of the cortex, and there was no increase in neuroglia. The nervous symptoms in myxedema point to a condition of exhaustion of nervous energy, consequently, upon the assumption that the basophil substance of the nerve cell is the source of nervous energy we should expect the above findings, namely a marked chromatolysis as revealed in sections of the brain and spinal cord by a partial or complete disappearance of the Nissl granules throughout the central nervous system. The author corroborated these findings in seven cases.

Ed.