

hand, a middle-aged, or somewhat corpulent woman, with flabby heart and somewhat inelastic arteries. Suppose her to be the victim of some cancerous disease the knowledge of which has worn her out with anxiety and distress, and then let her pass a sleepless night before the operation, going over and over in imagination all the terrible process and making sure that she will die under the anesthetic. Or take your drunken, whisky-sodden dock-laborer, with tissues so steeped in drink that one is almost tempted to believe in the possibility of spontaneous combustion, with cirrhotic liver, fatty heart and albuminous urine. I can not see any parallel whatever between the healthy canine animal and the diseased human animal, nor can I see how experiment on the former will help us with the case of the latter. It is impossible.

Dr. Bodine recently reported two cases of chloroform anesthesia, both patients dying before a drop of chloroform had been administered; simply dying from fear or autosuggestion. The conditions in experimented animals and diseased human beings are widely different. Laboratory research should be continued, but we should accept conclusions with the greatest caution, and whenever bedside experience contradicts the laboratory researches we should follow the former, leaving the latter to take care of itself.

DR. W. W. TOMPKINS, Charleston, W. Va.—I would like to see emphasized that part of the address of Dr. Tyrode which speaks of preparations which should not be excluded merely because the kidneys were not doing their duty. There seems to be an impression among the profession that in Bright's disease particularly morphin should be excluded. My personal observation and experience is that morphin will give a certain degree of comfort. So in pneumonia we are told not to use morphin on account of the depressing effects on the heart. I think that all depends on the quantity that is used. Ordinarily, large quantities of morphin, particularly in pneumonia, are injurious; but, on the other hand, one of the most satisfactory means of whipping up a lagging heart is to use morphin in small quantities, such as a sixteenth to an eighth of a grain frequently repeated. Rheumatism is one of the most unsatisfactory diseases we have to deal with. How much effect the salicylates have on rheumatism I am unable to state; in some cases they seem to act like magic, and in other cases they are most disappointing.

DR. M. VEJUX-TYRODE—I agree with the one who said that conclusions should be drawn very carefully from scientific experiments, not only on this subject, but also in scientific experiments on all subjects. As regards the use of ether, its apparent action can be explained. In the first place, all irritating substances have a reflex stimulating action due to the irritation; thus the local application of ammonia, or acetic acid, or cold baths, momentarily increase circulation; but for a longer period of time it is impossible for them to act. Ether depresses the heart only when given in large quantities. There is never greater efficiency of the heart's action, but the vessels relaxed by ether enable you to feel a pulse more plainly, and you have an apparent stimulation which, however, is not real. In regard to experiments on animals and the value of these experiments, I think the criticism is a little too severe. You will find a certain reaction in animals from certain drugs. Of course, we must admit that this varies, but, as a rule, it is only a matter of degree; and, practically, that which stimulates the muscle of the heart does so not only in the dog but in all animals down to the frog. You may say that morphin produces sleep in the higher animal and excitement in the frog. This is explained very easily. There is a certain action of drugs whereby they act strongest on the best-developed functions. In the human being the brain is more highly developed than the spinal cord, therefore morphin brings about sleep, and the stimulating action on the cord is much less manifest because in the higher animal the brain controls the cord more powerfully. On the other hand, in the lower animal the action of morphin is more pronounced on the cord because there is little cerebrum to be acted on, and thus we get excitement instead of sleep. Still, the action of the drug is not changed; it is only a different manifestation in the different animals due to their degree of development. In drawing conclusions for use in disease we must take into consideration all these different actions on different organs. Dr. Robinson stated that when we have two sources of knowledge for the action of a drug, the purely clinical and the pharmacologic point of view, we

ought to choose the clinical one. I think that is a point which should be taken into profound consideration before drawing any conclusion, for clinicians have differed widely for ages and ages. A drug will be discarded for a long time and then brought into use again, but for an entirely different affection from that in which it was formerly used, and this shows that the clinical basis for action was not substantial. When sufficient experimentation has been done by reliable men, who all agree on the action of a drug, there should be no hesitancy in leaving the clinical basis and changing to the pharmacologic one.

REMOVAL OF THE FAUCIAL TONSIL;

SOME OBSERVATIONS AND A NEW METHOD OF OPERATION.*

CHARLES M. ROBERTSON, M.A., M.D.

Professor of Diseases of the Nose and Throat, Chicago Polyclinic.
CHICAGO.

In reviewing the literature¹ on diseases of the tonsils, it will be found that as early as 10 A. D. the medical men of that age recognized this structure as the seat of disease, for at that time the gland was operated on and completely extirpated. In the work of Celsus (10 A. D.) we find tonsillotomy spoken of as a common practice. It was accomplished either by dissecting with a bistoury or by the fingernail of the operator. Not until much later did the profession become aware of the dangers of the operation, which finally came to be considered dangerous from the fact that cases occurred in which death from hemorrhage followed. It was in the fifth century that medical writers first advocated a modified operation for the relief of enlarged glands in this region. Aëtius (490 A. D.) advised the removal of only that part of the gland which protruded beyond the pillars of the fauces. In 750 Paulus Aegineta advised grasping the gland with a tenaculum, drawing it well out of its position and "cutting it out by the root." He limited his operable cases, however, to those in which the tonsils were white and contracted, with a narrow base. He advised against operation on the inflamed tonsil. Albercasis (1120) had the same ideas, showing that the fear of hemorrhage had gained a firm foothold in the minds of medical men of his day.

After this period the operation became obsolete, and in the work of Paré (1509) mention is made of the performance of tracheotomy where there was serious enlargement of the tonsils. He also mentions ligature of the glands, but advised against excision. In 1540 it was suggested to loosen the gland around its edges and then tear it out by grasping it with a vulsellum forceps. As the operation was not easy, and dangerous, great care was enjoined. In 1637, Serverini, during an epidemic of tonsillitis at Naples, removed large portions of the gland, using caustics when they were sessile, a hook and a semi-circular knife when pediculated. In 1672 Dionis advised against operation in any form, as in his opinion the tonsil had a physiologic importance which should not be sacrificed. He did not believe in taking even a small piece away. Many surgeons wrote adversely to the operation. Among these was Heister (1683), who said: "The operation is not only too severe and cruel, but also too difficult in its performance to come into the practice of moderns because of the obscure situation of the tonsils."

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. George L. Richards, O. Joachim and G. V. Woollen.

1. The historic part of this paper was taken from Mackenzie's "Diseases of the Throat and Nose," and the anatomic part from Watson Williams' "Diseases of the Upper Respiratory Tract."

After 1740 the operation with tenaculum and bistoury was again commonly practiced. It was brought again into practice by Meseati and Wiseman. Wiseman first ligated the gland and then cut away the projecting portion. In 1757 Caqué commenced excision again at the Hotel Dieu of Rheims, and proved that the great dread of hemorrhage was unfounded: From this time on the operation became one of the recognized treatments, and instruments began to be improved on and new methods adopted for its performance. The first one to use scissors was Louis, in 1774. He used both straight and curved blades, and at times still resorted to a probe-pointed bistoury. He never cut away more than the inner half of the gland, or that part that projected into the pharynx. In 1827 Physick of Philadelphia caused to be produced the first tonsillotome, which was modeled much after the style of the present Mackenzie. Five years later the first Fahnstock came into use in Germany and France, and was the first ring knife cutting from behind forward. It was practically the Mathieu of to-day. Hundreds of styles are in vogue to-day, till the surgeon has enough to satisfy almost any fancy.

From this early history to the present time we see there have been all sorts of opinions as to the proper method of treatment of this condition, and even to-day there are those who believe the gland should be left discreetly alone.

Historically, we are not much farther advanced than was Celsus at the commencement of the Christian era, and most of us believe, as did he, that diseased glands should be completely extirpated. Surgeons are becoming more impressed with the thought that when necessity demands surgical interference with this gland it should be removed in its entirety. This conclusion has been arrived at after observations made on tonsils which have been partially removed by the tonsillotome. I have observed that, aside from the mechanical obstruction produced, the inner half of the gland is not so detrimental to the health of the patient as the part left *in situ* by the tonsillotome.

In order to bring this subject to your notice in the proper light, it should be stated that tonsils which are diseased may be divided into two classes. First, those which, by their enlarged size, produce mechanical obstruction, thus causing imperfect access both to the stomach for food and to the lungs for air, termed obstructive. And, second, those which do not protrude into the pharynx, or small tonsils, which are diseased and produce injurious effects on the surrounding tissues, or where there occur crypts which constantly fill with secretion, causing foci of infection, called non-obstructive.

In the first instance, a mere reduction of the size of the gland might suffice, whether this be accomplished by excision or the shrinking of the gland. This condition may be relieved by the use of the tonsillotome, and, in the opinion of the writer, is about the only place where the use of this instrument is permissible. With this instrument we are able to remove about two-fifths or one-half of that part of the gland which projects into the pharynx, giving as much room as would be indicated by the inner edge of the palatal arches, it being impossible to get much beyond this. Splitting the tonsil, puncturing it with acids, the use of the galvano-cautery point, or the use of gargles or pigments are of little or no benefit, but all have their devotees, and many think they obtain satisfactory results by the use of such methods. For this we care little at the present time, it being our object to deal with those cases which come under

the second class, namely, those tonsils which it is impossible to remove with the tonsillotome, even in part, which constantly fill with secretion in the diseased crypts, and form foci of infection. To this class belong nearly all of the cases brought to the notice of the surgeon. The patient has a history of attacks of tonsillitis, perhaps peritonsillar abscess or "quinsy," and in some cases beginning phthisis. It has been demonstrated beyond question that this gland, when diseased, is a means of infection; it is now classed along with the other infective tracts, the intestinal, respiratory and genito-urinary. It is not hard to believe that these lymphatics are active in the production of disease, if you but observe the great quantities of putrid material squeezed out of a tonsil in the process of extirpation, as it is a decomposing mass, and its retention in the tonsil and surrounding parts permits of its absorption by the system. The part of the gland most productive of this process is found in the supratonsillar fossa. Just at this point let me call your attention to the formation of this gland with its anatomic relations. With the appearance of the horizontal fissures in the lateral foregut there appear the formation of five arches with intervening clefts. From the first arch or plate the lower jaw develops. From the second arch the anterior pillar of the fauces and a portion of the hyoid bone. From the third arch the posterior pillar of the fauces, and the cleft between the second and third forms the fossa of Rosenmüller above and the sinus tonsillaris below. The palate is formed by the ingrowth of the palatal plates from the upper jaw which meet in the median line. These plates extend backward and cross the second and third visceral arches and the intervening cleft, dividing the fetal pharynx into an upper and a lower series of parts.

In the upper part the eustachian tube is developed from the cleft between the first and second arches. Behind it is Rosenmüller's fossa, corresponding to the cleft below the soft palate, which is known as the sinus tonsillaris, in which the tonsil develops, the unoccupied portion of the cleft above the tonsil being the supratonsillar fossa. The faucial tonsil arises by an invagination of the hypoblast in the sinus tonsillaris. The diverticulum thus formed subdivides, forming the crypts around which lymphoid tissue develops. Some authors state that there are often two tonsils formed, but this can easily be understood as being only one tonsil when we reflect that in the formation of the tonsil irregular folding of this diverticulum may occur with the subsequent development, or not, of lymphoid tissue in any particular part. It is thus that the different forms of tonsils occur, and although there may apparently be more than one tonsil, it is one structure which may be subdivided irregularly.

In early fetal life the anterior pillar widens and extends backward, covering the cleft in which the tonsil develops. In this way the tonsil may be more or less completely covered by the thin free border of the anterior pillar, which membrane is known as the plica triangularis or tonsillaris, mentioned further on in this paper. The supratonsillar fossa may extend downward on the outer side of the tonsil between it and the superior constrictor muscle of the pharynx, and also upward and backward into the soft palate. This condition can also be produced by pathologic causes. The supratonsillar fossa appears to be the most important part of the anatomy of these parts from the fact that the uppermost crypts of the tonsils empty into it and because the orifice of com-

munication with the pharynx is often imperfect, owing to the presence of the plica tonsillaris or a hypertrophied condition of the upper part of the tonsil.

The pocket thus formed by the extension of the supratonsillar fossa becomes the receptacle for micro-organisms and the accumulation of decomposing caseous material extruded from the upper tonsillar crypts. The plica tonsillaris is at times very marked, and we can recall cases where a tonsil was almost hidden from view by this membranous fold. A case comes to mind where only a small portion of the superior part of the tonsil was in view through a small round opening six mm. in diameter in the plica tonsillaris. Conditions similar to this are not uncommon. This will easily be understood to close the opening between the supratonsillar fossa and the pharynx and we can readily understand how accumulations in this fossa may be kept penned up, as it were, in a sac. In nearly all these cases we can pass a probe up over the gland into a pocket which varies in size and depth, and at times passes down and around the external surface of the gland. The crypts which empty into this fossa are often pressed on, and if there be a slight amount of inflammation of the pillars, the cavity may be closed off, giving rise to a condition where it is difficult for the secretions to escape into the pharynx. When this exists the imprisoned secretion undergoes decomposition, and an auto-infection occurs. The secretion thus accumulating begins to burrow and gives rise to a condition where the tonsil becomes surrounded with cheesy material, as was described by Pyncheon in his article on the "submerged tonsil." I have never seen a case where an operation for removal had been done with the use of the tonsillotome that this top of the tonsil could not be demonstrated. The crypts that empty into the throat are not so apt to fill or stay filled with this secretion as they are squeezed by the pressure made on the tonsil in the act of swallowing by the pharyngeal muscles. For this same reason there is a tendency to form larger pockets behind the tonsil by pressing the secretion toward the point of least resistance. Thus it is common to find cavities extending up into the soft palate and down behind the gland as far as the larynx.

After the formation of such a pocket, even though the supratonsillar fossa becomes communicative with the pharynx again, it is found that there is a habit of secretion becoming lodged here, giving rise to symptoms such as localized tonsillitis, peritonsillar abscess or rheumatism. Owing to the above fact, I have been in the habit of teaching students that if any part of the gland must be left in the throat let it not be the upper portion. In other words, clean out the supratonsillar fossa at all events, for the lower part is of vastly less importance, although we should take that portion also. It makes no difference how small the gland is if it be diseased, for if this perverted secretion is present it should be removed. This secretion has never been studied enough to determine its consistence, but I am wont to believe it is of a cholesteomatous nature.

I have been astonished in finding so many specialists who still adhere to the belief that a diseased tonsil does no harm. I can not understand why it does no harm if we can demonstrate the material it continues to manufacture contains decomposing and septic material and we are able to demonstrate the presence in this secretion of virulent bacilli. I do not wish to be understood as advocating the removal of all tonsils, but that these diseased ones should receive the strictest kind of surgical treatment. It is almost impossible to contend with cases

of pharyngitis, tonsillitis, laryngitis and non-suppurative otitis media, unless we get rid of such diseased conditions. This is particularly true of the last-named disease. From the foregoing it is attempted to show that it is not the size of the glands that interests us most, but its character. Thus we may have very large hypertrophies causing little or no trouble, whereas, on the other hand, very small insignificant ones are productive of the direst results.

With these facts in mind it devolves on us to find the best means for the removal of this diseased tissue and the destruction of the pockets already formed. It matters little just how the tonsil is removed, and probably each one of you have a method which is efficacious. Personally, I was in no way satisfied with the means at hand, and have endeavored to perfect an operation at once easy of mode and complete in result. Before describing my own method, however, I should like to state some of the objections I have observed to the means commonly in use:

1. *The Tonsillotome.*—This is figured in the great majority of text-books as *the* way. It seems to me it should no longer be classed as an instrument for complete removal of tonsils, as this is an impossible feat with its use. The only place where its use is permissible is in very young children where the tonsils are so large as to encroach on the process of breathing and swallowing. Even in this case it does the work in a very poor way. It is a compromise and should no longer be tolerated by specialists. The cases of dangerous hemorrhage written about are often after the use of the tonsillotome and occur from the division of a small arterial branch, which on account of its being embedded in fibrous tissue can not retract. The contents of the supratonsillar fossa can never be removed with this instrument, as has been repeatedly shown by clinical demonstrations. It is of no value in small tonsils or those which are long and flat. It, therefore, should be discarded as an instrument for tonsillotomy.

2. *The Snare.*—This method is a good one, but is too slow. The entire gland must be loosened from its attachments above, below, in front and behind, before the instrument can be applied. The hemorrhage may not be so great as by the cutting methods, but cases have come to my knowledge where very severe bleeding occurred. It is a good method where the use of general anesthesia is indicated and especially in children under narcosis.

3. *The Galvano-Cautery.*—Several methods of this type of operative procedure are in use. The method as practiced by Pyncheon gives fine results save that it leaves a large cicatricial space on each side of the pharynx. The main objection to this method is the loss of one-half of the anterior pillar and the long period of suffering after each cauterization, and the danger following of middle ear inflammation. As done by its author, one-half of the tonsil is burned out. After this is healed the remaining half is burned away. Then the other tonsil is attacked in a similar way. Each burning leaves the patient with a sore throat for ten days. In this way he must be laid up for forty days for the complete operation, which is an objectionable point, and few patients willingly submit to it. It is not practical at all in children, as each burning occupies from fifteen to twenty-five minutes, and children will not stand this length of performance. Strong solutions of cocain are used, and many people are easily poisoned with this drug.

4. *Dissection*.—This is a tedious operation, requires a good patient and is liable to leave a haggled surface. It is hard to avoid cutting the pillars, and when the tonsil extends well up into the soft palate, as it often does for 2 cm., it becomes difficult. Bleeding is very troublesome, and this makes a clean, smooth wound very hard to accomplish. Hemorrhage is very liable to be severe.

5. *Scissors*.—After trying all the other methods, I have come more and more to depend on the scissors method, and the more I see of them the more confirmed do I become that this method is the best for dealing with hypertrophied and diseased tonsils. After loosening the anterior pillar with a curved bistoury, the scissors are fitted into place, and with two or three snips the tonsil is removed.

After its removal the supratonsillar fossa is explored for fragments, and if any are found it is easy to cut them away. Flat tonsils which extend down to the base of the tongue are as easily removed as little ones. After the tonsil is removed, if any pockets exist they can be cut out in the same manner. The scissors I prefer is one devised by myself and has the following points of advantage: (1) It has blades that can be thrown wide apart with the least possible motion of the handles; (2) as the handles do not have to be widely separated, one is able to operate in a mouth where the teeth can not be thrown wide apart; (3) the curve of the blades is sufficient to avoid the danger of cutting the epiglottis; (4) they are bent on their long axis so that when in position they fit between the pillars of the fauces; (5) they are strong enough to cut through the toughest fibrous tonsil. The instrument used to separate the pillar is a double-edged bistoury curved on the flat and with a dull point. By having it double-edged it may be used to cut up or down and for either tonsil. In its removal the tonsil is grasped by a strong fixation forceps by which the gland is drawn inward. The left tonsil is removed with the scissors held in the right hand, and the right with the scissors in the left hand. It is unnecessary to resort to the use of a mouth gag or tongue depressor. There is little pain after the pillar is loosened and the hemorrhage is not greater than with the use of the tonsillotome. The wound is clean and smooth, and is healed in from four to seven days. The pillars do not attach to each other, and after the surfaces are healed it would be hard to tell that an operation had been done, as very little cicatricial tissue is formed.

After a year's observation, both in clinical and private cases, I am satisfied that this operation is a happy solution of complete excision. In several instances in removing fibrous tonsils I have seen brisk bleeding which in each case was caused by the cutting of a small arterial branch embedded in the fibrous tissue. In these cases I grasp the bleeding vessel with the surrounding tissue and excise it till I find I am into the connective tissue surrounding the tonsil. As soon as this is accomplished the vessel has a chance to retract and the bleeding ceases. I have never had to resort to unnatural means as yet for controlling hemorrhage and have not thus far experienced secondary hemorrhage. Young patients, as well as older ones, are operated on with ease, and it seems to the author that there is nothing wanting to make the operation both generally adopted and useful.

100 State Street.

DISCUSSION.

DR. FRANK W. HILSCHER, Spokane—I have been doing a similar operation for about three years, and I am in accord with everything Dr. Robertson said this morning, especially

that regarding the removal of those tonsils which ordinarily are not removed. They are diseased tissue and are very frequently the cause of trouble where one would not think they would be large enough to do any danger. Those pockets harbor all kinds of germs, and unless you can get rid of them entirely you have not done for your patient all that you should. I use the scissors usually for the whole operation. I have a certain kind of scissors with which I can remove both tonsils with the right hand.

DR. S. G. MINER, Detroit—I certainly think that the scissors operation must be performed in a very limited number of cases. The great objection to it is its severity; in private practice the pain and discomfort given the patient is unnecessary except in the diseased submerged variety. I think if more care were taken in freeing the tonsil from all adhesions better results would follow. If that were done in every case the scissors operation would be unnecessary. If we can remove the tonsils with the tonsillotome, it is certainly preferable.

DR. J. F. BARNHILL, Indianapolis—Dr. Robertson's demonstration shows that there are imbedded tonsils that can be well and certainly removed by his method. I have no doubt that if some of us who are less skilled in the use of scissors were to try the operation we would meet some difficulty. I prefer the use of the snare in such cases as Dr. Robertson operated on this morning, first loosening the pillars from the tonsils just as Dr. Robertson did before using his scissors. I think that with the snare method the operator can remove the tonsils much quicker than did the Doctor with his scissors, rapidly though he worked. For a child, I very much prefer the tonsillotome to any other instrument. At this age the gland is soft, not often adherent to the pillars of the fauces, and removal can be accomplished in a very few seconds. This being the case, why should we subject the child to an operation which is longer and more painful?

DR. E. FLETCHER INGALLS, Chicago—In the majority of cases that I see, the pillars of the fauces are adherent to the tonsils, and when this is the case I am not able to remove them satisfactorily with the tonsillotome. In adults I use the tonsillotome almost invariably; in children I seldom use it. In children and in adults when the anterior pillar of the fauces is adherent to the tonsil I separate them with the blunt hook and with my finger, and then, with my finger when practicable, dissect the tonsil loose from its bed. It may then be seized with the forceps and removed with the cold snare. In this way there is practically no hemorrhage in the great majority of cases, excepting the little that comes from separating the anterior pillar. I formerly thought there would never be bleeding of any amount, for in hundreds of operations I had not seen it; but one day when operating on a child a vessel a millimeter and a half in diameter bled profusely, but as the patient was under a general anesthetic I had little difficulty in catching the vessel with a hemostat and tying it. In more than 50 per cent. of all cases of hypertrophy of the tonsils in children there is an enlargement at the same time of Luschka's tonsil. If we remove the faucial tonsils but leave a large Luschka's tonsil we have not done our duty. In about 20 per cent. of the cases of adenoids there is also atresia of the posterior nares which should be cured at the same time. Owing to these conditions I place the patient prone with the face drawn over the side of the table and first remove the right tonsil, and then turn the patient to the other side and remove the left tonsil, and with the patient in this latter position I remove Luschka's tonsil. If an operation is done at all it should be done well.

DR. ROBERT C. MYLES, New York—It would seem that an operation like tonsillotomy should have been more or less perfected before now, but my opinion is that it is in its infancy. For several years I have been experimenting with the tonsils. I have employed the scissors, the guillotine, the snare, and the various forms of tonsil punches, and the operations have been done with and without anesthesia. It seems to me extremely odd that we should think so differently concerning the tonsils. I have never seen a tonsil adherent to the anterior pillars. In the dead room I have taken specimens and given them to the

pathologists and they could not find adhesions. The part some physicians call the pillar is the opercular fold and is a half an inch from the pillar. This fold of mucous membrane touches the pillar only at the upper part. We should determine how much tonsil tissue one is entitled to; we do not know how many cubic millimeters of tonsil tissue should be considered the normal amount. If one examines carefully he will find that tonsil tissue in many cases extends outward into the neck for some distance. In children, on whom guillotine operations on the tonsils have been performed, I often find large masses that should be removed. In the cases in which there is bleeding and vomiting, in a woman, for instance, who is delicate and nervous, the punch forceps is at times preferable.

DR. H. W. LOEB, St. Louis—In the beginning of my practice I feared and looked for adhesions. I have not found much reason, as Dr. Myles states, to fear adhesions. My trouble is not with the adhesions to the pillars or to the plica tonsillaris but with lateral attachments. When the tonsils extend downward and are attached to the lateral wall of the pharynx you may have considerable trouble. My own methods, of course, have been various. In the more favorable cases, with the electrocautery snare you can get out all the tonsil that projects, and with the cold snare, of course, the same thing could be done. The appearance of the cut surface of the tonsil when the knife operation is used and the rounded appearance when the snare is used, in many cases demonstrates the value of the snare operation in completely removing the diseased tonsillar tissue.

DR. GEORGE L. RICHARDS, Fall River, Mass.—The ordinary Schleich anesthetic tablet dissolved in water and injected into the tonsil will secure an anesthesia that will materially help in operations without general anesthesia. It is of especial value in the snare operation. Dissolved in an adrenalin solution it gives beautiful results in preventing loss of blood. In only one case have I had hemorrhage after this method. I dissolve the tablet in thirty minims of 1 to 6,000 to 1 to 10,000 adrenalin solution.

DR. CHARLES M. ROBERTSON, Chicago—We must remember that this is an operation for the removal of the tonsils rather than an operation for the avoidance of pain. The operation is not any more painful than a tonsillotomy ordinarily is. It is not any more painful than the snare operation. It is also not so much a question whether we can get the tonsil out quickly or slowly but rather whether we get it all out. As to the danger of this operation, it seems to me to compare well with other operations. Dr. Ingals says that he never uses the tonsillotome in children but invariably does in adults, and that he never finds adhesions in adults, but does in children. The reverse would seem to me better. In the hysterical man I operated on this morning the adhesions were tough, true adhesions and difficult to cut. In Chicago I have seen many such cases. Of course, what I have called adhesions may be the plica tonsillaris, but there are adhesions there nevertheless. One can use any kind of general anesthesia preferred. The hen-egg tonsils spoken of by Dr. Myles are exactly the ones we are after, and the ones I particularly use my scissors for. The possibility of doing damage to the blood vessels has been suggested. One can go just as far as one needs to get out the tonsillar tissue and no further. After one gets out all the tonsillar tissue one can see the connective tissue. As to the snare, Dr. Loeb's remarks correspond with what I said in my paper. It is a good method, especially in children under general anesthesia. The objection is that you have to loosen up the tonsil too much to adjust the snare. The tonsil often extends up into the soft palate, and you can pull them well down within the grasp of the scissors. These cases make the most beautiful ones for the use of the scissors. The hemorrhage the Doctor spoke of was not a secondary hemorrhage. Secondary hemorrhage comes on later from the sloughing of a vessel. What he mentioned was a late primary hemorrhage. I do not object to the use of the tonsillotome, but it is an imperfect method of operating.

To properly diagnose a given case is the *sine qua non*.—*Pennsylvania Medical Journal*.

ARTIFICIAL DILATATION OF THE CERVIX UTERI WITH A NEW INSTRUMENT.

FRANK A. HIGGINS, M.D.

Instructor in Obstetrics, Harvard University Medical School.

BOSTON.

Artificial dilatation of the cervix uteri during labor is a well-recognized obstetric expedient, which is not only of great value in certain cases as a means of accelerating tedious labor, but also becomes an absolutely necessary method of procedure in many instances where the life of the mother or of the child may be dependent on prompt delivery.

The problem of the safe and efficient mechanical dilatation of the rigid cervix of the pregnant uterus is an interesting one which has not as yet been entirely and satisfactorily solved, although there are many methods and a considerable number of instruments devised for the purpose. Under the head of mechanical dilatation of the cervix the writer would include all forms of artificial dilatation whether performed by the hand, by dilatation bags, or by instruments.

Bougies and gauze introduced into the uterus, the latter device being known as tamponade of the cervix, should in no respect be regarded as dilators of the cervix, although frequently so considered. These are merely stimulants of uterine contractions in the absence of labor pains.

Manual dilatation, both complete and partial, has doubtless been performed many times by nearly every practitioner of general medicine, and in many cases with the greatest satisfaction with respect to results. In the writer's experience, it has proved of the greatest value as a means of partial dilatation of the rigid cervix in the presence of the tedious and exhausting but inefficient pains of the first stage. For this condition it is best done under primary anesthesia, all that is necessary being accomplished during one or two uterine contractions. The uterine contractions are thereby inhibited for only a few minutes, but the patient is often thus enabled to secure a short period of rest or sleep, which is of material aid to her in completing the labor. The writer has used this expedient a great many times, and has found it much more satisfactory and efficient than the administration of chloral, which is now rarely used. If carefully done, the method will seldom give rise to cervical lacerations.

If the membranes are unruptured, one effort of dilatation under primary anesthesia has always been sufficient in my cases. With ruptured membranes, however, and a rigid cervix, partial manual dilatation finds its greatest value for tedious labor. With a small os, a rigid cervix, ruptured membranes, and the patient becoming worn out from inefficient pains, intermittent manual dilatation, if I may be allowed the use of this term, is better and safer than complete manual dilatation performed at one sitting. That is, partial manual dilatation may be repeated several times, with an interval of an hour or more between, with perfect safety in a dry first stage where the patient is apparently making no progress herself. The intermittent manual dilatation is much safer for the integrity of the cervix than is uninterrupted complete dilatation, and the repeated primary anesthesia at this time amounts to no more than does the giving of ether with single pains in the second stage.

It may sometimes seem that there is no appreciable progress on the part of the patient in the intervals between the dilatations, even with severe pains, and yet