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FORCEPS VERSION AND CRANIOTOMY.*

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Within the limited time at my disposal this evening, it will be possible for me to do little more than call your attention to a few of the more important points with reference to these three obstetrical operations. Realizing, however, that successful work depends very often upon the strict observance of apparently small details, it is my purpose to emphasize certain features of the operative work.

Forceps. There can be little doubt that the forceps operation has saved more lives than any other. The operation is performed to-day more frequently than ever before, and we can assert, I think, without fear of contradiction, that better results are being obtained, not only as regards mortality, but morbidity as well. These results have naturally followed increased experience, by which we have learned to imitate as far as possible natural delivery, the latter involving slow careful extraction with due regard to the soft parts of the mother, and strict observance of the details of surgical cleanliness.

Indications for and Classification of Operations. In general one may state that when the head is at or below the brim of the pelvis, in the absence of pelvic deformity or compli-

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cation, such as prolapse of the cord or placenta prævia, and when the natural forces are insufficient to effect delivery or where for any reason the life of the mother or child is threatened, the forceps is indicated. Forceps operations are classified as high, median or low. In the high forceps operation the blades are applied to the head lying above the brim, in the median operation the head has engaged in the brim of the pelvis, while in the low forceps operation the head has entered the pelvic cavity.

The High Forceps Operation. This may be said to be a strong rival of podalic version. The question of supremacy will probably never be decided, for there can be no fixed rule for choice between the two operations. The operator must be guided in each instance by the relative size of the head as compared to the pelvis, the quantity of amniotic fluid, the protraction of the labor and lastly, by his personal experience. With normal pelvic and fœtal head measurements, and especially when the head is relatively large, or when labor has been protracted with early escape of the amniotic fluid, it is my belief that the high forceps operation is much to be preferred. With careful use of the forceps the head can be moulded through the pelvis, whereas in version no time for moulding is allowed. The patient is prepared for operation in the usual way: the bladder and rectum are emptied, and ether or chloroform is used. The membranes are ruptured, the position of the head is definitely made out, and after the cervix has been fully dilated with the hand, the operator is ready to extract. Complete dilation of the cervix is essential, for if strong traction is made through a partially dilated cervix, not only is there great danger of rupture of the uterus. but the child suffers also by reason of the tremendous pressure. The ordinary long forceps may be used and will in the majority of cases be sufficient to complete delivery. The axis traction forceps of Tarnier is, however, of the greatest practical value in this operation, and while one can, as a rule, safely deliver without it, in many cases the instrument is a necessity, and extraction is completed with greater safety to mother and child as well as with greater ease to the operator. Traction is made intermittently, slowly and carefully, plenty of time being allowed for moulding. Too great emphasis cannot be laid on the importance of traction in the proper axis. Many children are lost each year through the failure to

recognize this most important point. Again, it must be remembered, that when the forceps blades slip, the head must be seized in a different diameter or traction made in a different axis, and, the blades continuing to slip, another variety of forceps must be used, or the operation of version resorted to. Slipping of the forceps frequently results from traction in an improper axis, or from a faulty application of the blades.

The high forceps operation is to be undertaken with a full knowledge of its dangers, for I know of no other operation which may prove so difficult, and which may be attended with greater danger to mother and child.

The Median Forceps Operation differs from the former in that it is usually easier of accomplishment, the vertex being well engaged in the pelvic brim. The various points already referred to in speaking of the high forceps operation apply equally here.

The Low Forceps Operation is by far the most frequently used, and as a rule it is the easiest of all. The indications are practically the same as for the other forms of operation and the danger in a properly conducted operation is practically nil.

The question often arises: "how long shall we wait in the second stage of labor before applying forceps?" My rule in normal labors is to use forceps if after one, or one and a half hours there has been little or no advance. If the patient is evidently exhausted, one hour is, in my opinion, a sufficiently long time to wait. If the labor has been short, and the patient is in good condition one and a half hours would be ample time to allow. In cases of dry labor, especially in primiparæ, as a rule I apply forceps, if after one half hour in the second stage there has been no advance. With regard to the variety of forceps to be used, there can be no question as to the superiority of the Tucker modification of the McLane forceps. The solid blades are more easily introduced, applied, rotated, removed and mark the child less than any other instrument. At the same time they do not slip in the vast majority of cases. No single instrument is perfect for all cases, but from personal experience I have found the solid bladed forceps to be the most valuable. In my teaching at the New York Post-Graduate Medical School I have met a number of men who have considered the forceps operation as

practically an accomplished fact, after they have succeeded in merely applying the blades to the sides of the child's head. There can be no greater fallacy than this, for with the proper application of the forceps the work in many instances has but just begun. The old method of extracting a head by means of several violent tractions has been fortunately succeeded by the slow, careful, deliberate effort to remove the head from the soft parts as nearly as possible in the way in which nature would accomplish the same result. The low forceps operation when properly done is practically devoid of danger to both mother and child, and the patient is saved many an hour, perhaps, of needless suffering. The old excuse that "the perineum was torn because the forceps was used" is no longer tenable. On the contrary, there are many cases where by the early and intelligent use of forceps laceration of the perineum is certainly avoided. Where œdema of the soft parts is marked and the child must be quickly extracted in order to save its life, blame must not be attached to the forceps operation because laceration under such circumstances is almost unavoidable. In cases where the head is large, and the outlet small, or where delivery must be accomplished quickly, the operation of episiotomy has a distinct sphere of usefulness, and I have employed it in a number of cases with excellent results.

Rotation with Forceps in Occipito Posterior Positions. In October, 1900, the writer presented a paper before the New York Obstetrical Society on the treatment of occipito posterior positions. At that time, no text-book recommended the operation of forceps rotation, and, in fact, many condemned its use outright. A number of the gentlemen present at the meeting had, however, been in the habit of performing the operation, and since that time the practice of rotation with the forceps has become more and more universal, and the text-books have devoted considerable space to the description of the operation. Although it would be impossible to enter into the details of the operation at the present time, the writer wishes again to call attention to and emphasize the entire feasibility and great practical importance of the operation, which after extensive use is becoming more and more a recognized procedure in the treatment of these cases.

Version: Definition and Varieties. Version may be defined as the turning of the fœtus in utero in such a manner as to bring about a change in presentation. While version often occurs naturally, constituting what is known as spontaneous version, it is with the manipulative or operative form that we are especially interested. Version may be complete, as for example, when the head is substituted for the breech, or partial, when, for instance, the presentation is changed from face to vertex. Again, version may be classified as cephalic, pelvic or podalic, depending upon the particular part of the fœtus which is brought over or into the internal os. Again, version may be performed in three different ways, the terms external, internal and combined, conveying in a certain way some idea of the manner by which turning is accomplished. Thus in external version, manipulation is entirely external, in internal version the entire hand is passed into the uterus, while with the other hand the effort is made to facilitate version by manipulation through the abdominal walls. In combined version, merely two fingers of one hand are introduced into the cervix, version being assisted by the other hand, used externally.

Cephalic Version. The indications for this operation are mal-presentations such as face, brow, shoulder and transverse, and the operation may be performed for breech presentations as well. The operation may be performed by any one of the three methods, external, internal or combined. Let us consider for a moment the operation known as "external cephalic version." To succeed in turning the child by external manipulation alone, a number of favorable conditions must be present. The abdominal and uterine walls must be relaxed, the amount of amniotic fluid present must be sufficient to allow of a moderate degree of motion on the part of the fœtus, but hydramnios would of course make turning impossible.

It will be apparent to all that the operation can be successful, as a rule, only when undertaken prior to or during the early part of labor, before the amniotic fluid has escaped, and while the intervals between uterine contractions are comparatively long. Again, one must have had a sufficient experience in ante-partum diagnosis to recognize the position in which the child is lying. The patient, after emptying the bladder, is placed upon a table or firm mattress, her limbs are drawn up, and the confidence of the woman is gained by assuring her that she will suffer no pain or discomfort. For brow or face pres-

entation the operator will follow the technique of the Schatz method, well described in all of our text-books; and therefore unnecessary to repeat here. For oblique or transverse positions the head is to be slowly and carefully moved downward to a point over the pelvic brim. This procedure is to be done very gently in the easiest and most natural way, endeavoring to preserve, as far as possible, the natural flexion of the head.

Cephalic Version for Breech Presentation. We find that the fœtal mortality in all cases of breech presentation is about 10 per cent. If we were to add to the number of infants who are still born the number of those who die within a few hours of birth from asphyxiation, atelectasis, etc., the percentage will be much greater. The figures are naturally larger in primiparæ than in multiparæ. Therefore, as the fœtal death rate is much higher than in vertex presentations an effort should be made to correct, if possible, the faulty presentation. No harm can result if the attempt fails, whereas, if the effort to turn is successful, a great advantage has been secured. Within the last few weeks I was called to see a patient, who was thought to be in labor at full term with her sixth child. One month previous to this time I had tried to change a breech presentation into one of the vertex. As the presentation was still breech I again tried to turn, and version was accomplished with surprising ease, much to the gratification of the patient and myself. Pads were placed at either side of the uterus and an abdominal binder applied for the night, but as the patient felt very uncomfortable with the binder on, it was removed on the following day. Although labor did not begin until one week later, the presentation remained vertex and delivery was uneventful. By careful manipulation the head is gently moved toward the pelvic brim, flexion being kept up by pressing the head to the side opposite that to which the back of the child lies. Thus in L. S. A. the head is pressed downward to the right, and in R. S. A. vice versa. I have performed external cephalic version a great many times, and have never seen accident result from it.

The combined method of cephalic version is indicated only in shoulder presentation. When the membranes are intact or have been recently ruptured it may be possible to press the presenting shoulder upward and to the side opposite to

that in which the head is lying by using two fingers of one hand, while with the other hand, the head is crowded down over the brim.

Internal cephalic version may be of use rarely, in converting a brow or face presentation into a vertex, but as a rule when the operation is attempted labor has progressed too far and the head is too well fixed in extended position to allow of rotation on its transverse axis.

Pelvic Version, so-called, may be indicated in mal-presentations such as transverse or oblique, where the operator has failed to perform a cephalic version. Again, the operation may be used where breech presentation is more desirable than vertex, as in some cases of flat pelvis. In flat pelvis podalic version is generally more successful than high forceps, and believing that breech presentation in such a case is more favorable than vertex, I succeeded in one case of flat pelvis, several years ago, in converting a vertex presentation into a breech, following this by inducing labor at eight and a half months. Labor was uneventful, the patient being delivered of a nine and a half pound child. Generally speaking, pelvic version will be performed by the external method, the child being carefully turned by gentle manipulation. Internal pelvic version may be used in rare instances where the shoulder presents. This method was original, so far as I know, with the late Dr. E. A. Tucker, who used it successfully in a number of instances. Take for example a case of left shoulder presentation, dorsum anterior, head to the right, Dr. Tucker suggested pelvic version by carrying the right hand up along the back of the child until the breech could be seized. Then the breech was drawn downward, while with the left hand the head was pushed upward. The operation has the advantage that the version can be done more easily by seizing the lower end of the trunk rather than the foot, and there is practically no danger of a prolapse of the cord, which complication is not uncommon in performing podalic version for the same presentation. If, after bringing the head over the brim, it is desirable to seize a foot and extract, it is an easy matter to do so.

Podalic Version is by far the most frequently used, the indications being very numerous, including mal-presentations, deformed pelvis, prolapse of the cord, uterine inertia, eclampsia, placenta prævia, accidental hemorrhage, sudden death, etc. As a rule, podalic version will be performed by the internal

method, but in the one instance of placenta prævia the combined method of Braxton Hicks may be used. In hemorrhage from placenta prævia, when two fingers can be passed through the cervix and when there is still a fair amount of fluid in the uterus, it is possible in some cases to perform podalic version, the head being pushed upward to one side, while with the other hand the breech is pushed downward over the pelvic brim. When the foot is felt through the membranes, the latter are ruptured and the operator brings the foot down through the cervix into the vagina. The hemorrhage having been controlled by tamponing, so to speak, the lower segment of the uterus with the breech, labor can be allowed to proceed as in a normal breech case. In cases of this kind, however, where formerly I advised combined version, I should now attempt to control the bleeding and, at the same time, dilate the cervix by the use of a modified Champetier de Ribes bag. To exploit the merits of this bag would take more time than we have at our disposal. Although an anæsthetic may not be required in some cases, as a rule it will be necessary.

Internal podalic version has been so widely used and so thoroughly written up, that I will devote but little time to it, although it is the most important form of version. The patient is prepared as for any major obstetrical operation, is put under deep anæsthesia, and the operator decides upon the hand which he will use. As a rule one will prefer the use of the hand, the palmar surface of which will be turned towards the abdomen of the child. Thus, in R. O. A. the right hand will be passed into the uterus, in L. O. A., the left hand.

The question often arises "Shall one or both feet be seized and, if only one foot, which one." Where there is no need of haste, and where the cervix is only partially dilated, it is better to seize one foot and that should be the anterior, if possible. Both feet may be seized if there is need of haste and the cervix is well dilated. There can be no question that version is frequently performed where craniotomy would be far better, and in speaking of craniotomy I will refer to this again. Rupture of the uterus is the one great danger in podalic version, and it is the cause of death in many women every year. Rapid extraction of the child through a cervix only partially dilated has frequently resulted in rupture of the uterus and death, and this is especially true in placenta prævia where the lower segment is unusually soft and very

easily torn. Where an arm has prolapsed a tape or piece of gauze should be tied about the wrist and very little attention paid to it, for if the child is turned the arm will be carried up into the uterus. Sufficient traction on the tape can be made to prevent the arm from becoming extended at the side of the head. Time spent in trying to replace the arm is simply wasted, for if the child can be turned, the arm will take care of itself, while if decapitation is necessary the arm can be used to advantage for traction. In breech presentation with limbs extended in front of the body, it may be necessary to perform partial podalic version. In this case, the hand of the operator is passed up into the uterus, along the posterior surfaces of the thighs and legs until the anterior foot can be seized, when the leg is made to flex on the thigh and the foot is drawn down through the cervix. This procedure is better, I think, than the application of forceps to the breech, or the use of a tractor such as a blunt hook.

Craniotomy. For many years I have been convinced that the operation of craniotomy should be performed much more frequently than it is, notwithstanding the fact that Cæsarean section and the induction of premature labor have greatly diminished the necessity for the operation in cases of pelvic deformity. Version and forceps are elected in many cases where, we believe, craniotomy would be attended by far better results. It is not my intention here to discuss the absolute and relative indications for the operation, for these are fairly well understood, but it is my purpose to call your attention to a class of cases where Cæsarean section is out of the question and where craniotomy is easier and safer, as a rule, than either forceps or version. Take, for example, the case of a patient who is found at full term with a large child, presenting by the vertex. Labor goes on for a great many hours and then as it has become evident that the woman cannot deliver herself the forceps is used. Repeated efforts to extract fail, the blades by slipping may have fractured the skull, and the fœtal heart stops. The lower segment of the uterus has by this time become thinned and the operation of podalic version is attended with great danger of rupture of the uterus. How often, in instances such as this, the operator determines upon version and succeeds by desperate effort in delivering the woman only after rupture of the uterus. Only a short time ago, in speaking of the subject a friend said: "*if* I had

only had a cephalotribe in a case recently I think the patient could have been saved." In a few words, it is my belief that in vertex presentations, where the forceps has failed to extract and the child is dead, craniotomy is, as a rule, easier and safer than podalic version. Again, in a case of small pelvis, podalic version is done and the body is extracted with more or less difficulty. The after coming head cannot be extracted, and in some instances, the operator has become so desperate, that he has pulled the body away, leaving the head in utero. There are many instances where the child is dead, and yet in spite of great difficulty forceps and version are persisted in until severe lacerations are inevitable. My contention is that when the child is dead, craniotomy is to be thought of, not as a last and desperate resort, but as perhaps the easiest, quickest and safest method of delivery. I can recall a great many cases in my experience and in my teaching work where I believe that craniotomy would have saved the patient's life had the operation been performed instead of persisting in delivery by forceps or version. The preparation of the patient for craniotomy is that usual for a major obstetrical operation. The woman is put under deep anæsthesia and after complete dilatation of the cervix the Tarnier basiotribe is used. This instrument is by far the best for crushing and seizing the fetal head. The cranioclast grasps one side of the head, while the Tarnier basiotribe crushes the entire skull, vertex and base. Care should be exercised after crushing the head at the brim, to turn the instrument in such a way as to bring the long diameter of the crushed head into the transverse diameter of the upper pelvis where there is more room. The finger should be kept against the sharp edges of bone in order to prevent laceration of the vagina and extraction should be made slow and gradual in order to prevent laceration of the soft parts. Perforation of the vertex should be made through a suture or fontanelle, while in face presentations, the perforator can be passed directly through the orbit. In extracting the after-coming head, the body is held up, and the perforator passed through the inferior maxilla up into the the skull or one may perforate through the occipital bone. The great danger in craniotomy as in podalic version is rupture of the uterus. However, it is my belief that the careful use of the cephalotribe is attended by less danger than

a protracted forceps operation or a difficult version. In closing, let me make a strong appeal for more frequent use of the cephalotribe when the child is dead, and where the forceps operation fails in extracting the child.

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