AN ANALYSIS OF THE POTTER VERSION*

By Edward Speidel, M.D., Louisville, Ky.

IT IS not necessary to explain to the members of this Association or to any one who has kept in touch with obstetric literature, what is meant by the Potter method of version. Presented for the first time five years ago, and followed up each year with an additional paper on the same method, Dr. Potter has had the gratification of seeing intense antagonism and resentment change to unqualified admiration.

Potter presented his version as a method of delivery to be used practically in all cases, with the idea of relieving the parturient woman of the discomforts and delays of the second stage of labor. He presents no indications or contraindications for the use of the version and, consequently, leaves no opening for a discussion on that point.

Having had the pleasure of a visit with Dr. Potter in Buffalo, and from a limited experience with his method in private and hospital practice, the writer would like to discuss the version from three distinct points of excellence.

First: It is such a decided improvement over all the old established procedures that it should supplant every other method of performing podalic version. Second: The delivery of the child after the version has been performed is such a marked advance over the old methods of breech delivery that it should displace that practice at once. Third: His effective treatment of the child at birth by gentle rational manipulations, is so superior to the many rough treatments to which the asphyxiated baby has been subjected heretofore, that it should induce every obstetrician to emulate them.

The writer wishes accordingly to discuss the method from these standpoints without endorsing the object for which the author presents it.

The Potter method of version, fortunately, is not solely a hospital procedure. It is easier than the older method and can be readily performed by any one at all competent to do a version. A person with a small hand is by nature especially qualified to do a version. It can be performed in the humblest home. In fact the ordinary kitchen table makes the most ideal operating table for any of the ordinary obstetric operations. The patient's head is at one end of the table convenient for the anesthetist, while the hips are at the other end with the legs upon two chairs in the modified Walcher position, which

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is a feature of the technic. This position as is well known increases the true conjugate diameter about 1 cm. The vaginal outlet is drawn so far down that the angle, formed by the long axis of the uterus with that of the vagina, is diminished and the uterovaginal canal becomes less curved, approaching more a straight line and making delivery much easier. It also relaxes the perineum and so lessens the liability to laceration of that structure. This position is superior to the lithotomy position as it relieves the patient of the intense backache that often follows vaginal operations when the legs have been held up, in an unnatural manner, for some time, with the lumbar spinal curve unsupported and the patient resting upon the sacrum with the weight of the two legs superimposed. It might be worth while to try this Walcher position in some of our gynecologic operations.

It is very essential that the cervix be fully dilated and, in primiparae, Potter not only waits for full dilatation but seems to prefer partial descent of the presenting part before proceeding with his version. I venture to say that he avoids manual dilatation in primiparae if possible. In normal dilatation the cervix stretches and retracts with each pain so that, when full dilatation is attained, the cervix is obliterated. In manual dilatation the cervical tissues are simply stretched to the sides of the pelvis; there is no thinning out or retraction, and this is the cervix that catches the neck of the fetus at the crucial point of the delivery and nullifies the object of the version.

Potter prefers chloroform as the anesthetic. Many of us who remember the period of twenty-five years and more ago, when chloroform was used almost exclusively in the south, and one ounce of this drug would hold a patient in deep anesthesia for an hour or more, cannot help wondering whether an inhalation of ½ pint or more of ether into the lungs is not more dangerous than the use of chloroform despite the findings of the anesthesia commission, that is supposed to have settled the question.

The patient is prepared as for a surgical operation, catheterized, shaved, and the parts cleansed externally with soap and water. Potter makes no mention of vaginal cleansing. Here I would like to present my own method of preparation, which I have always used in my obstetric operations. The vagina cannot be rendered sterile by letting a thin stream of bichloride or lysol solution trickle down its walls. Instead the gloved right hand of the operator holding a piece of gauze, saturated with green soap, should be used to thoroughly scrub the vagina and cervix, and this should be followed by a copious irrigation with sterile water.

In Potter's technic the right hand is not used internally throughout the precedure, consequently, it cannot contaminate the field after this preliminary cleansing. The left hand, covered with an elbow-

length rubber glove, is well lubricated with green soap and introduced into the vagina. Green soap is an ideal lubricant for these passages as it is easily washed away by the secretions that pass out during and after the version. Vaseline, which is generally used for this purpose, clings to the tissues and forms the best kind of an embedding material for microorganisms.

Potter then proceeds to iron out the vagina and distends it for easy delivery of the after-coming head. His method consists in pressing downward and backward on the posterior vaginal wall from the cervix to the introitus, first with one finger, then with two, three and finally four fingers, and seems to be an advance over that advocated by Edgar, in which the fingers are inserted into the vagina to make traction on the muscular sling of the perineum for the same purpose. The left hand is then introduced through the dilated cervix, between the unruptured membranes and the uterine wall to the fundus and gently swept around in all directions, avoiding the placental site.

This maneuver is similar to the practice in cesarean section and facilitates the delivery of the placenta. The bag of waters is so elastic and the uterus so relaxed under surgical anesthesia, that the fetal parts can be readily palpated and the location of the legs determined before rupturing the membranes. By palpating the neck of the fetus one can also determine whether it is encircled by the cord. The distinctive feature of the version proper now seems to be in no wise to disturb the relation of the fetal parts before the version is completed. In this way one avoids pressure upon and entanglements of the cord, undoubtedly the most disturbing factor in determining the favorable or unfavorable outcome of a version.

Potter performs all of his versions with his left hand. It is reasonable to suppose that others, not as dexterous, might perform the operation with either hand encased in elbow length gloves and, in performing the version, follow the old rule of using the hand so that the palmer surface of it will come in apposition to the abdomen of the child. At this juncture a towel is wrapped around the left arm of the operator to absorb the liquor amnii, that gushes out with the rupture of the membranes. It seems best to break through the membranes high up near the fundus and then slide the hand down the thighs of the fetus until the feet are reached. Gentle traction, with pressure on the head in the opposite direction, will aid in readily bringing both feet out of the vagina and completing the version.

It will be remembered that in the older methods it was always demanded that only one leg be brought through the cervix, in order that a wider surface be left to dilate the cervix. The facility with which delivery can be effected when both feet are brought down shows that the older procedure was faulty. The idea that a version is dan-

gerous if some time has passed since the rupture of the membranes and, especially, if the head has descended into the pelvis, does not hold good. The experienced obstetrician finds the uterus so relaxed and elastic under full surgical anesthesia that the head can be readily pushed up and the hand introduced for a version.

Only recently I performed a version in a head presentation bringing down both feet readily more than twenty-four hours after rupture of the bag of waters had taken place. With both feet protruding from the vagina, the final step in the procedure resolves itself into the delivery of a breech presentation. It is but fair to state that in the past, everyone has dreaded the delivery of the arms and after-coming head by the method in vogue up to recent times. The method described by Potter is so superior in every respect, that it should remove every dread of breech delivery. One need have but little trouble with the delivery of the after-coming arms, shoulders and head.

Potter makes gentle traction on the legs of the fetus, turning the back of the child up until the scapulae appear at the vulva. Then he slips a finger along the shoulder under the symphysis pubis and delivers the anterior arm. He then turns the body of the child in such a way that the posterior arm comes to rest under the symphysis pubis and delivers it in the same manner as the first shoulder. In all of my cases after delivery of the anterior arm, the posterior arm slipped out without any difficulty.

The crowning feature of the version is the delivery of the after-coming head. It is far superior to the Smellie-Veit method and is dependent solely upon the manipulations by the operator. Potter advises against following down the fundus during the delivery; because, he claims, one creates the very condition that we seek to prevent. By pushing down on the head it sinks between the shoulders and the arms go up. Whether Potter is correct in his view, I am not prepared to say. In all of my cases the arms seemed to have been carried upward, more or less, but this made not a particle of difference in the ease of delivery.

Potter delivers the head by inserting two fingers of the left hand into the baby's mouth, the body riding astride of his left arm and then, with the right hand resting upon a sterile towel, suprapubic pressure is made downward and backward until the face distends the vulva. The feet of the child are now held high up and its throat stroked to empty the trachea, and, in many instances, the fetus will begin to breathe while in this position.

There should be no haste in forcing out the rest of the head. Instead, it may be allowed to dilate the perineum and with the ironing-out of the vagina, practiced before beginning the version, many deliveries will be completed without a laceration. Potter shows no hurry

in the delivery of the child for fear of having an asphyxiated infant; and after the birth of blue babies, he quietly places them on their right side on the abdomen of the mother and allows respiration to start spontaneously. This position, of course, favors the closure of the foramen ovale. The umbilical cord is not tied until pulsation stops.

It will be remembered that the venous circulation in the cord ceases very shortly after birth in consequence of the contraction of the umbilical arteries; but the arterial circulation in the umbilical vein continues for from five to fifteen minutes adding, at least, an ounce of blood to the fetal circulation and supporting the heart of the fetus until respiration is established. It may be assumed that this is an important feature in the resuscitation.

Success seems to follow this gentle method in nearly every instance; that has been my experience. Potter's statistics show the same result. This goes to show that we can discard many of the rather rough manipulations that were practiced in the resuscitation of asphyxiated babies, without impairing our results.

In a discussion of this mode of the delivery, with Halstead of New York, it was suggested that the body of the child be allowed to come down, naturally, with the shoulders descending in the left oblique diameter at the superior strait until the scapulae appear at the vulva, then to rotate the anterior shoulder under the symphysis pubis and deliver as such. In order not to disturb the relation of the fetal parts, the posterior shoulder should then be lifted over the perineum. Theoretically, this should then leave the after-coming head in the right oblique diameter of the superior strait, consequently, the easiest delivery should be, downward pressure on the fundus with the head held in this diameter until the fingers in the baby's mouth press firmly upon the perineum, then rotation forward under the symphysis and the delivery completed as described by Potter. Potter with his enormous opportunities can quickly determine whether there is anything of value in these suggestions.

An ampule of pituitrin is injected as soon as the baby is born and serves to expedite the delivery of the placenta. It may be assumed that a uterus emptied by version, in ten to fifteen minutes, is more liable to sudden relaxation and postpartum hemorrhage than one that has emptied its contents by rhythmic contractions for an hour or more. Furthermore about 2⅓ ounces of blood are saved the mother, as has been determined by Ryder at the Sloane Hospital for Women in one hundred cases treated with pituitrin, in the third stage of labor.

With the experience gained through the Potter version the writer has solved the delivery of breech presentations for himself as follows: With full dilatation in a frank or complete breech or footling presenta-

tion, full surgical anesthesia, iron out the perineum, bring down both feet, and complete the delivery according to the Potter procedure.

Potter does not state his fetal mortality in normal cases in which he has used his version solely for the purpose of relieving the patient of the discomforts of the second stage of labor. It is surely essential that those desiring to follow that indication for the use of this version should know this.

The writer has found the version of special service in cases with apparently normal diameters but a lack of progress in labor in spite of good pains. In such instances there is generally found premature ossification and, in consequence, nonmolding of the fetal head or an overdeveloped fetal head.

Only recently the writer delivered a woman, weighing 94 pounds, of a 9½ pound baby by the Potter version, without laceration of the soft parts, after a two hour ineffective second stage of labor.

THE FRANCIS BUILDING. (*For discussion, see p. 189.*)

TREATMENT OF ECLAMPSIA; THEN AND NOW*

BY JOHN F. MORAN, M.D., WASHINGTON, D. C.

ECLAMPSIA and infection are the two great scourges of pregnancy, parturition, and the puerperium. While the latter, through the introduction of asepsis, has been robbed of much of its terror and placed well within the limits of prevention, the former, because of insufficient knowledge concerning its etiology and origin, is still involved in hypothesis and theory; its treatment largely empirical and its morbidity and mortality high. Much important work, however, has been accomplished in recent years, particularly, in its pathology, which, in supporting the toxic theory, is thus contributing to a more comprehensive knowledge of the disease. That various toxemias affect alike the pregnant and nonpregnant is obvious; but the trend of opinion favors the belief that there are one or more varieties dependent on the gravid state which are, probably, the underlying causes of eclampsia, hyperemesis gravidarum, acute yellow atrophy of the liver, and many of the minor ailments and psychoses of pregnancy.

Conformable to the various views held as to the origin of eclampsia, different methods of treatment have been resorted to; but the results have remained as uncertain as the theoretic foundations on which the methods have been based. So that, at the present time, we are, unfortunately, without a rational treatment with which to combat this

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get short second stages and the patients come through with good results—we think, better statistical results—in the end. Why not take this happy middle ground instead of accepting some ground that we cannot feel absolutely sure of?

I was surprised to hear that Dr. Bill is not using nitrous oxid. We get very good results and never think of using chloroform.

DR. ROLAND E. SKEEL, Los Angeles, Cal.—Purely as a side issue Dr. Mosher's paper has brought out an interesting point in that he has abandoned morphine in favor of pantopon.

Shortly after Sahli made his observations upon the difference in the therapeutic effects of morphine and the combined hydrochloric acid soluble alkaloids of opium, we started on a series of clinical experiments to ascertain which was the more valuable as a surgical narcotic, inasmuch as opium had an undoubted stimulating effect upon the heart which morphine did not have. This was done by giving morphine and pantopon alternately to every operative case regardless of the nature of the operation or character of the anesthetic, and it was found that the patients having pantopon not only were more comfortable than the morphine patients but that vomiting was materially lessened after the former. In laparotomies this worked out in about the proportion of one to three, that is three times as many vomiting attacks followed the use of morphine as followed the use of pantopon as the pre-and postanesthetic narcotic. Since that time pantopon-atropine instead of morphine-atropine has been used almost without exception and if those who believe in a mixed narcosis will follow this plan in their gynecologic patients I am confident these patients will suffer less shock and have a more comfortable convalescence with much less nausea and vomiting.

Dr. Edward Speidel, Louisville, Ky., read a paper entitled **An Analysis of the Potter Version.** (For original article see page 150.)

DISCUSSION

DR. IRVING W. POTTER, Buffalo, New York.—Dr. Speidel has discussed version from three standpoints without endorsing the procedure.

I wish he had taken another course and given his own personal experience with it and either advocated or condemned it. We know it can be performed in the house or hospital. We also know that a small hand and arm are better than a large hand and arm. We know that the position of the patient is of importance and that the modified Walcher position is the ideal one to employ. As for the anesthetic, we have concluded that chloroform is the best and see no reason to change. We use it because of the rapidity with which the patients recover and because of the complete relaxation which is necessary in doing a version.

Of course the cervix must be obliterated and the os dilated. We wait until the parts are ready, it makes no difference whether it is half an hour or three days, provided the woman is comfortable.

We have found green soap to be a splendid lubricant and a splendid cleansing agent for the vaginal canal. This makes the parturient tract about as sterile as it can be made in that length of time. With plenty of green soap and plenty of time to dilate the vaginal canal, the hand can be introduced into the vagina without any danger. Then the ironing out process is begun and version is started. I still maintain that the left hand is the proper one to use. In that way the right hand is left for outside work, and the doctor should school himself to use only one

hand for the work in the uterus. When one hand has been introduced into the uterus it should not be withdrawn until the feet come along, in the average case.

There should be no time limit placed on this operation. The cord is not pulsating and has not since the baby has left the brim of the pelvis because there is pressure on it.

One of the effective points of this method consists in the delivery of the shoulders. As one of the shoulders rotates underneath the arch, the arm is being lifted up over the chest. The posterior shoulder is then brought forward by rotating the body. In that way you keep away from the rectum, avoid the tears which you formerly had, and, deliver both as anterior shoulders. What difference does it make whether the head rotates and comes through one or the other side of the pelvis? I think it is a mistake to deliver one shoulder posteriorly when it is the rectum we are trying to get away from. Another thing. These patients should not have an antepartum enema. If they do, you will have a liquid fecal matter distributed all over the field of operation, and that is wrong.

Now, who shall do versions? I do not believe the ordinary practitioner should rush in and do versions, but I think the men who are properly trained can do versions with benefit to the mother and child. I do not advocate, and never have, that the man who is seeing scarlet fever and diphtheria, and such things, should go and put his hand up in the vagina and uterus just as if he was putting it in his pocket. That is not fair to the man, the woman, or the method. I have done version in a great many cases and I have widened the field for the application of version, and I believe that I have avoided many complications by this procedure.

I work in Buffalo in many different institutions as there is no institution large enough to contain all of it. That makes my work scattered, which is unfortunate. Statistics are not reliable in all of those places. If there was but one large institution where the work could be done under the supervision of a certain set of individuals, it would be ideal. Last year I delivered over 1130 women and over 900 of them were version cases. This compares favorably with the preceding year, in which 1113 were delivered. My fetal mortality was 2.3 per cent.

I have tried for five years to bring before you a method that would stand up under opposition, and I submit to you these results. They are the best so far that I have been able to produce.

DR. M. PIERCE RUCKER, RICHMOND, VIRGINIA.—I have the honor of being one of Dr. Potter's early disciples. I started doing version, principally, because it saved the mother pain, and I became more enthusiastic because it saved the mother's perineum, and I became more enthusiastic still when I realized that it saved the babies. Men who have inquired into the deaths of babies during the first days after birth, find that a large percentage have cerebral hemorrhage, which may or may not be the cause of the death but it is a pathologic condition. Of 481 babies, 21 have come to autopsy, only 2 have shown signs of intracranial hemorrhage. One premature baby lived a few hours and died with a large intracranial hemorrhage, which, I believe, was due to pituitrin. One case had a contracted pelvis and a prolapsed hand. I did a version but had to force the head through the pelvis by brute force; that baby had a cerebral hemorrhage. The other 19 babies came to autopsy from enlarged thymus and other conditions, not intracranial hemorrhage. I think we must take this point into consideration in choosing the method of delivery. I believe if you follow up the babies for a year, you will find that the babies after easy births far surpass in their chances of survival those that have difficult deliveries.

DR. LEE DORSETT, ST. LOUIS, MISSOURI.—I had the pleasure of spending a few days with Dr. Potter and on returning home took up his method of version in some of my cases. I have not done it as a routine method of delivery, but in certain selected cases it has worked admirably. In occipitoposterior positions I think that it is the only method of delivery. I do not think that the Scanzoni or similar procedures have any place. Unless every step in Dr. Potter's technic is followed the whole method will be a failure.

It is my opinion that chloroform is the only anesthetic to be used. Ether is much slower, more of the drug is necessary, and its elimination is much slower. In abdominal cesarean sections where the resuscitation of the child is often necessary I have always noted that there is a strong odor of ether on the child's breath for some time after its delivery.

In regard to "ironing out" the vagina, Dr. Potter does not "spring" the vagina with two fingers, as some other men have taught, but inserts the whole hand within the vagina and, usually, spends from five to ten minutes in the process of dilatation.

As to bringing down both feet during extraction of the child, it has been my experience that it is often difficult to grasp both feet at the same time, so that I have been compelled to draw one foot through the cervix, then go after the other, and bring both through the vagina and vulva together.

In my work, so far, I have lost one baby in doing version. Looking back at this case now, I can readily see my mistake. The case was one of eclampsia in which labor was induced by the bag. As the patient was not doing well, having poor contractions and an alarmingly high blood pressure, I went through a partially dilated cervix and did a version; but the cervix contracted upon the aftercoming head and the baby was lost.

I have been surprised when observing the perineum in the cases after delivery, to note how readily that structure "snapped" back in place. I have examined these cases from one to two months after delivery and in all of them the perineum was intact.

DR. O. H. SCHWARZ, ST. LOUIS, MO.—I have had the opportunity of seeing Dr. Potter at work in Buffalo, and there is no question that his method of version is admirable. If one is performing his version, it must be done in the minutest detail. I think doing it as a routine procedure is entirely wrong. One must remember that where conservative obstetrics is practiced, very admirable results are obtained.

I was very enthusiastic in employing version in cases of occipitoposterior positions, but before doing this I consulted the literature on the management of occipitoposterior cases. One of the first papers I consulted was that of Plass, published in 1916, in the Johns Hopkins Bulletin. The incidence of occipitoposterior position was 11½ per cent. He explains this low percentage by the fact that many cases were not examined until well in labor, and rotation had probably occurred in many instances. Operative interference was necessary in 22 per cent of 600 cases. The mortality was 4.02 per cent, including babies of 2500 grams and up. If we employ version in such cases, we must equal or better these figures.

We employ the Potter version in occipitoposterior positions in such cases where there is no progress within a reasonable time after full dilatation of the os. We use the method in preference to Scanzoni application and to application of forceps with the occiput transverse.

DR. ARTHUR H. BILL, CLEVELAND, OHIO.—Heretofore we have discussed the question of whether version is a proper routine procedure. This morning we are to discuss the method of delivery. It seems to me to be for the most part very

commendable. One or two steps which, in the hands of the average man, give trouble have not been emphasized.

In the first place, in regard to the delivery of the shoulders, I would like to suggest a slight improvement. It has been our practice to deliver the anterior shoulder first, and I think that is the proper procedure. Instead of putting the fingers in and sweeping the hand down, it is our practice to grasp the baby by the body, with its back to the front, draw it downward and outward in a direction opposite to the shoulder to be delivered, at the same time making a rotary movement. What happens is that the arm meets the resistance of the pubic arch, and is thrown across the chest, the shoulder, and usually the entire arm, being delivered by this movement without inserting the fingers into the vagina at all. Then by the same movement downward and outward in the opposite direction, the other arm is delivered. The advantage is that you do not need to insert the fingers into the vagina, and no traction is made on the arm.

Now, about delivery of the after-coming head. It has been stated that it makes no difference through which diameter of the inlet the head passes. It certainly does make a difference. I believe that many babies are lost in version because of this mistake. When the baby is delivered with its back to the front, we are drawing the occipitofrontal diameter of the child's head through the conjugate diameter of the inlet. The occipitofrontal diameter of the child's head in some cases is greater than the conjugate diameter of the pelvis, and hence there is difficulty in the extraction of the head. Before making traction on the child's head, if it lies in the anteroposterior diameter, rotate it to an oblique position, and then make traction; and, after it is through the inlet, internal rotation. Let the child's head follow the path it would follow in normal labor.

DR. SPEIDEL (closing discussion).—I am sorry to say I am not prepared as yet to follow in Dr. Potter's footsteps, by endorsing his version for every case. In a multipara with full dilatation of the os, who will easily deliver in fifteen or twenty minutes, with nitrous oxide or chloroform so there will be no discomfort in the second stage, I cannot see why such a baby should be turned, and the woman submitted to the risk of podalic version. I do say that there are indications for this version, and I cannot see why it should not be used in all face presentations. I think the majority of occipitoposterior positions should be delivered by version, and in breech presentations, the final steps should be as in the Potter version. I mentioned in my paper that the Potter version is easier than the old podalic version. But even in the hands of an expert this version is not easy. There is a decided nervous tension in such circumstances and none of us are absolutely sure that the baby is going to be born alive. The crucial point is the delivery of the after-coming shoulders and head; and Dr. Potter should be able to improve upon that.

I am glad Dr. Bill endorsed my suggestion that if the delivery is conducted according to the proper mechanism, this will make it easier. The shoulders should come down in the left oblique diameter, the head is then in the right oblique diameter and, consequently, it should be easier to deliver the shoulder and head in those diameters.

In regard to the indications: If it can be shown by postmortems that babies die of hemorrhage of the brain in normal deliveries because of a long-continued second stage of labor, then, of course, it is an indication for using this version; but if the hemorrhages only show themselves in abnormal cases it means that the version is indicated only in abnormal cases. Until you can show that these hemorrhages occur in normal cases, I am not prepared to follow Dr. Potter in using this version in normal delivery.