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TECHNIC OF PODALIC VERSION AND EXTRACTION

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JUST as the attitude toward early cesarean section and the avoidance of long drawn out tests of labor has changed, so has the attitude in the past ten years changed toward the use of version and extraction. The profession now believes that the technic of this type of delivery should be part of the armentarium of everyone who professes to practice obstetrics. He at least should have a working knowledge of the fundamental principles and maneuvers involved in this type of mechanism of labor.

The indications for this procedure vary with the individual skill of the operators. Some men elect this method of delivery as a routine method of eliminating the second stage of labor while others reserve this procedure for persistent posterior position of the fetal head, deep transverse arrest of the head, uterine inertia, floating heads, etc. Regardless of the indications certain essential prerequisites must be kept in mind if a successful result for mother and child is to be obtained.

In a recent publication[1] we emphasized the fact that a version and extraction should not be attempted until the lower uterine segment is thinned out and the external os completely dilated. The failure to observe this fundamental fact in any type of vaginal delivery has caused untold calamity.

The diagrams labelled 1 and 2 demonstrate in a schematic way, conditions (Figs. 1, 2 and 3) of the lower uterine segment and external os, which are unfavorable for a version and extraction. It will be noted that in both drawings there is still a remnant of the internal os and that the external os is thick. In other words, the effacement of the lower uterine segment and the dilatation of the external os is not complete and is, therefore, not in an ideal condition for attempted delivery.

Figure 3 represents the ideal condition of the lower uterine segment and the external os. The lower uterine segment has been thinned out, the internal os has disappeared and the external os is completely dilated. When those conditions are present the ideal time has arrived for the performance of version and extraction.

Another essential fact to be remembered is that a version should never be attempted when the uterus is dry and firmly contracted around the fetus. This condition does not exist as a rule excepting after ruptured membranes and a long labor. The uterus has molded itself around the fetus and a very definite retraction ring is present. (Fig. 4.) Any attempt to perform a version under these circumstances is, to say the least, poor obstetrical judgment and can result only in a ruptured uterus.

A third precautionary fact to be kept in mind is that, while a floating head can be delivered by this procedure, this type of case always carried a greater risk, and the operator must expect a higher fetal mortality rate, as he does with a breech extraction, because, there is no molding of the

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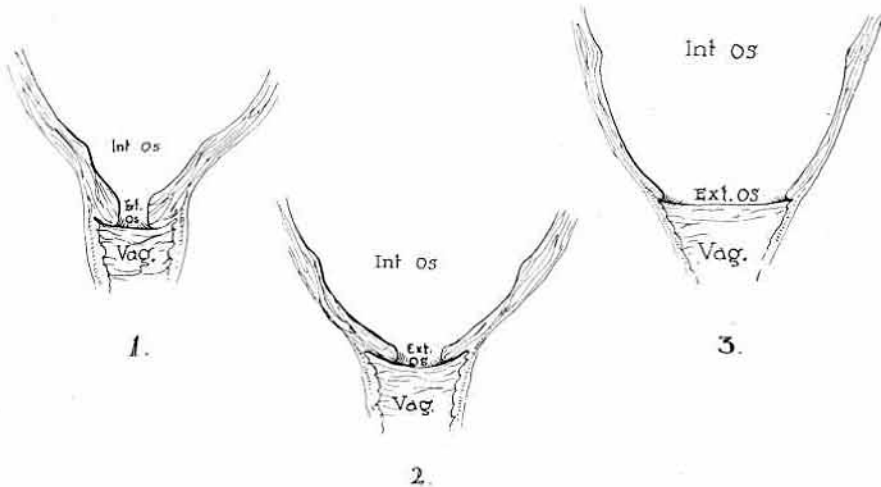
head with flexion. We consider at least partial molding of the head with flexion essential.

of the marked depressive effect upon the baby. If any drug is to be used, it should be morphine sulfate in quarter grain doses and



Figs. 1 to 3. Various stages of effacement of the lower uterine segment.

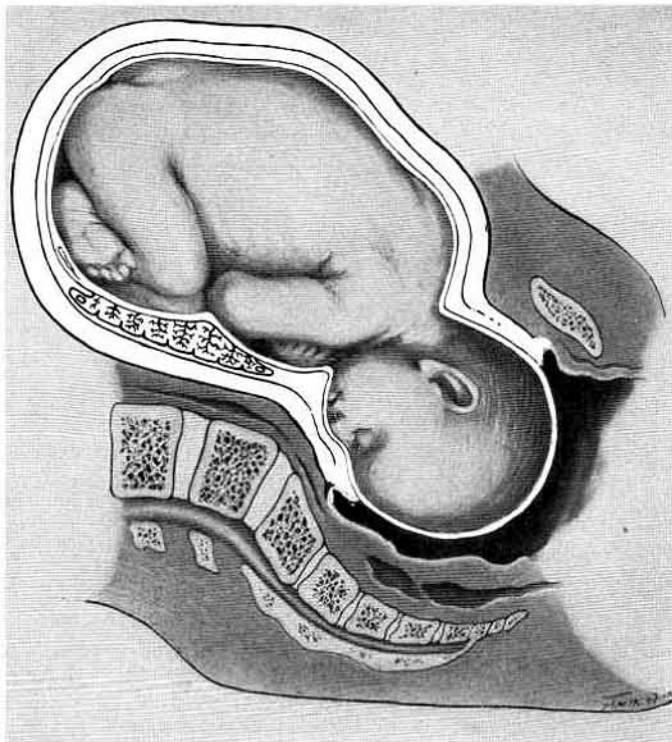


Fig. 4. Uterus completely molded around fetus. Impossible condition for performance of internal podalic version.

It has always been our practice to avoid barbiturates of any kind (recent investigations confirm the deliterious effect of these drugs on the fetus) during labor, because care should be taken not to give it if delivery is to be effected within three hours.

These essential prerequisites are always required before the patient is ready for

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delivery by version and extraction: (1) Complete effacement of the lower uterine segment; (2) complete dilatation of the external os; (3) fetal head at or in the brim of the pelvis; (4) membranes unruptured or, if ruptured, the uterus is not too tightly molded about the fetus.

The preparation of the patient consists of cleansing and shaving. No enemas are given because of possible contamination with loose stool.

The patient is draped in the modified Walcher position with nurses holding the legs, and if no assistance is available, the legs can be supported by two chairs whose backs are facing each other.

Chloroform is used as an anesthetic because of its ease of administration and the deep relaxation obtained. Again let us repeat the so-called obstetrical anesthetic has no place in this procedure. The patient must be anesthetized to a surgical degree after which the bladder is emptied by means of a soft rubber catheter.

At this time the vagina is ironed out by the introduction of one finger and finally with the entire hand. The movement is from within out and from above down and is aided by the use of much sterile liquid green soap. When a tight outlet is encountered, twenty minutes is often consumed in this ironing out process. This does away with the need of an episiotomy.

The operator's hand is introduced into the uterus with the palm up in order to more easily follow the curve of the sacrum. The head is grasped like a baseball and is pushed up out of the inlet and iliac fossa.

At this time the position of the head is obtained by paying attention to the ears, which are always on the side of the head and the operator then explores the interior of the uterus and visualizes the exact position of the fetus. It must be remembered, that when the hand and arm, covered with a long rubber glove reaching the elbow, is once introduced into the uterus, it is not withdrawn until the feet are delivered. Repeated introduction of one hand and then the other is to be deplored because of the possibility of infection.

If the membranes are intact they are separated from the uterine wall, care being taken to avoid the side of the placenta, as detachment of the placenta causes bleeding. They are ruptured high up in order to save some of the amniotic fluid which facilitates the version.

The operator next folds the arms across the chest and under the chin. (Fig. 6.) This maneuver prevents extending of the arms, which is a most serious complication. It is surprising how often the arms are not in the usual textbook position of being folded, but many times are along side of the head or body, and any attempt to do a version before they are folded properly will result in extension of one or both arms and we so firmly believe in this statement, that when the operator does get extension of the arms, he has only himself to blame for he either failed to fold the arms or he did it carelessly. (Fig. 5.)

Both feet are now grasped between the first and middle fingers and brought down as far as the iliac fossa. At this time, it is wise to recheck the folding of the arms and having done this, both feet are brought down to the vulva and delivered together. Continued gentle traction is made until the knees are exposed. The version is now complete.

It is essential to take plenty of time during the following extraction, and the sooner the operator forgets the proved fallacy that a baby must be extracted within seven minutes the better results will be obtained.

Delivery of the buttocks is effected through the hollow of the sacrum by simply lifting both feet up toward the ceiling so that the baby is actually sitting on its mother's perineum.

Whether the original position of the fetus was a right or left sided position will depend upon whether the body will rotate to the patient's right or left spontaneously. Some aid may be needed in the rotation of the body by slight pressure on the baby's

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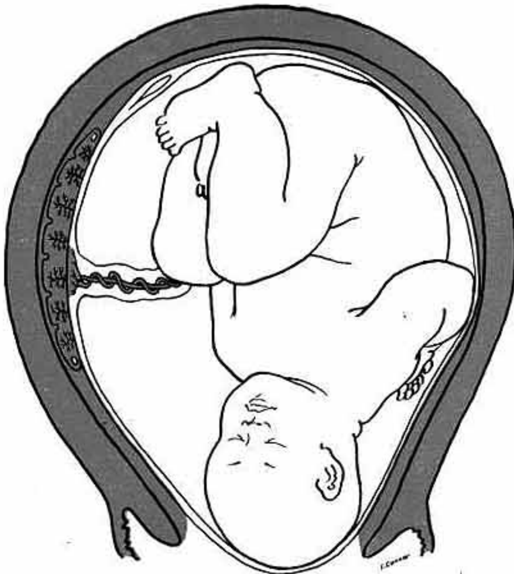

Fig. 5A.

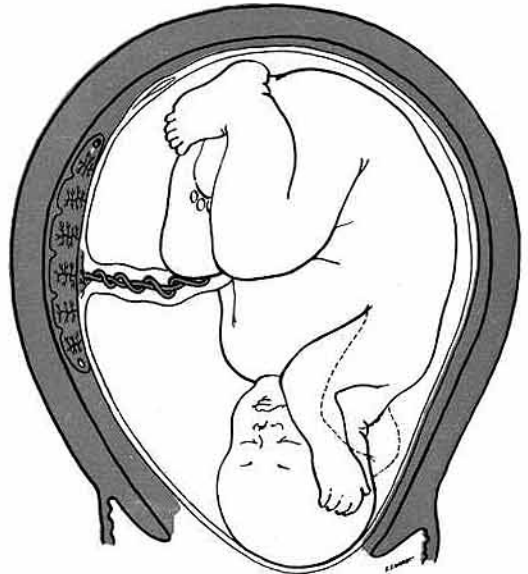

Fig. 5B.

Fig. 5C.

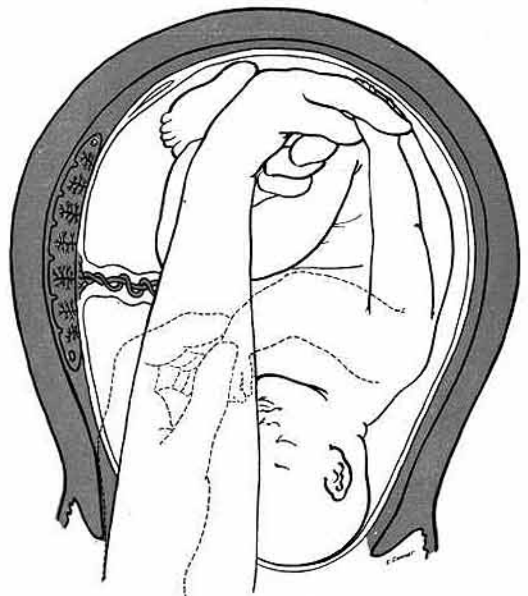

Fig. 5D.

Fig. 5. Frequently found positions of arms in utero which spell disaster if not corrected before attempted podalic version.

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thigh. The rotation is completed by traction upon both feet in the direction of the mother's thighs until the scapulae appear. Here the aim of the operator is to get the back straight across underneath the pubic arch so as to facilitate delivery of the shoulders and arms as anterior shoulders and arms, doing away entirely with delivery of posterior shoulders and arms. This is accomplished by placing a finger at the angle of either one of the thoroughly exposed scapulae, and with slight pressure toward the midline, deliver the shoulder and humerus. With the finger in the bend of the elbow and avoiding the hooking of a finger around the humerus, the arm is lifted up and delivered in a manner similar to the lifting up of an old fashioned pump handle.

A finger at the angle of the other scapula, after the body has been rotated will convert the posterior shoulder into an anterior one and the extraction is effected as already mentioned. It must be remembered that at no time is the body twisted, but instead by equal traction on both feet, the body will rotate spontaneously.

The operator now determines if there is any loop of cord around the neck or between the legs of the child and if present, this must be eased by cutting it, if necessary.

The fingers of the left hand are placed on the baby's chin or in the mouth and with the right hand gentle pressure is made on the occiput over the pubes, to aid in the flexion of the baby's head and also direct its passage through the pelvic canal.

If difficulty is encountered, forceps, preferably Pipers, are applied to the sides of the head, care being taken not to make application when the head is high in the pelvis. It should be remembered, that it is easier and safer to push a head through the pelvis than to pull it through. (Fig. 9.) When the after-coming head has reached the perineum and the mouth is exposed, the mucous is milked out of the baby's throat and the head gently eased out and lifted up over the perineal body as a flexed head. The patient must be thoroughly relaxed in the Walcher position to avoid lacerations.

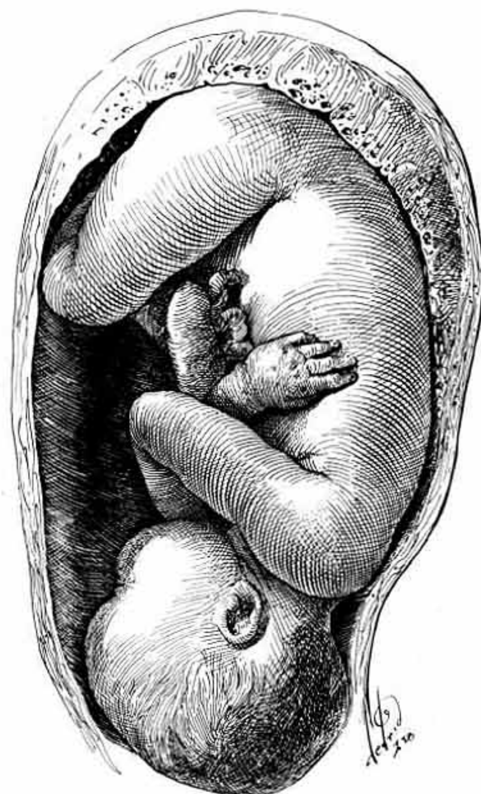

Fig. 6. Proper folding of arms across chest and under chin before attempting internal podalic version.

The baby is placed on its right side on the mother's abdomen, the cord cut, an umbilical clamp applied and the baby transferred to a warm crib.

Following delivery of the placenta, a cubic centimeter of pitocin is given intravenously, the cervix examined and repaired if necessary, the bladder again catheterized and the patient is returned to her room.

COMMENTS

There has been a great deal of discussion concerning the ability of the average general practitioner to carry out this technic. We believe, as we mentioned in the introduction, everyone should know the funda-

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mental principles of this type of delivery. We do not believe everyone should try this procedure, but anyone who has had surgical training along with obstetrical training should be qualified to carry out this procedure successfully.

This is not a hospital procedure *per se* as the technic can be carried out in the home with equally good results, as we have often demonstrated.

In our experience in properly selected cases, the fetal and maternal morbidity and mortality is no greater than in other methods of delivery.

This brings up the question of anesthesia. We are firm believers in chloroform properly administered by a competent man, and it behooves any person delivering women to team up with a competent anesthetist at the head of the table. We like chloroform because it is least harmful to the baby, because of its ease of administration, the complete relaxation obtained and the quick recovery of the patient. It must be remembered that the mask must always be the width of two fingers from the face of the patient, and that it takes approximately eight minutes to get a patient in the state of deep surgical anesthesia. The chloroform is not poured but is administered by drops, remembering not to hold the bottle too far from the mask. Fifty per cent of the operator's battle is won at the onset if he has an understanding, co-operative, trained anesthetist. Complete deep anesthesia is needed at only two stages of the procedure, first while the hand and arm are in the uterus, and second, at the time the after-coming head is being lifted off the perineum.

We believe that many lacerations of the perineum are the result of decreasing the anesthesia at this point and the operator's forgetfulness to maintain flexion of the head and pulling the head through the perineal body rather than lifting it up off the perineum.

We have spoken at some length concerning the effacement of the lower uterine segment and dilatation of the external os because we still find much misunderstanding concerning the proper time to perform this type of delivery. Our discussion on this point is as clear as we are capable of making it. There are, however, isolated cases which require further explanation.

In consultation we frequently see arrest of the head in the midpelvis. The lower uterine segment is effaced, but the head, which is in the transverse or posterior position is above the external os which is perhaps three fingers dilated and will never become more dilated, because of the absence of the head as a dilator at the external os, which is paralyzed, and will become swollen and edematous if delivery is not effected at once. It is surprising how easily under deep anesthesia the external os, represented as a thin negotiable rim, disappears when the examining fingers are spread apart and allows the entrance of the hand into the uterus. As we have stated elsewhere,[1] the crux of the situation is the complete effacement of the lower uterine segment, and dilatation of the external os is one of degree only.

It must also be kept in mind, that the formation of a uterine retraction ring commences at the onset of labor, and that at the beginning of the second stage when the lower uterine segment is completely effaced and the external os completely dilated, the retraction ring is well developed and the longer the second stage the more pronounced is the retraction ring. For this reason alone, we believe that the present tendency of attempting to perform this type of delivery, as a last resort, is a mistake. If this method of delivery is to be used at all it should be used at the proper time, and not wait until the uterus is molded tightly about the fetus. We also believe that the use of bags or pituitrin in the first stage of labor is contraindicated, because bags are prone to displace the presenting part allowing a prolapse of the cord and a possible detachment of the

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placenta causing death of the child. Pituitrin likewise causes fetal mortality by producing uncontrollable uterine contractions.

Regarding the use of antiseptics our experience leads us to the conclusion that soap and water generously used meet all the requirements necessary.

We also believe that the proper ironing out of a birth canal before the introduction of a hand is most important, and this procedure, if done properly and carefully, makes episiotomy unnecessary. The argument put forth that the fascia beneath the vaginal mucosa is separated is greatly exaggerated.

It is important at this time to again emphasize that haste in the extraction of the fetus is not only unnecessary but harmful, because of the damage liable to occur to the soft parts of the mother and the loss of flexion, which is so essential in the proper extraction of the fetus. It has often taken us as long as twenty minutes to complete the delivery of the child after the navel has appeared at the vulva.

It is allowable at all times to make gentle, steady traction upon the child as long as the child moves through the birth canal. When the child does not move careful examination to determine the cause must be made. The most frequent obstruction encountered is the umbilical cord between the legs. This should be cut to allow the continuous passage of the child and a hemostat is applied to the cut cord as it appears at the vulva.

Another cause of delayed descent of the child is a prolapsed arm. When this occurs no attempt at replacement of the arm should be made but as the fingers of the child appear at the vulva, the operator grasps the fingers with a piece of gauze making gentle traction and delivering the hand and arm along side the body of the child.

We never cover the body of the child during the extraction with a warm towel and neither do we twist or grasp the body during extraction because of possible injury to the internal organs. Much more satisfactory traction is obtained and along with it spontaneous rotation of the body if traction is made upon the feet by grasping them between the first and middle fingers. No slipping is possible if pressure is made upon the index finger by the thumb. It should also be remembered that rotation of the back is aided many times by greater traction on the anterior leg.

The delivery of both shoulders as anterior shoulders, we believe, is a decided improvement in the technic, because we more easily avoid perineal tears and are less prone to get infections because of possible contact with the rectum.

As a practical point we have noticed that since the intravenous use of pitocin immediately following the third stage of labor, the blood loss has been reduced materially and it is a good procedure regardless of the type of delivery.

We are also of the opinion that at all times the birth canal should be carefully examined and the necessary repairs made immediately following delivery, whether it is in the home or in the hospital. Immediate repairs of cervical injuries tend to aid involution of the uterus and at the same time, it is possible to remove old scar tissue and infected cervical cysts in multiparae, but care should be exercised not to remove too much tissue.

Comment was made in 1928 by the senior author to the effect that unilateral tears appear on the side of the cervix where the occiput has remained the longest. For example, in prolonged left occiput posterior positions it would appear on the left side and right occiput posterior positions on the right side, thus emphasizing the damage from prolonged posterior positions. Since making that observation we have seen no reason for changing our opinion.

Resuscitation of the child, when necessary, is accomplished by treating the child as a patient in shock. Dry external heat is applied by warm towels, mucus is aspirated from the trachia by means of a small rubber catheter and air is introduced directly into

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the lungs by blowing into the catheter gently and expelling the same by gentle pressure on the chest of the child. The heart beat and the color of the child are the indicators of its condition, and if the heart beat is present the resuscitation is usually successful. We have for years discarded the procedure of the so-called tubbing and spanking of the child, as being entirely out of place in the treatment of a shocked patient.

SUMMARY

An attempt has been made to simplify, clarify and standardize the technic of podalic version and extraction.

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