THE MANAGEMENT OF THE OCCIPITOPOSTERIOR POSITION

With Special Reference to the Modified Scanzoni Maneuver

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DURING recent years much has been said and written concerning the proper management of those cases which come under the caption of this paper. In spite of excellent contributions to the literature on this important subject, to the physician who practices obstetrics today the occipitoposterior position remains still a bugbear.

The careful analysis of former labors in cases presenting the past history of stillborn children or of infants who succumbed shortly after instrumental delivery, often reveals the earmarks of faulty management of this common complication. Errors in the diagnosis and treatment of this position are observed so frequently that one wonders if the fault does not lie universally with the instruction of obstetrics, rather than with those instructed. DeLee justly ascribes to the improper conduct of these cases the appalling annual total, in the United States alone, of several thousand infant deaths and hundreds of maimed or invalided mothers.

Any condition which causes so much avoidable mortality and morbidity calls for an inventory of the various methods whereby these unhappy results can at least be reduced in number.

It has been estimated that 95 per cent of all cases are vertex presentations at the beginning of labor. In approximately one-third of this number the occiput is directed posteriorly, right occipitoposterior (occiput dextra posterior, 135 degrees) or left occipitoposterior (occiput lævus posterior, 135 degrees). For the same reasons that explain the greater frequency of the left anterior position, left occiput anterior (occiput lævus, 35 degrees), the occiput in most posterior positions is in the same oblique diameter, right occiput posterior (occiput dextra posterior, 135 degrees).

The mechanism of labor in the posterior position presents one main difference from that in the anterior position—rotation in the former takes place through an arc of 135 degrees, while in the anterior position the occiput describes an arc of 45 degrees.

Engagement of the head in occipitoposterior position occurs more slowly, partly because of the promontory, and partly because an almost constant deflection, or "military" attitude of the presenting part brings a less favorable cephalic diameter (the occipitofrontal instead of the suboccipitobregmatic) into the pelvic inlet. Because of the existence of these factors, all of them unfavorable in tendency, internal rotation of the head in the posterior position, if it occurs at all, consumes more time.

Often the membranes rupture early, delaying the progress of labor, and as the hours drag by increased risk to mother and babe is inevitable. Exhaustion, inertia, and hæmorrhage threaten the mother, while the prospect of a stillborn child becomes real in the neglected case. Lacerations here are more extensive than usual, especially if the head rotates posteriorly to the hollow of the sacrum. It is not surprising, therefore, that "more children are lost from this complication than are lost from the effects of contracted pelvis" (DeLee).

To minimize these dangers, by whatever means assure him of the best results, becomes the duty of every obstetrical attendant.

The proper management of a given case begins with the diagnosis of position. Failure to do this early, or failure to do it at all, is responsible for no small share of the misfortunes attributed to this position. The consequences of error are here so hazardous that every vertex labor which does not proceed smoothly should be carefully scrutinized for the possibility of a mistake in this direction.

Once the existence of posterior position has been established, the prudent attendant fortifies his patience, adopts an attitude of "watchful expectancy," and awaits some indication for interference.

The greatest danger during the period of dilatation, in the average case, is exhaustion of the mother. To offset this, morphine and scopolamine, rectal anæsthesia, or analgesia, and a labor room free from baneful external stimuli, such as bright light, noise, or conversation, are the mainstays during the first stage. All internal examinations are made through the rectum. Rupture of the membranes is to be prevented, if possible, until the cervix is completely dilated. Expulsive efforts on the part of the patient, while not to be encouraged during the first stage of any labor, are here particularly to be condemned.

Usually the cervical canal, if given time enough, will spontaneously become completely effaced, and the os fully dilated. At times, however, the

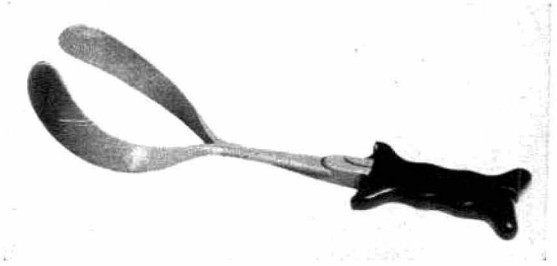
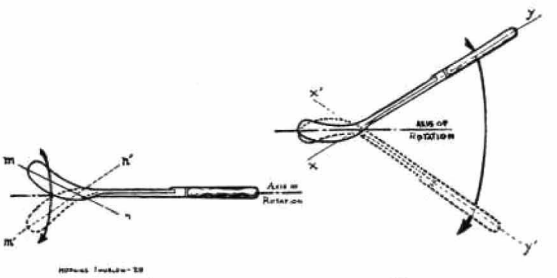


Fig. 1. Tucker-McLane forceps.



A. B.

Fig. 2. *A*. The wrong way. Twisting the instruments around the axis of the handles causes the tips of the blades to describe an arc within the pelvis, thus tearing the bladder and vagina loose from their attachments. *B*. The correct way. Rotation of the handles through an arc causes the blades to revolve about their own axes. Thus the integrity of the maternal soft parts is preserved.

colpeurynter, especially when the membranes have ruptured early, is indicated. Rarely, when progress has apparently ceased in spite of continued labor, what remains of a soft, readily dilatable cervix can be easily stretched by gentle manipulation. More rarely the rim of an incompletely dilated, rigid cervix must be incised, and repaired after delivery. To attempt delivery through an imperfectly dilated os is to invite complications far worse than that which already exists.

Operative treatment is seldom indicated before the advent of the second stage, and even then is frequently unnecessary, the occiput rotating spontaneously in over 70 per cent of the cases. A simple prophylactic forceps operation, with or without episiotomy, may then be considered optional.

Postural treatment (having the patient lie on the side toward which the fetal back is directed) for the correction of the faulty attitude and to bring about internal rotation, while a perfectly commendable procedure, is obviously difficult in a patient who is under the influence of anæsthesia, and who is therefore unable to co-operate.

In about 5 per cent of the cases the head, after complete dilatation, is found floating or is arrested high in the pelvis. For this small group, version followed by breech extraction, particularly in the multipara, is favored by most obstetricians, especially when intact membranes facilitate turning of the child.

In the 25 per cent remaining the head is found arrested at various levels within the pelvis, the occiput still occupying its relation to the posterior quadrant. For the treatment of this group, a number of methods have been suggested. All of them, in competent hands, are productive of good results. The principal aim of each of them is directed toward the same end, namely, rotation of an occiput posterior to an occiput anterior, while the means by which rotation is accomplished is either the hand of the accoucheur or the obstetrical forceps.

While it may be true that the best method is that one to which the operator has best trained himself, it is no less true that manual correction usually calls for the insertion of the whole hand into the vagina, with displacement of the head upward and out of the pelvis to secure the degree of internal rotation necessary. This procedure, however, increases the danger of infection and invites the possibility of prolapse of the cord. Even after rotation has been accomplished in this manner, backward rotation of the occiput, after the hand is withdrawn from the head and before the blades of the forceps can be applied, is an exasperating and frequent occurrence. DeLee recommends here the use of an Allis clamp, or of a double volsellum forceps, by which the scalp, after rotation, is firmly grasped and steadied by an assistant until the forceps can be applied.

The Pomeroy maneuver, recently described by Aranow, is manual rotation whereby the body of the baby is rotated on its own axis 180 degrees, thus bringing the sagittal suture back into the same oblique diameter of the pelvis. In this manner the right occipitoposterior position (occiput dextra posterior, 135 degrees) is converted into left occipitoanterior (occipito lævus, 45 degrees), or left occipitoposterior (occiput lævus posterior, 135 degrees) into right occipitoanterior (occiput dextra, 45 degrees).

The method of Tarnier and that of Hodge, both aim at correction of the malposition by intravaginal manipulation and digital pressure, without displacement of the head. Both methods sometimes produce the desired result.

Until comparatively recent years rotation was not included among the "properties," or "functions," of the forceps. Smellie, in 1752, was perhaps the first to perform instrumental rotation.

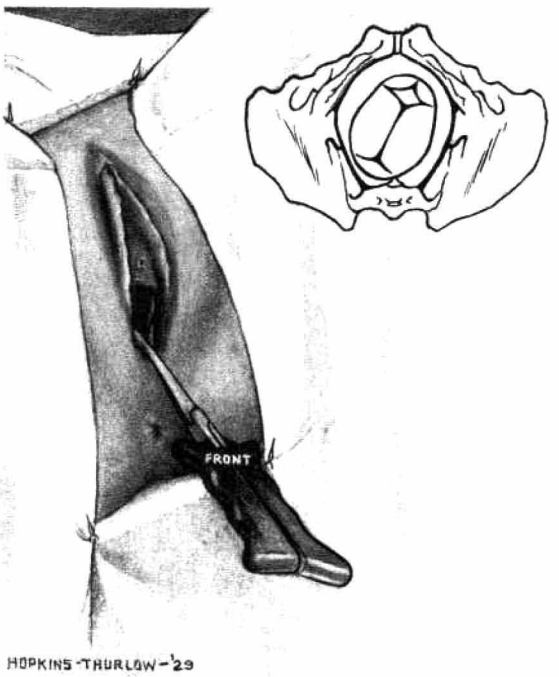


Fig. 3. The first application is the same as for the opposite anterior position.

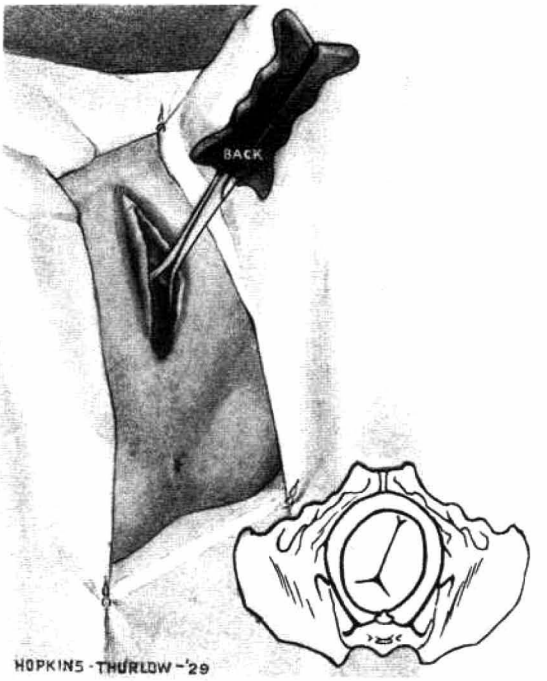


Fig. 4. Elevation of the handles to increase flexion and to free the head.

In 1865 Scanzoni devised a method of delivery whereby rotation and traction together were the principal features. It was after him that the original Scanzoni maneuver for the treatment of occipitoposterior positions derived its name. But rotation in these instances was doubtless imparted to the head by twisting of the handles of the forceps (Fig. 2A), for it was not until later (1881) that Tarnier brought forth the idea of sweeping the handles through a large circle to effect rotation of the head within the pelvis.

Needless to say, traction with rotation in the form of a spiral twist was not long popular, and, as a consequence of many serious injuries to the pelvic floor attributed to this operation, the Scanzoni procedure fell into disrepute.

It remained for Bill, of Cleveland, by the "modified" Scanzoni maneuver, to prove unmistakably that the forceps can properly and safely be used as a rotator, and that in this respect it is often superior to the hand in that the blades do not displace the head as does the hand. Indeed, to the accoucheur the forceps is but an extension of the hand and should be used as such in the performance of his art—much as the surgeon uses his knife or as one uses a pen with which to write. The instrument is but the agent through which the *hand* operates.

The technique of this operation is neither difficult nor dangerous. Properly executed it provides not only a beautiful obstetrical maneuver, but also a means by which may be avoided many of the unhappy results accredited to this position of the head.

It is necessary, first, that the attendant be familiar with the use of instruments and that all of the conditions governing the use of forceps be present. After the bladder is emptied the maternal soft parts are carefully prepared by the liberal use of a neutral liquid soap, which not only assists in "ironing out" the pelvic passageway, but acts as an ideal lubricant for the passenger as well. The exact position of the head is then carefully determined, the posterior ear being located if necessary.

The choice of forceps depends upon the operator. Those commonly preferred are the Tucker-McLane variety (Fig. 1), solid blades with a long shank. The reason for this preference lies in the ease of their introduction, rotation, and withdrawal, which renders their selection ideal for this operation.

The first application is made exactly as for the opposite anterior position. For right occipitoposterior (occiput dextra posterior, 135 degrees) the first application, then, would be as for left

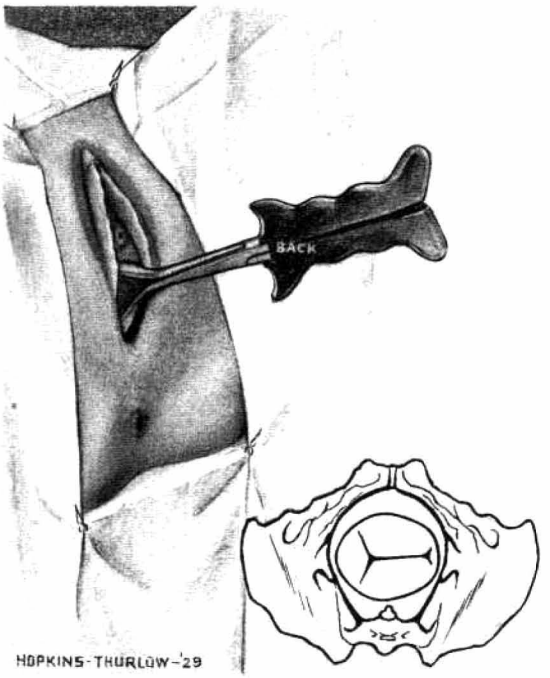


Fig. 5. Rotation to right occiput transverse. No traction.

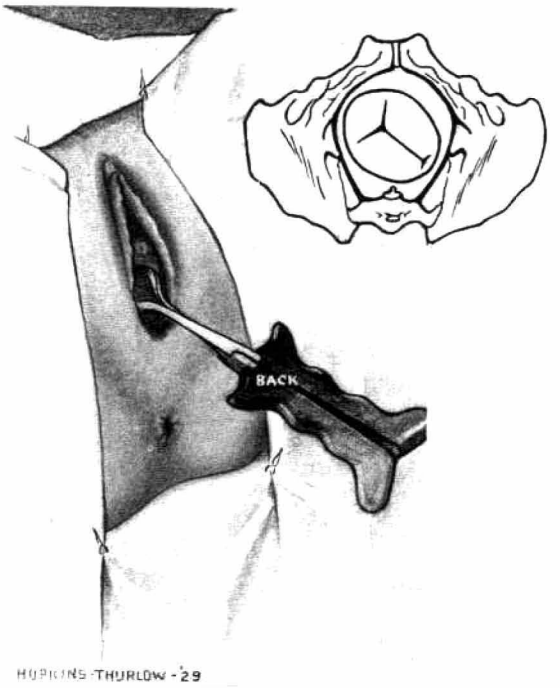


Fig. 6. Rotation to right occiput anterior. No traction. The handles describe a wide arc.

occipito-anterior (occiput lævus, 45 degrees), the pelvic curve of the forceps in the initial application thus being directed toward the baby's forehead. An accurate cephalic application is essential to avoid slipping of the blades during rotation (Fig. 3).

The forceps are now locked. To increase flexion and to free the head from the grasp of the soft parts the handles, gently compressed, are carried to the patient's thigh toward which the baby's face is directed. In this movement the handles traverse a line parallel with that of the sagittal suture (Fig. 4).

From this point rotation is accomplished with a gentle sweeping motion, the handles describing a large arc, thus keeping the blades in approximately the same axis (Fig. 2, B). The fingers of the free hand, meanwhile, are touching the occiput, to apprise the operator of the degree of anterior rotation. Rotation is continued until the occiput, passing through the transverse and the anterior positions, finally occupies the directly anterior, or zero, position, and the handles of the forceps, inverted, become directed toward the floor (Figs. 5, 6 and 7). No traction has been employed up to this point. The head has rotated in the same plane it occupied at the beginning of the maneuver, and only the abnormality of position has been corrected. Excessive force to accomplish rotation is contra-indicated.

To overcome backward rotation of the occiput slight traction toward the floor is now exerted upon the inverted handles. This fixes the head in its new position before the second application is made.

In the re-application of the forceps, the posterior blade is inserted first. This aids in steadying the head and preventing its displacement during the application of the anterior blade.

The pelvic curve of the instruments now is directed toward the occiput.

The remainder of the delivery is completed exactly as that of any other occipito-anterior position.

The use of the forceps to accomplish delivery in cases of posterior position has become increasingly popular. Special types of blades, as the Kjelland forceps, have been devised. Seides, emulating Bill, introduced his "two-forceps maneuver," while later DeLee described his "key-in-lock" operation.

It may not be amiss here to add that "not force, but art" is the prerequisite to every obstetrical procedure. The untutored hand reflects its lack of skill in dead or mutilated children,

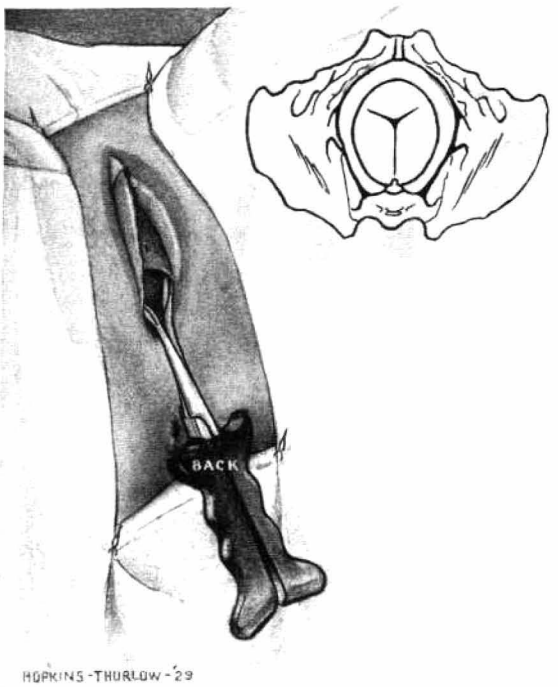


Fig. 7. Rotation to the zero completed. Traction at this point to fix the head before the re-application.

and in extensive damage to the birth canal. The excellent survey of Douglas Miller reveals 2 cases of fracture of the parietal bone and 7 dead children after forceps rotation and delivery in 35 cases! To employ such force as is required to fracture an infant's skull is reprehensible, to say the least. Since failure of the head in the posterior position to descend spontaneously is usually due to the faulty position, forcible traction upon such a head, to bring it to a lower pelvic plane before rotation, is also reprehensible.

CONCLUSIONS

1. The diagnosis of position is essential to the proper management of any labor.

2. Occipitoposterior positions, if neglected, cause increased fetal mortality and maternal morbidity.

3. Usually during the first stage of labor in these cases, interference is not indicated except for conservative treatment for the support of the patient.

4. In the second stage rotation of the occiput manually or by means of forceps is often necessary to complete the delivery.

5. The modified Scanzoni maneuver, if more thoroughly understood, offers here certain advantages over other methods of delivery.

REFERENCES

ARANOW, H. The Pomeroy maneuver. New York State J. Med., 1926, xxvi, 961.

BILL, A. H. The modified Scanzoni maneuver. Am. J. Obst. & Gynec., 1925, ix, 342.

DELEE, J. B. Principles and Practice of Obstetrics, 4th ed. also Am. J. Obst., 1918, lxxviii, 791.

EISENBERG, C. The Kjelland forceps. Med. Klin., xx, 1694.

Idem. The treatment of occiput posterior position after engagement of the head. Surg., Gynec. & Obst., 1928, xlvi, 696.

JARCHO, J. The rôle of posture in obstetrics. Surg., Gynec. & Obst., 1929, xlviii, 257.

MILLER, D. A survey of 750 cases of occipitoposterior positions. Tr. Edinburgh Obst. Soc., session lxxxvi, 1927, p. 77.

SEIDES, S. A "two-forceps manœuvre." Surg., Gynec. & Obst., 1923, xxxvi, 421.

WILLIAMS, J. W. Textbook of Obstetrics, 3d ed.