

Manual rotation of the fetal head from an occiput posterior (OP) to an occiput anterior position using 4 fingers and thumb. In this figure, the fetal head is in a left OP position. The clinician's right hand is pronated and inserted into the vagina, palm up. Four fingers are placed under the posterior parietal bone with the thumb over the anterior parietal bone. The operator uses the fingers and thumb to flex and rotate the head to the right as shown by the green arrow, moving the fetal occiput into an anterior pelvic quadrant. If the head was in the right OP position, the left hand is used to rotate the head. The nonvaginal hand can be placed on the maternal abdominal wall to assess the fetal spine position as the fetal head is rotated.

ILLUSTRATION: KIMBERLY MARTENS FOR OBG MANAGEMENT

What is your approach to the persistent occiput posterior malposition?

One of the peskiest problems in labor obstetrics is the persistent OP position



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CASE 7- to 8-lb baby suspected to be in occiput posterior (OP) position

A certified nurse midwife (CNM) asks you to consult on a 37-year-old woman (G1P0) at 41 weeks' gestation who was admitted to labor and delivery for a late-term induction. The patient had a normal first stage of labor with placement of a combined spinal-epidural anesthetic at a cervical dilation of 4 cm. She has been fully dilated for 3.5 hours and pushing for 2.5 hours with a Category 1 fetal heart rate tracing. The CNM reports that the estimated fetal weight is 7 to 8 lb and the station is +3/5. She suspects that the fetus is in the left OP position. She asks for your advice on how to best deliver the fetus. The patient strongly prefers not to have a cesarean delivery (CD).

What is your recommended approach?

The cardinal movements of labor include cephalic engagement, descent, flexion, internal rotation, extension and rotation of the head at delivery, internal rotation of the shoulders, and expulsion of the body. In the first stage of labor many fetuses are in the OP position.

Flexion and internal rotation of the fetal head in a mother with a gynecoid pelvis results in most fetuses assuming an occiput anterior (OA) position with the presenting diameter of the head (occipitobregmatic) being optimal for spontaneous vaginal delivery. Late in the second stage of labor only about 5% of fetuses are in the OP position with the presenting diameter of the head being large (occipitofrontal) with an extended head attitude, thereby reducing the probability of a rapid spontaneous vaginal delivery.

Risk factors for OP position late in the second stage of labor include^{1,2}:

- nulliparity
- body mass index > 29 kg/m²
- gestation age ≥ 41 weeks
- birth weight > 4 kg
- regional anesthesia.

Maternal outcomes associated with persistent OP position include protracted first and second stage of labor, arrest of second stage of labor, and increased rates of operative vaginal delivery, anal sphincter injury, CD, postpartum hemorrhage, chorioamnionitis, and endomyometritis.^{1,3,4} The neonatal compli-

cations of persistent OP position include increased rates of shoulder dystocia, low Apgar score, umbilical artery acidemia, meconium, and admission to a neonatal intensive care unit.^{1,5}

Diagnosis

Many obstetricians report that they can reliably detect a fetus in the OP position based upon abdominal palpation of the fetal spine and digital vaginal examination of the fetal sutures, fontanelles, and ears. Such self-confidence may not be wholly warranted, however. Most contemporary data indicate that digital vaginal examination has an error rate of approximately 20% for identifying the position of the cephalic fetus, especially in the presence of fetal caput succedaneum and asynclitism.⁶⁻¹⁰

The International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) recommends that cephalic position be determined by transabdominal imaging.¹¹ By placing the ultrasound probe on the maternal abdomen, a view of the fetal body at the level of the chest helps determine

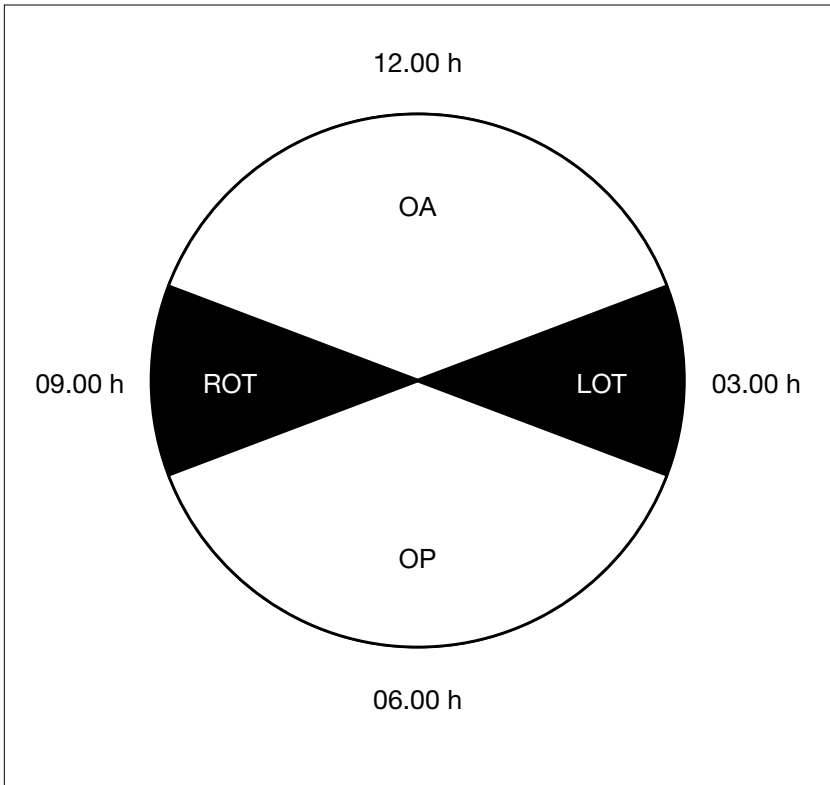


FIGURE International Society of Ultrasound in Obstetrics and Gynecology–recommended classification of fetal position based on positions of the hour on a clock face. Occiput positions from 03.30 h to 08.30 h are indicative of an occiput posterior (OP) position. Positions from 09.30 h to 02.30 h are indicative of an occiput anterior (OA) position. The remaining small 1-hour slivers on the left and right side of the clock face represent occiput transverse (LOT; ROT) positions.

Source: Ghi T, Eggebo T, Lees C, et al. ISUOG practice guidelines: intrapartum ultrasound. *Ultrasound Obstet Gynecol.* 2018;52:128-139. Used with permission.

the position of the fetal spine. When the probe is placed in a suprapubic position, the observation of the fetal orbits facing the probe indicates an OP position.

When the presenting part is at a very low station, a transperineal ultrasound may be helpful to determine the position of the occiput. The ISUOG recommends that position be defined using a clock face, with positions from 330 h to 830 h being indicative of OP and positions from 930 h to 230 h being indicative of OA.¹¹ The small remaining slivers on the clock face indicate an occiput transverse position (**FIGURE**).¹¹

Approaches to managing the OP position

First stage of labor

Identification of a cephalic-presenting fetus in the OP position in the first stage of labor might warrant increased attention to fetal position in the second stage of labor, but does not usually alter management of the first stage.

Second stage of labor

If an OP position is identified in the second stage of labor, many obstetricians will consider manual rotation of the fetal occiput to an anterior pelvic quadrant to facilitate labor progress.

Because a fetus in the OP position may spontaneously rotate to the OA position at any point during the second stage, a judicious interval of waiting is reasonable before attempting a manual rotation in the second stage. For example, allowing the second stage to progress for 60 to 90 min in a nulliparous woman or 30 to 60 min in a multiparous woman will permit some fetuses to rotate to the OA position without intervention.

If the OP position persists beyond these time points, a manual rotation could be considered. There are no high-quality clinical trials to support this maneuver,¹² but observational reports suggest that this low-risk maneuver may help reduce the rate of CD and anal sphincter trauma.¹³⁻¹⁵

Manual rotation from OP to OA.

Prior to performing the rotation, the maternal bladder should be emptied and an adequate anesthetic provided. One technique is to use the 4 fingers of the hand as a “spatula” to turn the head. If the fetus is in a left OP position, the operator’s right hand is pronated and inserted into the vagina, palm up. Four fingers are placed under the posterior parietal bone with the thumb over the anterior parietal bone (**ILLUSTRATION**, page 10).⁴ The operator uses the fingers and thumb to flex and rotate the head to the right, moving the fetal occiput into an anterior pelvic quadrant.⁴ If the head is in the right OP position, the left hand is used to rotate the head. The nonvaginal hand can be placed on the maternal abdominal wall to assess the fetal spine position as the fetal head is rotated. The fetal head may need to be held in the anterior pelvic quadrant during a few maternal pushes to prevent the head from rotating back into the OP position.

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Approaching delivery late in the second stage

If the second stage has progressed for 3 or 4 hours, as in the case described above, and the fetus remains in the OP position, delivery may be indicated to avoid the maternal and fetal complications of an even more prolonged second stage. At some point in a prolonged second stage, expectant management carries more maternal and fetal risks than intervention.

Late in the second stage, options for delivery of the fetus in the OP include: CD, rotational forceps delivery, direct forceps delivery from the OP position, and vacuum delivery.

Cesarean delivery. CD of the fetus in the OP position may be indicated when the fetus is estimated to be macrosomic, the station is high (biparietal diameter palpable on abdominal examination), or when the parturient has an android pelvis (narrow fore-pelvis and anterior convergence of the pelvic bone structures in a wedge shape). During CD, if difficulty is encountered in delivering the fetal head, a hand from below, extension of the uterine incision, or reverse breech extraction may be necessary to complete the delivery. If the clinical situation is conducive to operative vaginal delivery, forceps or vacuum can be used.

Rotational forceps delivery. During residency I was told to always use rotational forceps to deliver a fetus in the persistently OP position if the parturient had a gynecoid pelvis (wide oval shape of pelvic bones, wide subpubic arch). Dr. Frederick Irving wrote¹⁶:

“Although textbooks almost universally advocate the extraction of the occiput directly posterior without rotation we do not advise it.... Such an extraction maneuver is inartistic and show[s] a lack of regard for the

mechanical factors involved in the mechanism of labor. The method used at the Boston Lying-In Hospital presupposes an accurate diagnosis of the primary position. If the fetal back is on the right the head should be rotated to the right; if on the left, toward the left. The head is always rotated in the direction in which the back lies. The forceps are applied as if the occiput was directly anterior. Carrying the forceps handles in a wide sweep the occiput is now rotated to the anterior quadrant of the pelvis or 135 degrees. It will be found that the head turns easily in the way it should go but that it is difficult or impossible to rotate it in the improper direction. The instrument is then reapplied as in the second part of the Scanzoni maneuver.”

Rotation of the fetus from the OP to the OA position may reduce the risk of sphincter injury with vaginal birth. With the waning of rotational forceps skills, many obstetricians prefer a nonrotational approach with direct forceps or vacuum delivery from the OP position.

Direct forceps delivery from the OP position. A fetus in the OP position for 3 to 4 hours of the second stage of labor will often have a significant degree of head molding. The Simpson forceps, with its shallow and longer cephalic curve, accommodates significant fetal head molding and is a good forceps choice in this situation.

Vacuum delivery. In the United States, approximately 5% of vaginal deliveries are performed with a vacuum device, and 1% with forceps.¹⁷ Consequently, many obstetricians frequently perform operative vaginal delivery with a vacuum device

and infrequently or never perform operative vaginal delivery with forceps. Vacuum vaginal delivery may be the instrument of choice for many obstetricians performing an operative delivery of a fetus in the OP position. However, the vacuum has a higher rate of failure, especially if the OP fetus is at a higher station.¹⁸

In some centers, direct forceps delivery from the OP position is preferred over an attempt at vacuum delivery, because in contemporary obstetric practice most centers do not permit the sequential use of vacuum followed by forceps (due to the higher rate of fetal trauma of combination operative delivery). Since vacuum delivery of the fetus in the OP position has a greater rate of failure than forceps, it may be best to initiate operative vaginal delivery of the fetus in the OP position with forceps. If vacuum is used to attempt a vaginal delivery and fails due to too many pop-offs, a CD would be the next step.

Take action when needed to optimize outcomes

The persistent OP position is associated with a longer second stage of labor. It is common during a change of shift for an obstetrician to sign out to the on-coming clinician a case of a prolonged second stage with the fetus in the OP position. In this situation, the on-coming clinician cannot wait hour after hour after hour hoping for a spontaneous delivery. If the on-coming clinician has a clear plan of how to deal with the persistent OP position—including ultrasound confirmation of position and physical examination to determine station, fetal size and adequacy of the pelvis, and timely selection of a delivery technique—the adverse maternal and neonatal outcomes sometimes

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caused by the persistent OP position will be minimized.

CASE Resolved

The consulting obstetrician performed a transabdominal ultrasound and observed the fetal orbits were facing the transducer, confirming an OP position. On physical examination, the station was +3/5, and the fetal weight was confirmed to be approximately 8 lb.

The obstetrician recommended a direct forceps delivery from the OP position. The patient and CNM agreed with the plan.

The obstetrician applied Simpson forceps and performed a mediolateral episiotomy just prior to delivery of the head. Following delivery, the rectal sphincter and anal mucosa were intact and the episiotomy was repaired. The newborn, safely delivered, and the

mother, having avoided a CD, were transferred to the postpartum floor later in the day. ●



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