

Intractable shoulder dystocia: A posterior axilla maneuver may save the day

My preferred posterior axilla maneuver is the Menticoglu maneuver. Here, a look at your options and steps to delivery.

Robert L. Barbieri, MD

Shoulder dystocia is an unpredictable obstetric emergency that challenges all obstetricians and midwives. In response to a shoulder dystocia emergency, most clinicians implement a sequence of well-practiced steps that begin with early recognition of the problem, clear communication of the emergency with delivery room staff, and a call for help to available clinicians. Management steps may include:

1. instructing the mother to stop pushing and moving the mother's buttocks to the edge of the bed
2. ensuring there is not a tight nuchal cord
3. committing to avoiding the use of excessive force on the fetal head and neck
4. considering performing an episiotomy
5. performing the McRoberts maneuver combined with suprapubic pressure
6. using a rotational maneuver, such as the Woods maneuver or the Rubin maneuver

7. delivering the posterior arm
8. considering the Gaskin all-four maneuver.

When initial management steps are not enough

If this sequence of steps does not result in successful vaginal delivery, additional options include: clavicle fracture, cephalic replacement followed by cesarean delivery (Zavanelli maneuver), symphysiotomy, or fundal pressure combined with a rotational maneuver. Another simple intervention that is not discussed widely in medical textbooks or taught during training is the posterior axilla maneuver.

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Posterior axilla maneuvers

Varying posterior axilla maneuvers have been described by many expert obstetricians, including Willughby (17th Century),¹ Holman (1963),² Schramm (1983),³ Menticoglu (2006),⁴ and Hofmeyr and Cluver (2009, 2015).⁵⁻⁷

Willughby maneuver

Percival Willughby's (1596–1685) description of a posterior axilla maneuver was brief¹:

After the head is born, if the child through the greatness of the shoulders, should stick at the neck, let the midwife



Dr. Barbieri is Editor in Chief, OBG MANAGEMENT; Chair, Obstetrics and Gynecology, Brigham and Women's Hospital; and Kate Macy Ladd Professor of Obstetrics, Gynecology, and Reproductive Biology, Harvard Medical School, Boston, Massachusetts.

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Use ACOG's checklist for documenting a shoulder dystocia

Following the resolution of a shoulder dystocia, it is important to gather all the necessary facts to complete a detailed medical record entry describing the situation and interventions used. The checklist from the American College of Obstetricians and Gynecologists (ACOG) helps you to prepare a standardized medical record entry that is comprehensive.

My experience is that “free form” medical record entries describing the events at a shoulder dystocia event are generally not optimally organized, creating future problems when the case is reviewed.

ACOG obstetric checklists are available for download at <http://www.acog.org/resources>, or use your web browser to search for “ACOG Shoulder Dystocia checklist.”

put her fingers under the child’s armpit and give it a nudge, thrusting it to the other side with her finger, drawing the child or she may quickly bring forth the shoulders, without offering to put it forth by her hands clasped about the neck, which might endanger the breaking of the neck.

Holman maneuver

Holman described a maneuver with the following steps²:

1. perform an episiotomy
2. place a finger in the posterior axilla and draw the posterior shoulder down along the pelvic axis
3. simultaneously have an assistant perform suprapubic pressure and
4. if necessary, insert two supinated fingers under the pubic arch and press and rock the anterior shoulder, tilting the anterior shoulder toward the hollow of the sacrum while simultaneously gently pulling the posterior axilla along the pelvic axis.

Schramm maneuver

Schramm, working with a population enriched with women with diabetes, frequently encountered shoulder dystocia and recommended³:

If the posterior axilla can be reached—in other words, if the posterior shoulder is engaged—in my experience it can always be delivered by rotating it to the

anterior position while at the same time applying traction....I normally place 1 or 2 fingers of my right hand in the posterior axilla and “scruff” the neck with my left hand, applying both rotation and traction. Because this grip is somewhat insecure, the resultant tractive force is limited and I consider this manoeuvre to be the most effective and least traumatic method of relieving moderate to severe obstruction.

Menticoglou maneuver

Menticoglou noted that delivery of the posterior arm generally resolves almost all cases of shoulder dystocia. However, if the posterior arm is extended and trapped between the fetus and maternal pelvic side-wall, it may be difficult to deliver the posterior arm. In these cases he recommended having an assistant gently hold, not pull, the fetal head upward and, at the same time, having the obstetrician get on one knee, placing the middle fingers of both hands into the posterior axilla of the fetus.⁴

The right middle finger is placed into the axilla from the left side of the maternal pelvis, and the left middle finger is placed into the axilla from the right side of the maternal pelvis, resulting in the two middle fingers overlapping in the fetal axilla (**FIGURE**, page 20).⁴ Gentle force is then used to pull the posterior shoulder and arm downward and outward along the curve of the sacrum. Once the shoulder has emerged from the pelvis, the posterior arm is delivered. Alternatively, if the posterior shoulder is brought well down into the pelvis, another attempt can be made at delivering the posterior arm.⁴

My preferred approach. The Menticoglou maneuver is my preferred posterior axilla maneuver because it can be accomplished rapidly; requires no equipment, such as a sling catheter; and the obstetrician has good tactile feedback throughout the application of gentle force.

Hofmeyr-Cluver maneuver

In cases of difficult shoulder dystocia, Dr. William Smellie (1762)⁸ recommended placing one or two fingers in the anterior or

FAST TRACK

An advantage of the Menticoglou maneuver is that it does not need additional equipment, and therefore can be performed quickly

Practice your shoulder dystocia maneuvers using simulation

Obstetric emergencies trigger a rush of adrenaline and great stress for the obstetrician and delivery room team. This may adversely impact motor performance, decision making, and communication skills.¹ Low- and high-fidelity simulation exercises create an environment in which the obstetrics team can practice the sequence of maneuvers and seamless teamwork needed to successfully resolve a shoulder dystocia.^{2,3} Implementing a shoulder dystocia protocol and practicing the protocol using team-based simulation may help to reduce the adverse outcomes of shoulder dystocia.^{3,4}

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Manipulation of the posterior axilla



The right and left third fingers are locked into the posterior axilla, one finger from the front and one from the back of the fetus. Gentle downward guidance is provided by the fingers to draw the posterior shoulder down and out along the curve of the sacrum, thus releasing the anterior shoulder.⁴ In this drawing, an assistant gently holds the head up.

posterior fetal axilla and gently pulling on the axilla to deliver the body. If the axillae were too high to reach, he recommended using a blunt hook in the axilla to draw forth the impacted child. He advised caution when using a blunt hook because the fetus might be injured or lacerated.

Instead of using a hook, Hofmeyr and Cluver^{5–7} have recommended using a catheter sling to deliver the posterior shoulder. In this maneuver, a loop of a suction catheter or firm urinary catheter is placed over the obstetrician's index finger and the loop is pushed through the posterior axilla, back to front, with guidance from the index finger. The index finger of the opposite hand is used to catch the loop and pull the catheter through, creating a single-stranded sling that is positioned in the axilla. Gentle force is then applied to the sling in the axis of the pelvis to deliver the posterior shoulder.

"If the posterior arm does not follow it is then swept out easily because room has been created by delivering the posterior shoulder. If the aforementioned procedure fails, the sling can be used to rotate the shoulder. To perform a rotational maneuver, sling traction is directed laterally towards the side of the baby's back then anteriorly while digital pressure is applied behind the anterior shoulder to assist rotation."⁷

With scant literature, know the benefits and risks

The world's literature on posterior axilla maneuvers to resolve shoulder dystocia consists of case series and individual case reports.^{2–7} Hence, the quality of the data supporting this intervention is not optimal, and risks associated with the maneuver are not well characterized. Application of a controlled and gentle force to the posterior axilla may cause fracture of the fetal humerus⁵ or dislocation of the fetal shoulder. The posterior axilla maneuver also may increase the risk of a maternal third- or fourth-degree perineal laceration.

As a general rule, as the number of maneuvers used to resolve a difficult shoulder dystocia increase, the risk of neonatal injury

increases.⁹ Since the posterior axilla maneuver typically is only attempted after multiple previous maneuvers have failed, the risk of fetal injury is increased. However, as time passes and a shoulder dystocia remains unresolved for 4 or 5 minutes, the risk of neurologic injury and fetal death increases.¹⁰

In resolving a shoulder dystocia, speed and skill are essential. A posterior axilla maneuver can be performed more rapidly than a Zavanelli maneuver or a symphysiotomy. Although manipulation of the posterior axilla and arm may cause a fracture of the humerus, this complication is a modest price to pay for preventing permanent fetal brain injury or fetal death. ☈

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Tell us...

What are your preferred approaches to resolving the difficult shoulder dystocia?

Send your letter to the editor to
OBG MANAGEMENT:

- Email rbarbieri@frontlinemedcom.com
- Send your letter to:
7 Century Drive, Suite 302
Parsippany, NJ 07054
- Fax us at 973-206-9251