ESW

EMERGENCY SKILLS WORKSHOP

MANUAL

Association of Ontario Midwives

Delivering what matters.

7TH EDITION: 2021

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*Note: This list includes professional designations only.

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6. SHOULDER DYSTOCIA

DEFINITION

While there is no universally agreed-upon definition of shoulder dystocia, it is commonly defined as the inability of the fetal shoulders to deliver spontaneously or in response to gentle upward or downward flexion on the head. (1–5) Shoulder dystocia occurs when the fetal anterior shoulder becomes impacted behind the symphysis pubis or the fetal posterior shoulder becomes impacted on the sacral promontory of the pelvis. (1,3,6–8) Rarely, shoulder dystocia occurs when both shoulders are stuck above the pelvic brim. (5,9)

INCIDENCE

Research suggests that shoulder dystocia occurs in approximately 0.6% to 1.4% of all spontaneous births. (1) Incidence of shoulder dystocia is increased by fetal macrosomia (birth weight > 4000 g). (4,10,11) Recent studies (5,12) estimate that rates of shoulder dystocia during a cephalic spontaneous birth are:

- < 4000 g: 1%
- 4000 to 4500 g: 5%
- 4500 to 5000 g: 10%
- > 5000 g: 20%

ASSOCIATED FACTORS

It is estimated that approximately half of shoulder dystocia cases occur in the absence of risk factors. (2,4,5,13,14) Therefore, midwives should be prepared at every birth. (15)

Research studies have, however, identified factors that increase the likelihood that shoulder dystocia will occur. As these factors are not reliable predictors of shoulder dystocia, the factors described below in Table 6.1 can only provide a higher index of suspicion. (2,4,6,10,14,16–18)

Table 6.1 Associated factors for shoulder dystocia

Pregnant person	Notes
Prior shoulder dystocia	• Estimated rate of recurrence in subsequent pregnancy ranges from 1%-35%, median 13%. (19,20)
Poorly controlled diabetes	• Associated with an increased risk of macrosomia. Babies born to people with poorly controlled diabetes are also at a significantly higher risk of shoulder dystocia than babies of comparable weight born to non-diabetic people.
Obesity	
> 20 kg weight gain during pregnancy	
Fetal	**Notes**
Suspected macrosomia	• Large shoulder or chest circumference relative to biparietal diameter; greater body fat.
Postdates pregnancy	• Associated with increased risk of macrosomia.
Intrapartum	**Notes**
Precipitous labour	• Rotation of the shoulders to an oblique diameter may not occur with the birth of the head.
Prolonged labour/prolonged second stage	• May not be causally related to the occurrence of shoulder dystocia, but markers of a difficult birth.
Induction/oxytocin augmentation	
Epidural anesthesia	
Assisted birth	

Adapted (1,4–7,14,21–25)

While the relative risk of shoulder dystocia increases with birth weight (especially if diabetes is present and is poorly controlled) (6,26), suspected macrosomia is not a clinically useful antenatal predictor of shoulder dystocia. (10) It is notoriously difficult to predict birth weight prenatally; prediction through clinical estimation or ultrasound scanning has a poor record of success. (2,4,27–30) Furthermore, a majority of macrosomic infants do not develop shoulder dystocia and approximately 40% to 60% of shoulder dystocia cases occur in infants < 4000 g. (1,6,12,14)

ASSOCIATED COMPLICATIONS

Brachial plexus injury occurs in about 10% to 20% of shoulder dystocia cases, due to the clinician's application of excessive downward lateral traction on the fetal head while trying to free an impacted anterior shoulder. (5) However, a significant proportion of brachial plexus injuries (up to 50% in some studies) occur in the absence of shoulder dystocia. (6,23,31–34)

Table 6.2 Associated complications of shoulder dystocia for the pregnant person

Pregnant person	Estimated incidence in births complicated by shoulder dystocia
Vaginal laceration	19.3%
Postpartum hemorrhage	11%
Extension of episiotomy or laceration into the rectum	3.8%
Cervical tears	2%
Uterine rupture	Very rare

Adapted (14,17,35–38)

Table 6.3 Associated complications of shoulder dystocia for the fetus

Fetal	Estimated incidence in births complicated by shoulder dystocia *(range found among studies)*
Transient brachial plexus palsy	1%-16.8%
Clavicle fracture	0%-9.5%
Humeral fracture	0%-4.2%
Permanent brachial plexus palsy	0%-1.6%
Hypoxia and/or asphyxia	Very rare
Hypovolemic shock	Very rare
Hypoxic ischemic encephalopathy	Very rare
Death	Very rare

Adapted (5,14,17,35,38–41)

NORMAL MECHANISM OF SHOULDER DELIVERY

The shoulders enter the pelvis in an oblique diameter in most births. After the birth of the head, the shoulders rotate toward the anterior-posterior diameter of the pelvis, aligning the widest diameter of the shoulders with the widest diameter of the pelvis. Without intervention, most births typically occur in two steps: the fetal head is born, then there is usually a physiological pause, and the body of the infant is born with the next contraction (see Key Concepts).

Shoulder dystocia occurs when the fetal anterior shoulder becomes impacted against the birthing person's symphysis pubis or the fetal posterior shoulder becomes impacted on the sacral promontory. (6)

IDENTIFICATION OF SHOULDER DYSTOCIA

- The fetal head may emerge slowly, and the chin may have difficulty sliding over the perineum.
- The fetal chin and head may retract against the perineum ("turtle sign").
- Restitution rarely takes place spontaneously.
- Cyanosis of the fetal head may also be present.
- Shoulder dystocia should be considered when the birthing person's expulsive effort and typical manoeuvres used by the midwife (i.e., gentle lateral flexion of the head to release either the anterior shoulder and/or the posterior shoulder) fail to deliver the shoulders with the next contraction.
- In a healthy fetus with a normal fetal heart rate during labour, a "physiologic pause" between the birth of the head and the next contraction allows restitution to complete and the shoulders to rotate, which may help prevent a shoulder dystocia. During this time, in the absence of pushing, the uterus is relaxed and fetal brain perfusion is maintained. (5,9,42,43)

MANAGEMENT OF SHOULDER DYSTOCIA

Communication

- Inform client, support person and second midwife or attendant of the emergency.
- Call for help once shoulder dystocia is encountered.
- Inform client to assist with position change and NOT to push during manoeuvres to resolve the shoulder dystocia.
- Ask second midwife/attendant to take note of and communicate the time elapsed and help with manoeuvres as needed.

Delivery of the Shoulders

- Perform McRoberts manoeuvre and apply suprapubic pressure to facilitate delivery of shoulders. The birthing person's position should be as flat as possible at the end of the bed and/or the buttocks elevated through the use of a fracture pan.
- Call for help.
- Perform additional manoeuvres:
    - The midwife should use clinical judgment in deciding on the order of manoeuvres; choice will often be influenced by initial client position (see Key Concepts).
    - Take advantage of pelvic geometry: be aware of the physiology of the client's pelvis and note if there are areas where there is more "space" and target manoeuvres accordingly. (44)
- It may be helpful for some to follow a mnemonic and move through manoeuvres systematically.
- If a manoeuvre is not successful, the midwife should move promptly from one manoeuvre to the next. After each manoeuvre, an attempt should be made to deliver the baby using gentle lateral flexion and client effort.
- Pulling on the head and excessive traction is a known cause of brachial plexus injury and should be avoided.

In a shoulder dystocia, where fetal brain circulation is impeded by uterine contractions and Valsalva manoeuvre efforts, the risk of hypoxic ischemic encephalopathy is thought to increase when there is a head-to-body birth interval greater than 5 minutes. (42)

Mnemonic for Shoulder Dystocia

A mnemonic assists caregivers in acting effectively in a stressful situation. As effective management of shoulder dystocia frequently depends on a quick and coordinated team response, there are benefits to using the same mnemonic in interprofessional teams involved in hospital-based births, to avoid confusion and streamline practice. A commonly used mnemonic learned by midwives, nurses and physicians in Canada is ALARMER. (5)

Steps and manoeuvres	
A	Ask for help
L	Lift legs: *McRoberts*
A	Anterior shoulder disimpaction: *Suprapubic pressure and/or Rubin*
R	Rotation: *Woods' screw*
M	Manual removal of posterior arm: *Delivery of posterior arm and/or axillary traction*
E	Episiotomy
R	Roll over to all fours: *Gaskin*

MANOEUVRES (3,5,6,8,17,23,45–52)

McRoberts Manoeuvre	
Description	• With the client lying flat, hyperflex the thighs onto the abdomen, simulating a squatting position. • This is best done by two assistants; each person grasps a leg and hyperflexes the thigh against the abdomen.
Mechanism of action	• Aids delivery by straightening the sacrum relative to the lumbar spine. • Removes the sacral promontory as an obstacle creating more room for descent, and affects the angle of the symphysis pubis superiorly to increase the bispinous diameter. (8)
Notes	• This technique most often works with little injury.
Suprapubic Pressure (Mazzanti Manoeuvre)	
Description	• To perform this manoeuvre correctly, the client is instructed to stop pushing. • The fetal back is identified. • An assistant places the heel of their hand above the pubic symphysis and presses the scapula of the fetal anterior shoulder directly down and laterally, away and under the pubic symphysis. • This may dislodge and adduct the anterior shoulder toward the fetal chest, allowing the shoulders to enter the pelvis in an oblique diameter. • The client is then instructed to push and, simultaneously, gentle lateral flexion is applied to the fetal head to deliver the anterior shoulder.
Mechanism of action	• Reduces the fetal bisacromial (shoulder to shoulder) diameter by changing the shoulders from a position of abduction to adduction.
Notes	• Usually performed in combination with McRoberts manoeuvre. • The attendant must ideally be able to identify the posterior aspect of the fetal shoulder. • The attendant requires height to apply the appropriate amount of downward pressure; the bed must be low, or there must be a stool to stand on. • It may be helpful to apply a rocking pressure to the fetal shoulder, as if performing CPR chest compressions.

Rubin Manoeuvre	
Description	• To perform this manoeuvre correctly, the client is instructed to stop pushing. • The attendant inserts two to four fingers of one hand into the vagina, placing them behind the shoulder that is most easily found, pushing the posterior aspect of the shoulder toward the fetal chest. • The pushing action may dislodge and adduct the shoulders, allowing them to enter the pelvis in an oblique diameter (Figure 6.1). • The client is instructed to push and, simultaneously, gentle lateral flexion is applied to the fetal head to deliver the anterior shoulder.
Mechanism of action	• Reduces the fetal bisacromial diameter by changing the shoulders from a position of abduction to adduction (Figure 6.2A and 6.2B).
Notes	• This manoeuvre has the same effect as applying suprapubic pressure, but it is an internal action, rather than an external one.

***Figure 6.1* Rubin Manoeuvre**

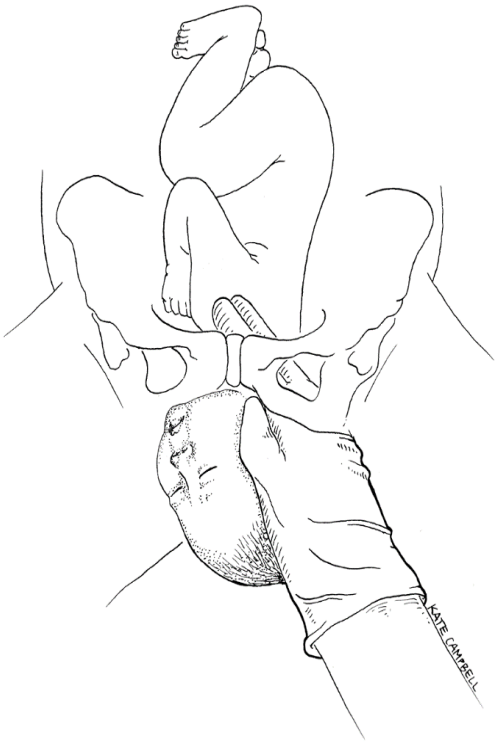


***Figure 6.2A* Rubin Manoeuvre**

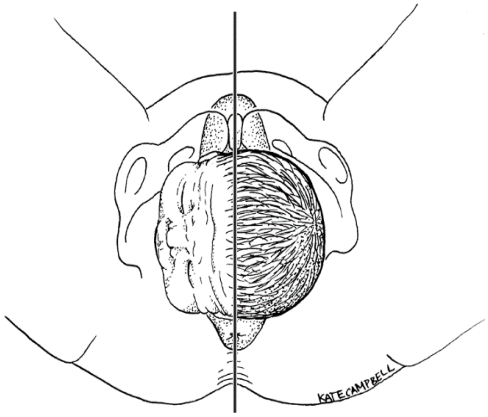
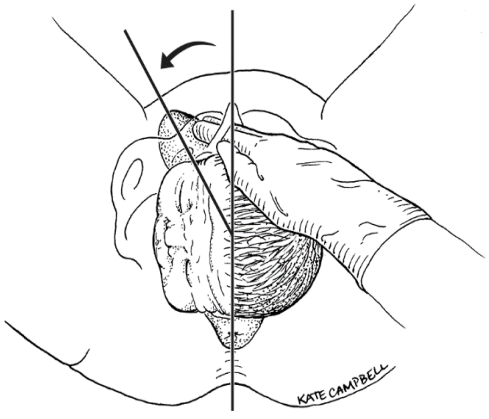
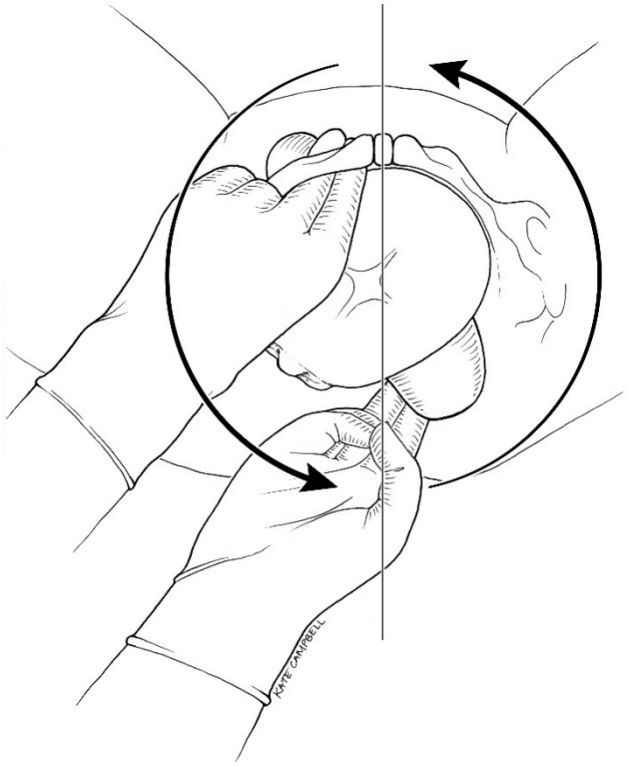


***Figure 6.2B* Rubin Manoeuvre**



Corkscrew or Woods' Screw Manoeuvre	
Description	• To perform this manoeuvre correctly, the client is instructed to stop pushing. • The attendant inserts their fingers into the vagina and identifies the fetal chest. Place two to four fingers on the anterior aspect of the posterior shoulder and two to four fingers on the posterior aspect of the anterior shoulder. Apply pressure to rotate the baby 180° (a full half-circle), keeping the fetal back toward the client's anterior (Figure 6.3). • The client is instructed to push and lateral flexion is simultaneously applied to the fetal head to deliver the anterior shoulder. • The rotation may be repeated as required as long as the fetal back remains toward the client's anterior. • It is important not to twist the fetal head or neck and to repeat lateral flexion of the fetal head accompanied by client effort following each attempt.
Mechanism of action	• The posterior shoulder is rotated clockwise or counter-clockwise 180° (in a screw-like fashion in a gentle downward direction), releasing the impaction.

***Figure 6.3* Corkscrew or Woods' Screw Manoeuvre**

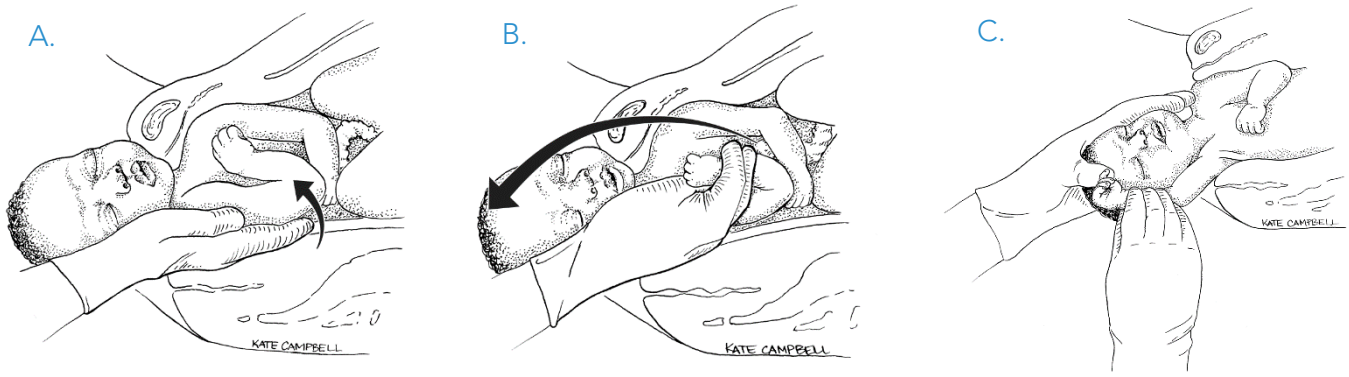


Delivery of the Posterior Arm	

Description	• To perform this manoeuvre correctly, the client is instructed to stop pushing.
	• Insert the hand along the curvature of the sacrum. Following the fetal humerus, apply pressure to the antecubital fossa to flex the fetal arm if necessary.
	  o Splint the arm and sweep it across the chest (Figure 6.4A)
	  o Grasp the hand, if necessary (Figure 6.4B)
	  o Sweep the arm out of the vagina (Figure 6.4C)

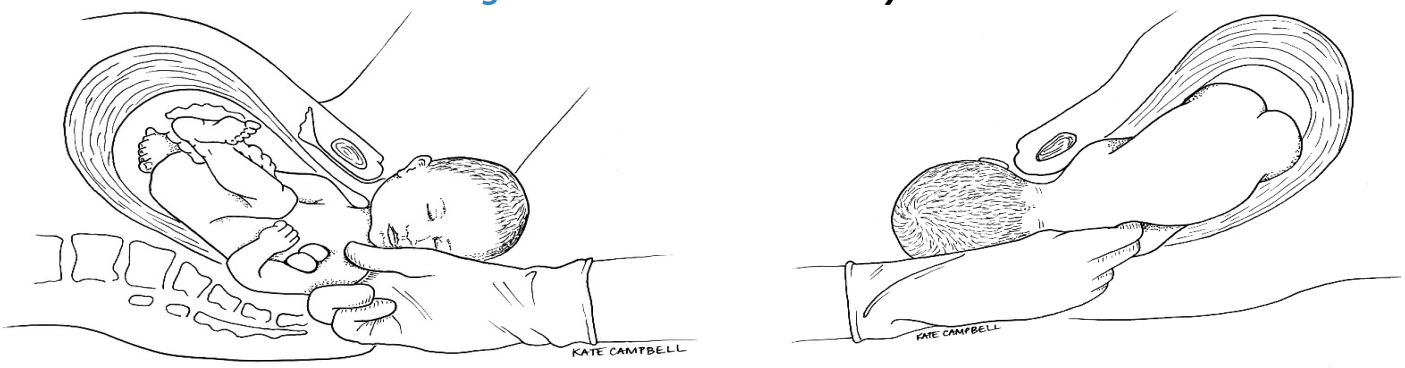
Mechanism of action	• This manoeuvre reduces the bisacromial diameter.
Notes	• This manoeuvre may be impossible if the posterior shoulder is impacted high in the pelvis or the arm is extended along the body. • An episiotomy may be required to allow sufficient room for the midwife's hand to enter the vagina. (53)

Figures 6.4A to 6.4C Delivery of the Posterior Arm



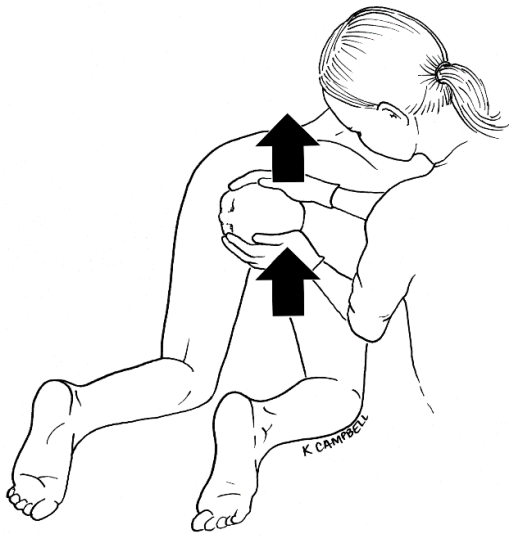
Axillary Traction	
Description	• To perform this manoeuvre correctly, instruct the client to stop pushing. • Insert the second and third fingers of the dominant hand down past the posterior aspect of the fetal neck along the sacral curve. The fingers of both hands can also be used if there is enough space. • Hook the fingers into the fetal axilla and apply traction to the posterior shoulder using continuous steady force downward and outward, passing along the sacral curvature. • Once the posterior shoulder has emerged from the pelvis, the posterior arm can be delivered using the technique for delivery of the posterior arm. It may also be possible to deliver the anterior shoulder with just the posterior shoulder delivered. • Gentle lateral traction on the fetal head can then be applied to deliver the anterior shoulder and the body afterwards.
Mechanism of action	• Involves insertion of fingers into the axilla of the fetus to deliver the posterior shoulder and then the arm. • Reduces the bisacromial (shoulder to shoulder) diameter, which can help disimpact the anterior shoulder and resolve the shoulder dystocia.
Notes	• Traction is applied through the axilla rather than against fetal structures. The degree of traction needed can be significant. • While some sources note that applying axillary traction does not seem to cause neonatal injury, as the force is in the effort of the practitioner rather than on fetal structures, others note that fracture of the fetus's posterior humerus may occur and risk of tearing of the anal sphincter and rectum are increased. Fetal fractures generally heal well over time, whereas brachial plexus palsies and hypoxic injury may be permanent.

Figure 6.5A and 6.5B** **Axillary Traction



Gaskin Manoeuvre/Hands and Knees	
Description	• Help the client onto their hands and knees. This position change can be very quickly instituted, except in people with motor impairment (e.g., epidural anesthesia). • The act of turning over may dislodge the anterior shoulder, in which case delivery easily follows. • The position change may also increase pelvic diameter, permitting movement of an impacted shoulder. • Further manipulative manoeuvres may be performed while the client is on all fours, position change may permit easier access to the posterior shoulder or arm.
Mechanism of action	• The force of gravity will keep the fetus against the anterior aspect of the client's pelvis as they change position; this may free up sufficient room for the posterior shoulder to become dislodged. • The all-fours position also allows movement of the sacroiliac joints, resulting in a 1- to 2-cm increase in the diameter of the pelvic inlet and optimizing space in the sacral curve. (44) • The impacted posterior shoulder may then slide over the sacral promontory and is easily delivered with gentle lateral flexion.
Notes	• May be especially helpful if the posterior shoulder is impacted. • Can be used as a first-line manoeuvre. • Can be used with epidural analgesia unless the degree of motor block does not allow.

***Figure 6.6* Gaskin Manoeuvre (Hands and Knees)**



Episiotomy

- While episiotomy is included in mnemonics around shoulder dystocia management, it should be treated as an adjunct measure rather than as a manoeuvre on its own. (3,5,54)
- Since shoulder dystocia is a bony disproportion, rather than a soft tissue obstruction, episiotomy is unlikely to prove effective.
- There is no direct evidence to support routine episiotomy to treat shoulder dystocia. (3,23,53,55)
- Episiotomy may facilitate the ability to perform the manoeuvres above, especially when additional room is needed to place the hand in the vagina. (6,53–55)
- Episiotomy increases the incidence of severe perineal lacerations and trauma. (55)

Note: If the above manoeuvres are not successful, the midwife should exercise their clinical judgment, repeat manoeuvres and if still unsuccessful, prepare to fracture the fetal clavicle.

Fracture the Fetal Clavicle

- Deliberate fracturing of the fetal clavicle may be considered if all previous manoeuvres are unsuccessful.
    - Apply pressure to the anterior clavicle upward against the pubic ramus.
- Fracture of the clavicle may occur as a result of manoeuvres to resolve the shoulder dystocia, or occasionally in a normal spontaneous birth.
- The fracture heals rapidly but has the potential to cause pneumothorax. **(45)**

Emerging research has described the use of an 'axillary sling' called posterior axilla sling traction (PAST) to help facilitate delivery of the fetal shoulders in cases of severe intractable shoulder dystocia (see Key Concepts). Using their knowledge, skills and judgement, the midwife may also consider PAST as clinically indicated.

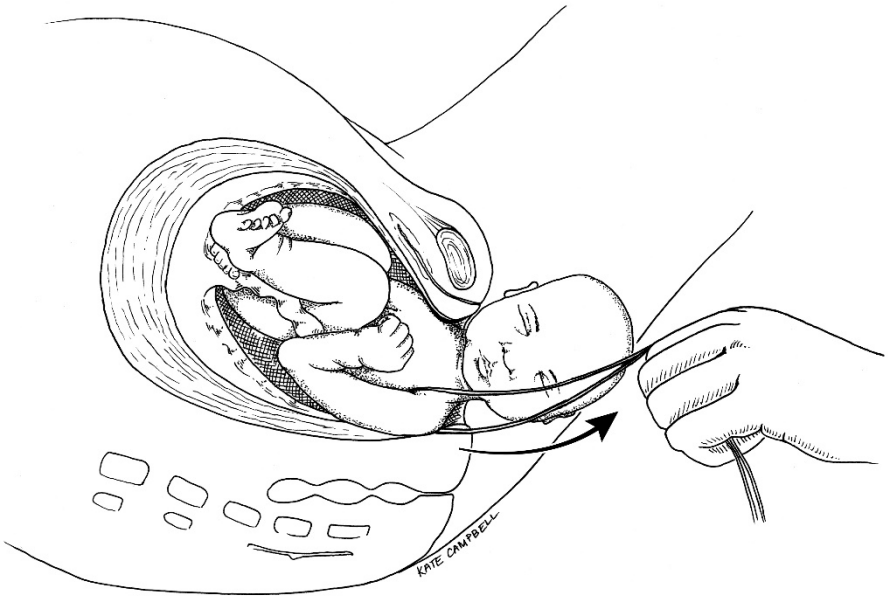
Posterior Axilla Sling Traction (PAST)

Description

- Instruct the client to stop pushing.
- Fold a 12F or 14F suction catheter over the index finger of the dominant hand to create a loop.
- Insert the suction catheter by feeding the loop behind the posterior shoulder, under the axilla.
- Introduce the index finger from the opposite hand to the anterior aspect of the posterior shoulder to pull the loop through the axilla, creating a sling.

	• Grasp both ends of the sling and apply traction to the posterior shoulder using continuous steady outward force, passing along the sacral curvature. • Once the posterior shoulder has emerged from the pelvis, the posterior arm can be delivered. • Gentle lateral traction on the fetal head can then be applied to deliver the anterior shoulder and the body afterwards. • If the above action fails, the sling can also be used to rotate the posterior shoulder. In this case, traction is applied to the sling while the opposite hand is used to direct pressure against the anterior shoulder in the same fashion as the Corkscrew or Woods' Screw manoeuvre.
Mechanism of action	• Involves insertion of a catheter sling through the axilla of the fetus to deliver the posterior shoulder and then the arm.
Notes	• Similar to axillary traction, the degree of traction needed may be significant. • PAST has been associated with neonatal injury, including fracture of the posterior humerus, brachial plexus palsy, and a single case of circumferential shoulder laceration.

***Figure 6.7* Posterior Axilla Sling Traction (PAST)**



POSTPARTUM MANAGEMENT

Neonatal

- Be prepared to perform neonatal resuscitation. Asphyxia is the most serious neonatal complication of shoulder dystocia.
- If possible, do not clamp the umbilical cord for at least 60 seconds, even when initiating a resuscitation, to allow for blood to return from the placenta to the infant's heart and circulation. (40,56,57)
- This is done to prevent the risk of neonatal hypovolemia caused by blood being sequestered in the placenta due to fetal cord and thoracic compression (see Key Concepts).
- If feasible, draw cord blood gases or isolate a clamped and cut segment of the cord for collection later (see Chapter 1).
- Assess and observe for signs of brachial plexus and neurological impairment or injury (e.g., clavicle and humerus fractures).
- When auscultating the lungs, consider pneumothorax, as it is a potential complication of a fractured clavicle.
- If feasible, send placenta to pathology for examination.
- Evaluation of the placenta may aid in defining the timing and etiology of cerebral palsy. (58)
- Document assessments, manoeuvres used, and actions as soon as possible.

Birthing Client

- Perform active management of the third stage of labour due to the higher risk of postpartum hemorrhage associated with shoulder dystocia (incidence is estimated at 11%). (4,35)
- Consider possible urethral injury if the client has trouble urinating.

KEY CONCEPTS

Two Approaches to Birth

In every birth, midwives use clinical judgment to determine if a one-step or two-step approach to birth is indicated. (43,59) In a one-step approach, the birth of the body is expedited before the next contraction and is often facilitated with gentle downward traction on the fetal head. (42) A two-step approach involves waiting for restitution of the fetal head following its birth and waiting for contractions (usually the next contraction) for the birth of the shoulders and the body. (42) Research on whether or not to choose a one- or two-step approach asks the question: How long is too long between the birth of the fetal head and fetal body?

Several publications examining head-to-body birth intervals found no difference in umbilical artery blood gas, umbilical artery pH or base deficit after waiting for the next contraction within a five-minute period. (43,60,61) In one study, abnormal fetal heart rate prior to birth was the only factor significantly associated with lower arterial cord pH – not the head-to-body birth interval. (43)

In understanding this research, advocates of the two-step approach describe the importance of pressure and perfusion and that active pushing between contractions may prevent venous blood from returning to the thorax, resulting in hypoxic ischemic encephalopathy. On the contrary, a relaxed client who is waiting for the next contraction will preserve cerebral perfusion and allow time for the fetal head and shoulders to naturally restitute prior to the next contraction. (42,61,62) This relaxed time between contractions helps avoid local brain hypoxia and may also prevent shoulder dystocia.

In summary:

- Research evidence suggests that an interval of up to four minutes between the birth of the fetal head and the body does not increase the risk of fetal harm.
- A pause between contractions may allow for more complete restitution, preventing shoulder dystocia while maintaining and preserving perfusion.
- There is a need for a standard definition of shoulder dystocia that recognizes the importance of the one-step and two-step approaches.

Manoeuvres to Resolve Shoulder Dystocia

Most manoeuvres are designed to aid in the usual mechanisms of shoulder delivery. The general practice is to move from the least invasive manoeuvre to the most invasive. The order of manoeuvres may, however, be influenced by the client's position and the cause of the dystocia. (6,10,63)

The use of McRoberts and suprapubic pressure alone has been shown to resolve shoulder dystocia in 25% to 58% of cases and is associated with lower rates of neonatal injury when compared to other manoeuvres. (45,64–67). The incidence of fetal and client trauma increases with the severity of dystocia and the number of manoeuvres needed to resolve the dystocia. (35,63–65,67–70) Strong traction on the fetal head (used with or without other manoeuvres) is associated with a greater likelihood of brachial plexus injury and is not an effective technique for dislodging an impacted shoulder. (23)

Posterior Axilla Sling Traction (PAST)

Emerging research has described the use of an 'axillary sling' to help facilitate delivery of the fetal shoulders in cases of severe intractable shoulder dystocia. Termed 'posterior axilla sling traction' (PAST) the manoeuvre was first described by Hofmeyr and Cluver in 2009. (71) The technique is a modification of axillary traction (or digital hitching) described by Menticoglou in 2006. (72) The manoeuvre was first used in cases of intrauterine death, however, more recent case studies have detailed the use of the sling catheter in live births. (71,73)

A 2015 summary describes the use of PAST for shoulder dystocia among 19 cases (14 live births and five antenatal intrauterine fetal demises). Of these, 18 were deemed successful; meaning that PAST facilitated birth of the fetus vaginally. (73) There were three humerus fractures and five infants with Erb's palsy, four of which were transient. (73) Successful case reports have been described internationally using PAST alone or PAST with rotation of the posterior shoulder. (74–76)

The success of PAST among intractable shoulder dystocia has been attributed to the sling requiring and occupying minimal space. Similarly, the sling is thought to bring the posterior shoulder down using less traction force than would be required digitally. (73,74) The most common complications associated with PAST appear to be fracture of the posterior humerus and transient brachial plexus palsy, however, a single case of circumferential shoulder laceration was noted in the literature. (73–76) This laceration was thought to be attributed to the shearing force of the sling against the stretch of the latex urinary catheter that was used. (76) To date, an ideal sling material has not been identified, however, authors of initial case reports suggest the use of an inelastic soft plastic catheter (such as a 12F or 14F suction catheter). (73,76)

Given that cases of severe intractable shoulder dystocia are rare, it is difficult to study PAST extensively through prospective studies. (75) Research to date suggests that the use of PAST is likely to present less risks than alternative measures for intractable shoulder dystocia (including the Zavanelli manoeuvre, abdominal rescue, and symphysiotomy) (76) and may prove beneficial to midwives, especially when other manoeuvres fail and access to emergency hospital services are not readily available in an out of hospital setting.

Neonatal Hypovolemia and Timing of Cord Clamping

Permanent brain injury or fetal/newborn death resulting from a shoulder dystocia has long been attributed to prolonged cord compression causing oxygen deprivation. (5,9) It has also been suggested that the difference in intrauterine and atmospheric pressure during a contraction leads to impaired venous return from the fetal brain, which when prolonged, as in a shoulder dystocia, can cause fetal brain injury or death. (5,9) More recently, hypovolemia in the newborn caused by the occlusion of the umbilical cord and compression of the fetal chest during a shoulder dystocia has also been hypothesized as a significant cause of neonatal morbidity and mortality. (40,56,57)

During the interval between the birth of the head and the fetal body, blood cannot transfer from the placenta to the fetus until the shoulder dystocia is resolved and the body is born. It is suggested that the hypovolemic state of the newborn is exacerbated when the umbilical cord is clamped immediately after the birth, or on the perineum in the case of a nuchal cord, which can cause an inflammatory response in the newborn and lead to seizures, hypoxic-ischemic encephalopathy (HIE), brain damage and death. (40,56,57) While research is still emerging on this topic, it is suggested, where possible, that clamping and cutting of the umbilical cord be delayed for at least 60 seconds following a shoulder dystocia, even when resuscitation is required. (5)

SELF-TEST QUESTIONS

1. *In the shoulder dystocia mnemonic ALARMER, what does the first "A" refer to?*

    A. Apply pressure
    B. Ask for help
    C. Assist to all fours
    D. Abduct the hips

2. *Which of the following statements correctly identifies the mechanism of action associated with McRoberts manoeuvre and suprapubic pressure during a shoulder dystocia?*

    A. McRoberts expands the symphysis pubis, suprapubic pressure exerts force towards the posterior shoulder
    B. McRoberts contracts the pelvic outlet, suprapubic pressure applies internal traction to the anterior shoulder
    C. McRoberts increases the bispinous diameter, suprapubic pressure disimpacts the anterior shoulder externally
    D. McRoberts straightens the sacral promontory, suprapubic pressure rotates the fetal shoulders clockwise

3. *What fetal complication is most commonly associated with shoulder dystocia?*

    A. Clavicular fracture
    B. Pneumothorax
    C. Brachial plexus injury
    D. Hypovolemic shock

4. *For the birthing person, what complication is most commonly associated with shoulder dystocia?*

    A. Postpartum hemorrhage
    B. Vaginal laceration
    C. Uterine rupture
    D. Episiotomy extension

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