Care CEUs

Continuing Education for Nursing Home Administrators

Shoulder Dystocia

Section 1: Introduction

During the course of pregnancy and delivery, many complications can be detected early and avoided. In cases of shoulder dystocia, that is usually not the case. This unpredictable and unavoidable obstetrical emergency occurs in a small percentage of typical vaginal deliveries, though the rate continues to increase each year. First described in 1730, this complication has been reported for the last two centuries. However, unlike many rates of pregnancy and delivery complications, the rate of shoulder dystocia occurrences is gradually increasing in the United States (Youssefzadeh et al., 2023). Dystocia is the cause of 50-60% of cesarean sections in the United States and is the most common cause of a first cesarean section (Tsikouras et al., 2024). Overall, the rate of shoulder dystocia is 0.2% to 3% of vaginal deliveries of fetuses in vertex presentation (Davis et al., 2023). The rate varies significantly because the condition is often under and overdiagnosed (Cleveland Clinic, 2022).

When shoulder dystocia occurs, nurses must be able to recognize this obstetrical emergency, understand its signs and symptoms, respond with evidence-based interventions, and appreciate its associated health implications.

Section 2: Definition

Typically, when the fetus is delivered, the head flexes, and rotates to pass through the bony pelvis, and the shoulders descend into the pelvic inlet. When the head is delivered and externally rotated, the shoulders need to rotate within the pelvis to pass through the pelvis and be delivered. When the head is able to emerge, but the shoulders are unable to pass through the pelvic outlet, shoulder dystocia occurs (Allen & Isaacs, 2023). Shoulder dystocia is defined as a condition that occurs during a vaginal delivery in which the shoulders of the fetus fail to spontaneously move through the pelvis for at least sixty seconds after the delivery of the head has occurred. When this complication occurs, the most common

cause is that the shoulder that is most forward becomes trapped beneath the pubic symphysis. Less commonly, shoulder dystocia can occur when the posterior shoulder becomes trapped (Tsikouras et al., 2024).

When shoulder dystocia occurs, both the mother and fetus can experience injuries. The mother may experience damage to the bladder, anal sphincter, and rectum and may also have postpartum hemorrhage. Shoulder dystocia may also cause hypoxia and brachial plexus injury to the neonate (Hill et al., 2020). Brachial plexus injuries typically occur due to excessive pulling of the fetal head when attempting to deliver the shoulder. Clavicle fractures are also common in cases of shoulder dystocia (Tsikouras et al., 2024). In cases of prolonged shoulder dystocia, fetal distress and death are possibilities (Tsikouras et al., 2024).

Section 2 Personal Reflection

How does shoulder dystocia differ from a typical delivery? What is the most common cause of shoulder dystocia? Why is shoulder dystocia considered an obstetric emergency? What injuries can occur when shoulder dystocia happens?

Section 3: Causes and Risk Factors

It is essential for nurses and other healthcare team members to recognize that while certain factors increase the risk of shoulder dystocia, most cases occur unexpectedly (Hill et al., 2020). The identification of risk factors, however, can allow the healthcare team to discuss the risk and possibility of elective cesarean section with the patient before delivery (Alves Á et al., 2022).

There are three categories of potential causes of shoulder dystocia. The first category describes conditions that make the forces exerted by the mother's body during delivery insufficient. This may be caused by dysfunction of the uterus during labor or failure in the strength of pushing. The second category is fetal

factors, such as abnormal size, shape, position, or presentation, which can lead to shoulder dystocia. The third category is caused by congenital or acquired conditions affecting the pelvic canal. These anomalies can affect the bony pelvis or soft tissues, inhibiting delivery (Tsikouras et al., 2024).

If the mother has experienced shoulder dystocia, use of forceps or vacuum, or an infant with a brachial plexus injury in a previous delivery, the risk of reoccurrence is greater than 10% (Davis et al., 2023). For infants with a birth weight of less than 3500 grams, an operative vaginal delivery, or a vaginal delivery that uses forceps or vacuum, is more closely associated with shoulder dystocia than the weight of the fetus (Levin et al., 2024). Other factors that increase risk are the use of oxytocin to induce labor, the use of an epidural, a prolonged first or second stage of labor, a very short second stage of labor, or inappropriate pressure or maneuvers used in delivery (Cleveland Clinic, 2022).

Certain maternal pelvis types present an increased risk of shoulder dystocia. There are four categories of pelvis shape found in females. The female type pelvis has a round or slightly oval entrance with a large diameter, and the girth is larger than the width of the shoulders. Women who have this type of pelvis are at the lowest risk for dystocia and are present in approximately 41.4% of the population. The android type pelvis describes a pelvis with a triangular or wedge-shaped entrance with a smaller diameter, and the girth is typically the same as the width of the shoulders. This pelvis type is present in approximately 32.5% of females. The humanoid type pelvis is present in 23.5% of the female population and is described as having an oval entrance with a longer anterior to posterior diameter than transverse diameter. The flat-bellied pelvis is found in 2.6% of females and is described as having an oval entrance with a wider transverse diameter than anterior to posterior diameter. The android, humanoid, and flat-bellied pelvis types are the most commonly found types in cases of shoulder dystocia (Tsikouras et al., 2024).

Maternal diabetes, obesity, and significant weight gain during pregnancy can increase the risk. When the mother has diabetes, elevated glucose levels in the fetus lead to excess insulin, insulin-like growth factors, and growth hormone. This can cause the fetus to grow larger than expected or have larger shoulders and increased abdominal-to-head circumference ratios. The increased size of the fetus can lead to problems moving through the maternal pelvis during birth. The presence of maternal diabetes does not necessarily mean shoulder dystocia will occur, and most cases of shoulder dystocia occur in mothers who do not have diabetes (Davis et al., 2023).

The size of the fetus contributes to the risk of shoulder dystocia. While the risk for infants weighing less than 4,000 grams at birth is 1%, the risk of this obstetrical emergency increases to 5-9% for infants weighing 4,000-4,500 grams at birth and 14-23% for infants with a birth weight greater than 4,500 grams. Prenatal fetal weights that are considered at high risk for shoulder dystocia are 5,000 grams if the mother does not have diabetes and 4,500 grams if the mother does have a diabetes diagnosis (Davis et al., 2023). It is believed that the increase in cases of shoulder dystocia can be attributed to the rise in the incidence of obesity and diabetes, which are both risk factors for macrosomia. Mothers who are older than 35 are at increased risk for shoulder dystocia, but this is likely due to the higher prevalence of diabetes, obesity, and multiparity in this population (Alves Á et al., 2022).

Abnormalities of the mother's anatomy can increase the risk of shoulder dystocia. Most of the time, if there is an abnormality in the bony pelvis, it results from healing from a fracture, most commonly due to a motor vehicle collision. Abnormalities of the soft tissue that can lead to shoulder dystocia include uterine fibroids, tumors, and bladder distention (Tsikouras et al., 2024).

There are some risk factors that, while also not predictive, tend to occur more frequently in cases of shoulder dystocia. Post-term pregnancy is a risk factor for shoulder dystocia (Alves Á et al., 2022). Only 3.4% of cases of shoulder dystocia

occur in deliveries before 37 weeks (Mendez-Figueroa et al., 2021). Male sex of the infant is more commonly associated with shoulder dystocia, as males tend to be larger than female neonates (Alves Á et al., 2022). Congenital anomalies can alter the body shape, presentation, and position, contributing to shoulder dystocia (Tsikouras et al., 2024). During delivery, a prolonged second stage of labor, or pushing phase, and lack of descent of the fetal head increases the likelihood of the occurrence of shoulder dystocia (Davis et al., 2023).

While healthcare workers must be aware of the factors that increase the risk for shoulder dystocia, nurses must know that these risk factors are not predictive. Even with multiple risk factors, shoulder dystocia may not occur, and it could happen in patients with no known risk factors (Davis et al., 2023). Most cases of shoulder dystocia occur when there are no present risk factors (Alves Á et al., 2022).

Section 3 Personal Reflection

What are the three categories of causes of shoulder dystocia? Do you think more than one category can contribute to the occurrence of shoulder dystocia? Why would the type of pelvis affect the occurrence of shoulder dystocia? Why is maternal diabetes a relevant diagnosis for shoulder dystocia? How do the risk factors affect the ability to predict the occurrence of shoulder dystocia?

Section 4: Signs and Symptoms

Shoulder dystocia is considered unpredictable and unavoidable. There are no true symptoms of shoulder dystocia, but there are signs that can alert the healthcare team to the occurrence of this obstetric emergency (Cleveland Clinic, 2022).

The “turtle sign” is commonly found in impending cases of shoulder dystocia, though it is not used as a diagnostic sign (Davis et al., 2023). This sign occurs in a

minority of cases of shoulder dystocia but is still a sign that can alert the healthcare team that there may be a problem. The “turtle sign” occurs when the infant’s head retracts back into the birth canal against the perineum (Cleveland Clinic, 2022). When this happens, the infant’s face is typically swollen and red (Tsikouras et al., 2024). Alternative causes of the “turtle sign” could be a tight nuchal cord, fetal malposition, or even a standard, uncomplicated delivery (Davis et al., 2023).

Typically, the shoulders should be delivered within one minute of the head, with the delivering provider only using gentle downward pressure to assist the delivery of the shoulders. In cases of shoulder dystocia, the shoulders are unable to be delivered in this way, and more than one minute has passed since the head was delivered. Shoulder dystocia can only be definitively diagnosed after it has already occurred, though recognizing signs can alert the healthcare team that this obstetrical emergency is occurring (Davis et al., 2023).

Section 4 Personal Reflection

Why is shoulder dystocia considered unpredictable and unavoidable? What is the turtle sign? What other conditions could cause the turtle sign to occur? After the head is delivered, when should the healthcare team expect the delivery of the rest of the body? Why can shoulder dystocia only be definitively diagnosed after it has occurred?

Section 5: Response and Interventions

The appropriate response to shoulder dystocia is imperative, as the result may be a life-threatening injury to the neonate or mother. The American College of Obstetricians and Gynecologists guidelines recommend a planned cesarean section when the estimated fetal weight is greater than 4500 grams for a patient with diabetes and 5000 grams for a non-diabetic patient (Tsikouras et al., 2024).

Some providers will use shoulder dystocia maneuvers prophylactically when there are risk factors present, though there is no evidence to support or refute this practice. Early labor induction and planned cesarean delivery are also strategies used to avoid shoulder dystocia in patients with multiple risk factors. However, there has not been clinical evidence of clear benefit to support this practice, except for planned cesarean section for cases of fetal macrosomia (Davis et al., 2023).

During a routine delivery, the delivery of the fetal head should be announced by the provider so that the time can be documented and the timer can be started for the delivery of the body (Hill et al., 2020). If the shoulder does not deliver with the usual force used by the provider, shoulder dystocia is likely, and specialized maneuvers are necessary for delivery (Alves Á et al., 2022). When shoulder dystocia is identified, the healthcare team must act quickly to promote the best outcome for the mother and infant (Davis et al., 2023). The goal of interventions in the presence of shoulder dystocia is to prevent morbidity and mortality of the infant and mother (Alves Á et al., 2022).

A mnemonic tool associated with shoulder dystocia that is used to help the healthcare team recall the recommended steps for interventions in the event of shoulder dystocia is the HELPERR mnemonic. The letters of the mnemonic represent Help, Evaluate for episiotomy, Legs, Pressure, Enter maneuvers, Remove posterior arm, and Roll the patient. The first step, Help, reminds the clinician to call for help. The anesthesiologist, neonatologist, respiratory therapist, and additional members of the healthcare team will need to be present for delivery. The provider may also require additional equipment to be brought in. Next, the clinician will determine if an episiotomy, or incision in the perineum, is necessary to deliver the infant safely. An episiotomy may be done if the provider needs more room for rotation maneuvers. Legs reminds the provider to attempt the McRoberts maneuver, which involves pressing the thighs up and against the abdomen to flatten and rotate the pelvis. Pressure occurs when the provider or an assistant applies suprapubic pressure to attempt to rotate the shoulder for

delivery. Enter maneuvers, also known as internal rotation, can be attempted to manually turn the baby to enable delivery. Remove posterior arm reminds the provider to deliver one arm from the birth canal to aid the shoulders in passing through the pelvis. The final mnemonic, Roll the patient, reminds the provider to rotate the patient onto their hands and knees to drastically alter the position and aid in delivering the fetus (Cleveland Clinic, 2022).

Some of the steps of the HELPERR mnemonic describe specific maneuvers known to aid delivery during shoulder dystocia (Cleveland Clinic, 2022). These maneuvers are categorized as first-line, second-line, and heroic (Davis et al., 2023).

First-line maneuvers include the McRoberts maneuver and suprapubic pressure. The McRoberts maneuver is the "Legs" part of the HELPERR mnemonic. In this maneuver, two assistants bring the patient's knees toward the armpits. This allows the pelvic outlet to be more open and also causes a rotation of the pubic symphysis, which creates more space for the shoulders to move through the pelvis. This maneuver increases the force of pushing, which can help to facilitate delivery. Suprapubic pressure, also known as the Rubin I maneuver (Alves Á et al., 2022), is applied in an effort to dislodge the impacted shoulder of the fetus. In this maneuver, the palm or fist is used in a downward and oblique direction to the right or left side, depending on the position of the fetus (Davis et al., 2023). Suprapubic pressure and the McRoberts maneuver are often used simultaneously to facilitate delivery (Alves Á et al., 2022).

Second-line maneuvers include delivering the posterior arm, rotational maneuvers, the Gaskin maneuver, and routine episiotomy (Davis et al., 2023). Delivering the posterior arm, also known as the Jacquemier maneuver (Alves Á et al., 2022), is considered the first-line maneuver of the second-line maneuvers (Davis et al., 2023). This maneuver has a high success rate but is more invasive than the first-line maneuvers (Alves Á et al., 2022). It is recommended that it be tried first if the McRoberts maneuver and suprapubic pressure do not resolve the

shoulder dystocia. In this maneuver, the provider slides their hand along the posterior arm, grasps the forearm or wrist, and brings the arm across the chest of the fetus to deliver that arm. This maneuver reduces the diameter of the fetus that needs to be delivered, which can dislodge the impacted shoulder and facilitate delivery. Rotational maneuvers include the Rubin II and Woods screw maneuvers (Davis et al., 2023). These maneuvers are technically difficult and must be applied sequentially to facilitate delivery (Alves Á et al., 2022). The Rubin II maneuver involves the provider reaching into the vagina to apply pressure to the scapula of the posterior shoulder towards the chest of the fetus. When successful, this maneuver causes the impacted shoulder to rotate and deliver (Davis et al., 2023). If this is unsuccessful, the provider's hand should remain behind the anterior shoulder while the provider's other hand should come from the opposite angle and be placed in front of the posterior shoulder. The upper hand compresses the posterior aspect of the impacted shoulder while the other hand compresses the anterior aspect of the posterior shoulder. The Woods screw maneuver describes the intervention applied to the posterior shoulder (Alves Á et al., 2022). This maneuver facilitates the delivery of the impacted shoulder during the rotation (Davis et al., 2023). If this is unsuccessful, a reverse Woods screw maneuver can be attempted by removing the provider's lower hand from the vagina and shifting the upper hand to behind the posterior shoulder. The goal of the Woods screw and reverse Woods screw maneuvers is to rotate the fetus so they can be delivered through the widest part of the pelvis (Alves Á et al., 2022). In the Gaskin maneuver, the mother is moved onto her hands and knees. Then, gentle downward traction is applied to the shoulder closest to the sacrum, or upward traction is applied to the shoulder against the symphysis pubis (Davis et al., 2023). This maneuver is often successful and is associated with low morbidity, but can only be used in deliveries where spinal epidural analgesia is not being used. Some providers may choose this maneuver before attempting rotational maneuvers because it is less technically difficult (Alves Á et al., 2022). Episiotomy is not universally recommended in cases of shoulder dystocia because shoulder dystocia is caused by a bony obstruction and is not a problem with the perineum.

Still, it can be used if the provider feels it is necessary to provide more access to the fetus to perform the second-line maneuvers (Davis et al., 2023).

Shoulder dystocia can occur in instances of vertical delivery or when a bed or stretcher is not utilized. The initial intervention is to increase the maternal squat, which has a similar effect to the McRoberts maneuver. If this intervention alone is not successful, external suprapubic pressure can be applied while the mother maintains the extended squat position. Pressure should be applied in the same manner as the Rubin I maneuver. If this is unsuccessful, the next step to resolve shoulder dystocia during a vertical delivery is to move the patient into the Gaskin position (on all fours). At this point, if the position change is not enough to deliver the shoulders, Rubin II, Woods screw, and reverse Woods screw maneuvers are implemented. The healthcare team should remember that when these maneuvers are performed in the Gaskin position, they will work with the impacted anterior shoulder located inferiorly and the posterior shoulder positioned superiorly. The next attempted maneuver in this position should be the Jacquemier maneuver, or delivering the posterior arm. The mnemonic used in vertical deliveries to remember the order of interventions is ASAÍDA. The A reminds the provider to ask for help, acquaint the mother, or inform her of the situation, have the anesthetist ready, and augment the squat, which is a modified McRoberts maneuver. The S reminds the healthcare team to apply suprapubic pressure. The next A reminds the provider to alter the position to all fours or the Gaskin position. The Í indicates that internal maneuvers, such as Rubin II, Woods screw, and reverse Woods screw maneuvers should be attempted. D stands for delivering the posterior arm, and A indicates that the provider should assess the need for rescue maneuvers (Alves Á et al., 2022).

Heroic measures are considered when severe cases of shoulder dystocia occur that cannot be resolved with all other available maneuvers. Heroic measures are last-resort maneuvers that are associated with high rates of fetal morbidity and mortality and maternal morbidity. They are typically only performed when there have been multiple unsuccessful attempts at the first- and second-line

interventions. It is recommended that an assisting physician be present, and the operating room be prepared for cesarean section. An intentional clavicular fracture is completed by the provider pulling the clavicle of the fetus outward. This maneuver can result in injury to the vasculature and pulmonary structures near the clavicle but decreases the diameter of the fetus in an attempt to facilitate delivery. The Zavanelli maneuver involves rotating the head, flexing it, and pushing it back into the uterus. This allows relief of any compression of the umbilical cord. A member of the healthcare team must hold the fetus in place until an emergency cesarean section can be performed to rescue the fetus. An abdominal rescue can be performed if the Zavanelli maneuver is unsuccessful. A low transverse incision is made into the uterus so that the provider can dislodge the impacted shoulder and manually rotate the shoulders through the pelvis for a vaginal delivery. A symphysiotomy is accomplished by placing a Foley catheter with the mother lying on her back with her knees back above the pelvis and feet spread apart in the stirrups. An incision is made in the pubic symphysis, and the anterior aspect of the pubic symphysis is divided. This is considered a measure of last resort and should only be completed when all other interventions have failed and an operating room is not available for an abdominal rescue or cesarean section following a Zavanelli maneuver (Davis et al., 2023). There is no strong evidence regarding the efficacy and safety of symphysiotomy, and pelvic instability is a major risk factor for maternal morbidity. If this procedure is performed, the mother must rest in bed for two days, followed by progressive mobilization, with avoidance of abduction of the lower limbs for 7-10 days (Alves Á et al., 2022).

In addition to the several interventions known to relieve shoulder dystocia and facilitate delivery, some interventions should be avoided, as they are known not to be helpful or, in some cases, worsen outcomes. Fundal pressure should be avoided when shoulder dystocia is suspected, as it does not aid in the delivery of the shoulders and can worsen the shoulder impaction against the pelvis. Fundal pressure during shoulder dystocia increases the likelihood of uterine rupture. The mother should not push while maneuvers to resolve shoulder dystocia are

attempted (Davis et al., 2023). Excessive traction should not be exerted to release the shoulders, as this is more commonly associated with brachial plexus injury, worsening shoulder impaction, and uterine rupture. The umbilical cord should not be cut before releasing the shoulders. It does not aid in releasing the shoulders and reduces the oxygen available to the fetus. As previously stated, an episiotomy should be avoided unless it is necessary to perform first- and second-line maneuvers (Alves Á et al., 2022).

Communication among the healthcare team is essential in cases of shoulder dystocia. The approximate time frame between the identification of shoulder dystocia and the risk for severe morbidity or mortality is five minutes. This short time frame makes effective communication vital for favorable outcomes. Clear and objective information and orders must be shared to intervene promptly (Alves Á et al., 2022). Since the recommended time frame is a maximum of five minutes from head delivery to delivery of the body, it is recommended that only 30-60 seconds be allotted for the attempt of each maneuver (Tsikouras et al., 2024). Research has found that outcomes can be improved when there is a clear announcement to the healthcare team of the occurrence of shoulder dystocia, additional assistance from the healthcare team is called, and a member of the team announcing the time from delivery of the fetal head every 30 seconds so the provider and the rest of the team can pace maneuvers appropriately (Hill et al., 2020).

Documentation is an important aspect of shoulder dystocia. Documenting the sequence of events can later help the provider advise the patient regarding future pregnancy risks and potential complications of future deliveries. Clear documentation can also be valuable in the case of litigation related to the delivery. The healthcare team should be intentional about gathering information that can help future providers and patients when shoulder dystocia occurs. This information includes the mother’s prepregnancy weight, total maternal weight gain, estimated fetal weight prior to delivery, duration of active labor, duration of the second stage of labor, and delivery time of the fetal head and body (Davis et

al., 2023). Standardized documentation forms during labor and delivery are recommended for complete documentation. The healthcare worker designated to document must document all members of the healthcare team who participate in the delivery, the time they arrived, identify the shoulder that is impacted, which shoulder the delivery maneuvers are performed on, and the sequence in which these maneuvers are performed. The time spent attempting each maneuver and the time of resolution must also be documented. After delivery, estimated blood loss, assessment results of the birth canal, Apgar score, umbilical cord pH, and neonatal assessment should be documented (Alves Á et al., 2022).

Nurses play an important role when shoulder dystocia occurs. Nurses should know the plan for interventions when shoulder dystocia occurs in their workplace. They should call for additional help as needed and document the events accurately. The nurse can assist with maneuvers as needed and provide emotional support for the mother.

Section 5 Personal Reflection

Why is planned cesarean delivery not routinely indicated to avoid shoulder dystocia? Why is cesarean delivery indicated for fetuses with macrosomia? What is the HELPERR mnemonic? How can the different maneuvers facilitate delivery? How do these maneuvers differ in the event of a vertical delivery? Why are heroic maneuvers a last resort for intervention in the event of shoulder dystocia? What interventions should be avoided and why? How is communication used when shoulder dystocia occurs? What elements need to be documented, and why is this important?

Section 6: Health Implications

Shoulder dystocia is considered an obstetrical emergency because of the risk of complications for the mother and fetus. Complications occur in approximately

17-25% of fetuses with shoulder dystocia (Tsikouras et al., 2024). Postpartum hemorrhage and complicated perineal lacerations are the most common maternal complications (Alves Á et al., 2022). Postpartum hemorrhage occurs in 11% of cases of shoulder dystocia and anal sphincter injuries occur in 3.8% of cases (Hill et al., 2020). Other maternal complications include pubic symphysis diastasis, urinary tract injuries, and transient lateral femoral cutaneous neuropathy due to the effects of the McRoberts maneuver. If heroic maneuvers are necessary for delivery, the mother is at higher risk for uterine rupture, pubic symphysis diastasis, and urinary tract injuries (Alves Á et al., 2022). Pubic symphysis diastasis occurs when the pubic symphysis is separated. It is a painful condition that can cause difficulties in weight-bearing and urine retention (Seidman & Carlson, 2025). Transient lateral femoral cutaneous neuropathy is caused by focal nerve compression, resulting in burning pain, tingling, or numbness in the upper thigh (Coffey & Gupta, 2023). These complications can have serious adverse health implications for the mother.

The most common neonatal complication of shoulder dystocia is brachial plexus injury, occurring in 7-20% of infants with shoulder dystocia. The right brachial plexus is more commonly affected than the left because the left anterior occipital presentation of the fetus is more common (Tsikouras et al., 2024). When the fetal head continues to descend through the pelvis, but the shoulder is impacted, the brachial plexus can become stretched. This condition can also be aggravated by maneuvers meant to deliver the fetus. This common neonatal injury is more likely to occur when three or more maneuvers to facilitate delivery are used (Alves Á et al., 2022). The brachial plexus nerves originate in the neck and extend through the infant's arms. They are necessary for sensation and movement in the shoulder, arm, and hands, so injury to the brachial plexus can result in weakness and paralysis of the affected arm (Clinic, 2022).

The type of brachial plexus injury is determined by the nerves involved in the injury. Erb's paresis (or palsy) occurs most commonly and affects the C5 to C6 nerve roots. Klumpke's paresis (or palsy) is less common and affects the C8-T1

nerve roots. Finally, mixed brachial plexus palsy, or global palsy, is rare and involves nerve roots C5-T1 (Tsikouras et al., 2024). Erb's paresis is also known as Erb's palsy or Erb-Duchenne paralysis and can range from mild to severe. It is described as the neonate presenting with their arm hanging limply from the adducted shoulder, with internal rotation of the upper arm, pronation of the forearm, and outward direction of the palm. The infant is not able to raise the arm from the side, and the elbow is unable to flex. In these cases, the Moro reflex is absent on the affected side, but the grasp reflex is present (Basit et al., 2023). In cases of Erb's palsy, the infant may have good hand function, but poor range of motion of the arm. They may also have an unstable shoulder joint, a weak bicep, and a weak deltoid (Cincinnati Children's, 2024). In Klumpke's paresis, finger and wrist flexion is also present, described as a "claw hand," and the condition can be painful (Merryman & Varacallo, 2023). Mixed or global palsy occurs when all five brachial plexus nerves (C5-T1) are affected, causing the infant to have no movement in the shoulder, arm, and hand and no sensation in the arm (Cincinnati Children's, 2024).

Other neonatal complications that can occur because of shoulder dystocia include clavicle and humerus fractures, pneumothorax, hypoxic-ischemic encephalopathy, and neonatal death. More rare complications include diaphragmatic paralysis, Horner's syndrome or oculosympathetic palsy, facial nerve injury, spiral radial fracture, and laryngeal nerve palsy (Alves Á et al., 2022). Horner syndrome occurs when nerve damage affects the function of the eye, including pupil constriction and eye drooping. It is sometimes seen with severe brachial plexus injury (Cincinnati Children's, 2024). Shoulder dystocia can also cause neonatal asphyxia due to compression of the umbilical cord or fetal neck vessels, and excessive vaginal stimulation (Alves Á et al., 2022). Fetal asphyxia, hypoxic encephalopathy, and death most often occur when more than 10.75 minutes have elapsed from the time of delivery of the head to delivery of the body, and in cases where more than five maneuvers are necessary for delivery. The head-to-body interval does

not predict outcomes, but complications are more common with intervals greater than five minutes (Davis et al., 2023).

Overall, the prognosis for infants who have experienced shoulder dystocia is positive. At the age of three months, half of all babies diagnosed with shoulder dystocia can function completely, and by 18 months, the number of infants with no lingering effects rises to 82%. Brachial plexus injury can have variable outcomes. Infants who have experienced brachial plexus injury due to shoulder dystocia may experience difficulty with fine motor skill development and use of the affected limb. More than 90% of cases of brachial plexus injury are estimated to improve within six to twelve months, and less than 10% of cases result in permanent injury (Cleveland Clinic, 2022). While brachial plexus injuries are common in cases of shoulder dystocia, healthcare workers must remember that this injury also occurs frequently in cases that do not involve shoulder dystocia (Alves Á et al., 2022).

Section 6 Personal Reflection

How common are complications when shoulder dystocia occurs? What are the different complications that can affect mothers? What complications can affect the neonate? Why do you think brachial plexus injuries are common in cases of shoulder dystocia? How do you think the long-term implications of these complications can affect the patients?

Section 7: Case Study

Corrine is the nurse caring for a primigravida mother in the labor and delivery unit. The mother is 41 weeks pregnant with a male fetus and has a history of obesity and gestational diabetes. The estimated fetal weight via ultrasound is 4,400 grams.

What are the risk factors for shoulder dystocia present in this case?

Shoulder dystocia is more common in births occurring after 37 weeks of gestation. It also occurs more commonly with male fetuses because their average size is larger than that of female fetuses. A maternal history of obesity and diabetes can also contribute to shoulder dystocia due to the likelihood of fetal macrosomia. A cesarean section is recommended for estimated fetal weight greater than 4,500 grams in mothers with diabetes. In this case, the fetal weight is below that threshold, but it is close.

The physician explains the risk factors for shoulder dystocia to the mother, but they also explain that these are not necessarily predictive of shoulder dystocia occurring.

What can Corrine say to the patient to clarify what the physician means?

Corrine reinforces the physician's advice by stating that the risk factors present increase the likelihood of shoulder dystocia occurring, but they do not mean it will happen.

After discussing it with the physician and nurse, the patient would like to proceed with a vaginal delivery. Labor progresses through the first phase, and the second phase begins when the patient's cervix is dilated to 10 cm. Pushing progresses normally until the delivery of the head. At this point, Corrine observes the head flex back towards the perineum. When the patient pushes to deliver the body, no progress is noted in delivery.

At this point, what are some essential actions for Corrine to take?

Corrine must communicate clearly and effectively, advocate for her patient, and ensure accurate documentation.

Corrine notes the time of delivery of the head and reports it to the documenting nurse. Corrine states she believes shoulder dystocia may be occurring due to the

turtle sign and lack of progress in delivering the body. The physician agrees and begins the steps of the HELPERR mnemonic.

What are the steps of the HELPERR mnemonic?

Help: Corrine calls for help and communicates clearly that there is a suspected case of shoulder dystocia.

Episiotomy: The physician determines that they do not think an episiotomy will be necessary to complete maneuvers.

Legs: Corinne states she is going to move the patient into McRoberts positions. Corrine and an assistant pull the legs upward, with the knees toward the armpits, while the physician exerts gentle downward traction on the fetus.

Pressure: When McRoberts position alone is insufficient to facilitate delivery, Corrine applies suprapubic pressure in an oblique downward direction to try to dislodge the shoulder.

Enter: Internal maneuvers are started next to deliver the fetus.

Remove the posterior arm: The physician is able to remove the posterior arm, which decreases the diameter of the neonate in the pelvis, and the body is then delivered.

The final R, roll the patient onto all fours, is not necessary in this case, but would be the next step of the HELPERR mnemonic.

What does Corrine need to ensure is included in the documentation?

Corrine ensures there is clear documentation of the maternal history, the delivery time of the head, when it is stated that shoulder dystocia is likely occurring, the timing and sequence of interventions, the delivery time of the body, what healthcare personnel are present, and their roles. She also documents the estimated blood loss, assessment results of the birth canal, the infant's Apgar score, umbilical cord pH, and the neonatal assessment.

Upon assessment of the neonate, Corrine notes that the Moro reflex is not present on the right side. All other aspects of the assessment appear to be normal.

What is likely the cause of the lack of Moro reflex on one side?

Corrine notes that this may be a brachial plexus injury. She notifies the physician and documents her findings.

After delivery, the mother has questions about the brachial plexus injury. What can Corrine tell her about the condition?

Corrine gives the mother patient education materials regarding brachial plexus injury. She reinforces what the pediatrician has explained to the parents by stating that it commonly occurs with shoulder dystocia due to the stretching of the nerves in the lower neck and shoulder. She explains that about 90% of affected infants are able to recover fully, and they will have scheduled follow-up appointments to assess progress, function, and the potential need for physical therapy.

What else is important for Corrine to share with the mother?

Corrine educates the mother that when she has had a delivery with shoulder dystocia, she is more likely to experience shoulder dystocia in subsequent deliveries. Corrine informs the mother that making her providers and healthcare team aware of this complication will be important for future deliveries.

Section 8: Conclusion

Shoulder dystocia occurs in a small number of vaginal births, but the rate of occurrence is increasing, and nurses must be ready to respond to this obstetrical emergency. Nurses can recognize the risk factors and alert the healthcare team when they are concerned that shoulder dystocia is occurring. Nurses who are knowledgeable of the various maneuvers and interventions to resolve shoulder

dystocia can be especially beneficial in improving outcomes. Knowledge of the health implications of shoulder dystocia can help the nurse to understand the severity of the emergency, complete post-delivery assessments, document the events accurately, and educate the mother and caregivers regarding what to expect after shoulder dystocia occurs.

References

Allen, R. H., & Isaacs, C. (2023, April 28). Shoulder dystocia. MedScape. Retrieved May 12, 2025, from https://emedicine.medscape.com/article/1602970-overview?form=fpf

Alves Á, L. L., Nozaki, A. M., Polido, C. B. A., & Knobel, R. (2022). Management of shoulder dystocia. Revista Brasileira de Ginecologia e Obstetrícia, 44(7), 723–736. https://doi.org/10.1055/s-0042-1755446

Basit, H., Ali, C. D. M., & Madhani, N. B. (2023, April 8). Erb palsy. StatPearls Publishing. Retrieved May 31, 2025, from https://www.ncbi.nlm.nih.gov/books/NBK513260/

Cincinnati Children's. (2024, February). Brachial plexus injury. Retrieved May 31, 2025, from https://www.cincinnatichildrens.org/health/b/brachial-plexus

Cleveland Clinic. (2022, January 23). Shoulder dystocia. Retrieved May 20, 2025, from https://my.clevelandclinic.org/health/diseases/22311-shoulder-dystocia

Coffey, R., & Gupta, V. (2023, May 1). Meralgia paresthetica. StatPearls Publishing. Retrieved May 21, 2025, from https://www.ncbi.nlm.nih.gov/books/NBK557735/#:~:text=The%20condition%20is%20caused%20by,isolated%20neuropathy%20of%20the%20LFCN.

Davis, D. D., Roshan, A., & Varacallo, M. A. (2023, December 20). Shoulder dystocia. StatPearls Publishing. Retrieved May 15, 2025, from https://www.ncbi.nlm.nih.gov/books/NBK470427/

Hill, D. A., Lense, J., & Roepcke, F. (2020). Shoulder dystocia: Managing an obstetric emergency. American Family Physician, 102(2), 84–90.

Levin, G., Meyer, R., Cahan, T., Shai, D., & Tsur, A. (2024). Shoulder dystocia in deliveries of neonates < 3500 grams. International Journal of Gynecology & Obstetrics, 165(1), 282–287.

Mendez-Figueroa, H., Hoffman, M. K., Grantz, K. L., Blackwell, S. C., Reddy, U. M., & Chauhan, S. P. (2021). Shoulder dystocia and composite adverse outcomes for the maternal-neonatal dyad. American Journal of Obstetrics & Gynecology MFM, 3(4), 100359. https://doi.org/10.1016/j.ajogmf.2021.100359

Merryman, J., & Varacallo, M. A. (2023, August 4). Klumpke palsy. StatPearls Publishing. Retrieved May 31, 2025, from https://www.ncbi.nlm.nih.gov/books/NBK531500/

Seidman, A. J., & Carlson, K. (2025, May 4). Postpartum pubic symphysis diastasis. StatPearls Publishing. Retrieved May 31, 2025, from https://www.ncbi.nlm.nih.gov/books/NBK537043/

Tsikouras, P., Kotanidou, S., Nikolettos, K., Kritsotaki, N., Bothou, A., Andreou, S., Nalmpanti, T., Chalkia, K., Spanakis, V., Peitsidis, P., Iatrakis, G., & Nikolettos, N. (2024). Shoulder dystocia: A comprehensive literature review on diagnosis, prevention, complications, prognosis, and management. Journal of Personalized Medicine, 14(6), 586. https://www.mdpi.com/2075-4426/14/6/586

Youssefzadeh, A. C., Tavakoli, A., Panchal, V. R., Mandelbaum, R. S., Ouzounian, J. G., & Matsuo, K. (2023). Incidence trends of shoulder dystocia and associated risk factors: A nationwide analysis in the United States. International Journal of Gynaecology and Obstetrics, 162(2), 578–589. https://doi.org/10.1002/ijgo.14699