Risks emergency response and outcomes of shoulder dystocia

What shoulder dystocia means in clinical practice

Shoulder dystocia is diagnosed at birth, not by ultrasound or examination before labor. The classic situation is that the fetal head delivers, then retracts slightly against the perineum, sometimes called the turtle sign. The shoulders fail to deliver with gentle downward traction and the next contraction, prompting an immediate, structured response.

The urgency comes from the fact that, once the head is out, the umbilical cord and fetal chest may be compressed. The baby cannot take effective breaths until the chest is delivered, and placental oxygen transfer may be reduced. However, panic is not helpful: trained teams use rehearsed sequences because many cases resolve within minutes when the right maneuvers are performed promptly.

It is important to understand that shoulder dystocia is not usually a sign that someone did something wrong. It can occur in births with no obvious risk factors and in babies who are not macrosomic. Documentation often includes the time the head delivered, the maneuvers used, the time the body delivered, the personnel present, and the newborn’s condition. This record helps guide immediate care and future birth planning.

Risk factors and why prediction is limited

Several factors are associated with a higher chance of shoulder dystocia, but none is accurate enough to predict most events. A major reason is that the mechanics of birth depend not only on estimated fetal weight, but also on fetal position, shoulder-to-head proportions, pelvic dimensions, labor dynamics, and whether operative vaginal birth is needed.

Commonly discussed risk factors include maternal diabetes, suspected fetal macrosomia, prior shoulder dystocia, excessive gestational weight gain, obesity, post-term pregnancy, prolonged second stage, and assisted vaginal delivery with vacuum or forceps. Diabetes is clinically important because fetal adiposity may disproportionately increase shoulder and trunk size relative to head size.

Estimated fetal weight has wide error margins, especially late in pregnancy. For this reason, many guidelines do not recommend cesarean birth solely for a moderately large estimated baby. In selected situations, such as very high estimated fetal weight, particularly with diabetes, clinicians may discuss planned cesarean delivery as a risk-reduction option. The decision is individualized, balancing the likelihood of dystocia against surgical risks, future reproductive plans, and the parent’s values.

For someone with a history of shoulder dystocia, recurrence risk is higher than baseline, but the next birth may still be uncomplicated. A careful review of the prior event matters: birthweight, neonatal injury, head-to-body delivery interval, maneuvers required, and maternal complications all influence counseling.

Emergency response in the delivery room

When shoulder dystocia is recognized, the first step is usually to call for help. This may bring additional obstetric clinicians, neonatal staff, nurses, anesthesia support, and sometimes an operating room team if escalation becomes necessary. Clear role assignment is central: one clinician directs maneuvers, one tracks time, one documents, and the neonatal team prepares for resuscitation if needed.

Fundal pressure is avoided because it may worsen impaction or increase fetal injury risk. The parent is usually asked to stop pushing briefly while the team repositions and applies maneuvers. Communication should be calm and direct, even though the situation is urgent. Many parents remember the sudden increase in staff and intensity; a brief explanation such as "the shoulders need help to deliver" can reduce fear.

The first-line maneuver is often McRoberts positioning, in which the parent's thighs are flexed tightly toward the abdomen. This flattens the sacral promontory and changes the angle between the pelvis and spine. It is commonly combined with suprapubic pressure, applied externally just above the pubic bone to dislodge or adduct the anterior shoulder. Suprapubic pressure is different from fundal pressure and is directed at the fetal shoulder, not the top of the uterus.

If these steps do not work quickly, internal rotational maneuvers may be used. Examples include Rubin or Woods-type maneuvers, which rotate the shoulders into a more favorable diameter. Delivery of the posterior arm may reduce the shoulder-to-shoulder diameter and allow the baby to be born. These procedures require training because excessive force can increase injury risk, but delayed delivery also carries risk.

Escalation maneuvers and rare last-resort options

Most shoulder dystocias resolve with McRoberts positioning, suprapubic pressure, rotational maneuvers, or posterior arm delivery. If not, the team may try alternative maternal positions, such as all-fours positioning, depending on maternal mobility, anesthesia, fetal status, and available space. The purpose is to change pelvic dimensions and shoulder orientation.

Episiotomy does not correct the bony obstruction of shoulder dystocia, but it may provide room for the clinician's hand to perform internal maneuvers. Therefore, it is not automatically required, but it may be used selectively when access is limited. This distinction matters because the emergency is at the level of the shoulders and pelvis, not simply the perineal opening.

Rarely, more invasive options are considered. These may include intentional clavicle fracture to reduce shoulder width, the Zavanelli maneuver with

replacement of the fetal head followed by cesarean delivery, or abdominal rescue procedures. Such interventions are uncommon and reserved for severe cases when standard maneuvers fail. They require experienced clinicians and rapid judgment under pressure.

Simulation training improves team readiness by making the sequence of actions familiar before a real emergency occurs. Drills also reinforce avoiding excessive traction on the fetal head, using precise suprapubic pressure, and escalating without delay. From the parent’s perspective, the response may look chaotic, but effective shoulder dystocia management is typically highly protocolized.

Risks for the baby

Most newborns after shoulder dystocia do well, especially when delivery is achieved quickly and neonatal assessment is prompt. Still, the event is associated with recognizable neonatal complications. The best-known is brachial plexus injury, involving nerves that control shoulder, arm, and hand movement. It may present as reduced movement of one arm, asymmetric Moro reflex, or weakness after birth.

Many brachial plexus injuries improve over weeks to months, particularly neurapraxia, where the nerve is stretched but not torn. Some injuries are more severe and may require specialist evaluation, physiotherapy, imaging, or surgery. Early recognition and referral are important because recovery trajectory guides management.

Clavicle fracture and humerus fracture can occur during the dystocia itself or during necessary maneuvers. Although alarming to parents, neonatal clavicle fractures often heal well with supportive care. Pain control and guidance on handling the baby are usually provided by the neonatal or pediatric team.

The most serious outcomes relate to oxygen deprivation. A prolonged head-to-body interval can increase the risk of acidosis, hypoxic-ischemic encephalopathy, seizures, neonatal intensive care admission, and, very rarely, neonatal death. These outcomes are uncommon but are the reason shoulder dystocia is treated as an emergency from the moment it is identified.

After delivery, the baby may need Apgar scoring, cord gases if available, examination of limb movement, assessment for fractures, glucose monitoring when indicated, and observation for respiratory or neurologic concerns. Parents should be told what was found, what is being watched, and when follow-up is needed.

Risks for the birthing parent

Maternal complications can be physical and emotional. Because delivery may involve rapid repositioning, internal maneuvers, episiotomy, or instrumental assistance, there is an increased risk of genital tract trauma. This can include cervical or vaginal lacerations, severe perineal trauma, and obstetric anal sphincter injury. Careful examination and repair after birth are essential.

Postpartum hemorrhage is also more common after shoulder dystocia. Contributing factors may include uterine atony, prolonged or difficult delivery, lacerations, or operative procedures. Management may involve uterine massage, uterotonic medication, repair of trauma, intravenous fluids, blood tests, and, in severe cases, transfusion or additional interventions.

Bladder or urethral injury is less common but possible, particularly if extensive maneuvers or trauma occur. Pain, difficulty voiding, heavy bleeding, fever, foul discharge, worsening pelvic pressure, or loss of bowel control after discharge should prompt urgent medical advice.

The emotional impact should not be minimized. A shoulder dystocia during birth can feel frightening, especially when the room suddenly fills with staff or the baby needs resuscitation. Some parents experience intrusive memories, guilt, anxiety about the baby’s arm movement, or fear of future pregnancy. A postpartum debrief with the obstetric team can help clarify what happened and support emotional recovery.

Outcomes, follow-up, and planning a future birth

Outcomes depend on the severity of impaction, duration of the emergency, maneuvers required, fetal condition, and any maternal trauma. Many families leave the hospital with a healthy baby and a shaken but recovering parent. Others need a longer path involving neonatal follow-up, physical therapy,

lactation support, pelvic floor care, or mental health support.

Follow-up for the baby should include reassessment of arm movement, pain, feeding, tone, and neurologic status. If weakness persists, pediatric neurology, orthopedics, or a brachial plexus clinic may be involved. Parents can ask which movements are expected, how to position the arm, and what changes should prompt review.

For the birthing parent, postpartum follow-up should address bleeding, anemia symptoms, wound healing, urinary or bowel symptoms, pelvic floor recovery after birth, pain control, and emotional wellbeing. Severe tears require structured follow-up because early management can improve long-term continence and sexual comfort.

Future pregnancy counseling is best done with access to the prior delivery record. Discussion may include recurrence risk, estimated fetal growth, diabetes screening or optimization, timing of birth, mode of delivery, and the parent’s preferences. A prior uncomplicated recovery after shoulder dystocia is reassuring, but a prior neonatal injury or severe maternal complication may shift the balance toward planned cesarean in some cases. The goal is not to create fear, but to support informed, individualized planning.