L08: Complications of Delivery

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Introduction

Delivery complications include the following topics: breech delivery; limb presentation; cord prolapse; and shoulder dystocia.

Essentials

- Breech presentation: The fetus whose presenting part is the buttocks and/or feet.
  - Most fetuses with persistent breech presentation are delivered by cesarean delivery, which is associated with a clinically significant decrease in perinatal/neonatal mortality and neonatal morbidity compared with vaginal delivery
  - Breech can be frank, complete, or footling - treatment is the same
- Single limb presentation: This is a critical presentation which is immediately life threatening to both mother and neonate. Rapid conveyance is indicated.
- Cord prolapse: The cord is the primary presenting part. This is immediately life threatening to the fetus and requires rapid recognition and conveyance.
- Shoulder dystocia: The anterior shoulder of the fetus is impacted against the symphysis pubis of the mother.

Additional Treatment Information

Breech presentation

- If breech, hands off neonate until body has been born to umbilicus. Allow head to deliver spontaneously, gently lift and hold the neonate upwards and backwards while avoiding hyperextension.
- If head does not deliver within 3 minutes of the body, it is an immediate life-threatening emergency.
- Paramedics and EMRs should initiate rapid conveyance; paramedics may attempt the Mauriceau-Smellie-Veit manoeuvre (M-S-V) repeatedly until neonate delivers or an obstetrical facility is reached.
- Cord prolapse and meconium contamination are more common in breech presentations.

Limb presentation

- Do not attempt to deliver. Do not delay on scene. Cover the limb using a dry sheet to maintain warmth and initiate rapid conveyance to a facility capable of performing a caesarean section. Provide supportive care to the mother.
- Position mother kneeling if possible. Do not touch presenting part.

Shoulder dystocia

- This is an immediate life-threatening situation that occurs when the anterior shoulder of the fetus is impacted against the symphysis pubis of the mother. Mortality greatly increases if the fetus is not delivered after 5-10 minutes of the initial presentation.
- Declare the emergency and explain the situation to gain maximum cooperation from the mother and those in attendance.
- The newborn is likely to be compromised and in need of resuscitation. Follow CPG M09: Neonatal Resuscitation.
- Shoulder dystocia can be predicted by larger fetal size and a previous history of shoulder dystocia.
- Shoulder dystocia can be diagnosed after crowning and a failure to progress, or "turtling" where the mother pushes and the neonate advances, then retracts when pushing stops.
- It is suggested to remain on scene for a maximum of 10 minutes or 2 rotations of the HELPERR procedure, then initiate rapid conveyance (note not all steps of the HELPERR procedure are within BCEHS Scope of Practice). Attempt delivery between each step:

- H - Immediately declare emergency and call for help
- E - Evaluate for episiotomy NOT AUTHORIZED
- L - Legs up: position the mother's hips in a hyperflexed (McRobert's) position for 30-60 seconds
- P - Apply supra pubic pressure in time with contractions
- E - Enter vagina with 2 fingers to perform rotational maneuvers NOT AUTHORIZED
- R - Remove the posterior arm NOT AUTHORIZED
- R - Roll patient onto hands and knees (Gaskin) and apply downward traction to delivery anterior shoulder

Cord prolapse

- This is a time sensitive critical emergency - early diagnosis, immediate intervention, and conveyance to the appropriate facility are effective in reducing the perinatal mortality rate. Cord prolapse can be predicted by a history of a fetus that is small for gestational age, a preterm birth, or an unstable lie.
- In an umbilical cord prolapse, minimize manipulation of the overtly exposed cord and protect it from the cold environment with warm saline or water soaked gauze. Excessive manipulation can exacerbate umbilical vasospasm, decreasing perfusion to the neonate. In the case of cord compression by the fetal head, manual elevation of the fetal head may be required.
- Position mother with knees to chest and face down. Alternately, during conveyance, left-lateral tilt with hip padding is advised. Notify receiving hospital early.

  WARNING: THE KNEES-TO-CHEST POSITION IS UNSAFE DURING CONVEYANCE.
- If a cord prolapse is present, the presenting part, usually the fetal head, should be elevated to relieve pressure on the cord. Assist the patient into the knees-to-chest position and insert a sterile gloved hand into the vagina to apply manual digital pressure to the presenting part of the fetus which is maintained until transfer of care in a hospital.

Nuchal cord

- If nuchal cord is present and loose, slip cord over the neonate's head. If nuchal cord is tight and cannot be slipped over the neonate's head and neonatal distress is present, apply 2 clamps and cut the cord in between the clamps; encourage rapid delivery.
- Following delivery of the neonate, the cord should be clamped and cut immediately IF neonatal or maternal resuscitation is required. Otherwise, delayed cord clamping (after approximately 2 minutes) is preferred. Place the first clamp 10 centimeters from the neonate and the second clamp 5 centimeters further. Cut between the clamps. Place the neonate on the maternal chest and encourage breastfeeding. Manage postpartum bleeding as required. If placenta has not delivered within 30 minutes, initiate rapid conveyance.

Referral Information

- All cases of delivery complications must be conveyed to the closest, most appropriate facility, unless birth is imminent. Certain complications are a surgical emergency and require rapid conveyance with notification, as specialty services may be required.
- Smaller facilities, although ill equipped to handle complex deliveries, can often safely perform caesarean sections, which can be lifesaving for both the mother and the neonate.
- Immediate conveyance of limb presentation and cord prolapse patients is indicated.
- It is suggested to attempt to deliver breech and shoulder dystocia patients in the field initially. After 10 minutes, provide rapid conveyance as the timeline to neonatal mortality increases. Rapid conveyance without attempting delivery leads to increased neonatal mortality.

Interventions

First Responder

- Provide position of comfort for patient
- Keep patient warm and prevent heat loss

Emergency Medical Responder – All FR interventions, plus:

- Convey as soon as possible to closest facility
- Consider intercept with additional resources
- Consider analgesia
  - Nitrous oxide
- See Additional Treatment Information above for managing specific complications
- If cord prolapse suspected, provide supplemental oxygen and initiate rapid conveyance
  - → A07: Oxygen Administration

Primary Care Paramedic – All FR and EMR interventions, plus:

- Establish vascular access and consider fluid bolus to correct hypoperfusion or hypotension if clinically indicated
  - → D03: Vascular Access

Evidence Based Practice

Childbirth/Post Natal Mother Care

Supportive

- Syntocinon

Neutral

- Uterine Massage

Against