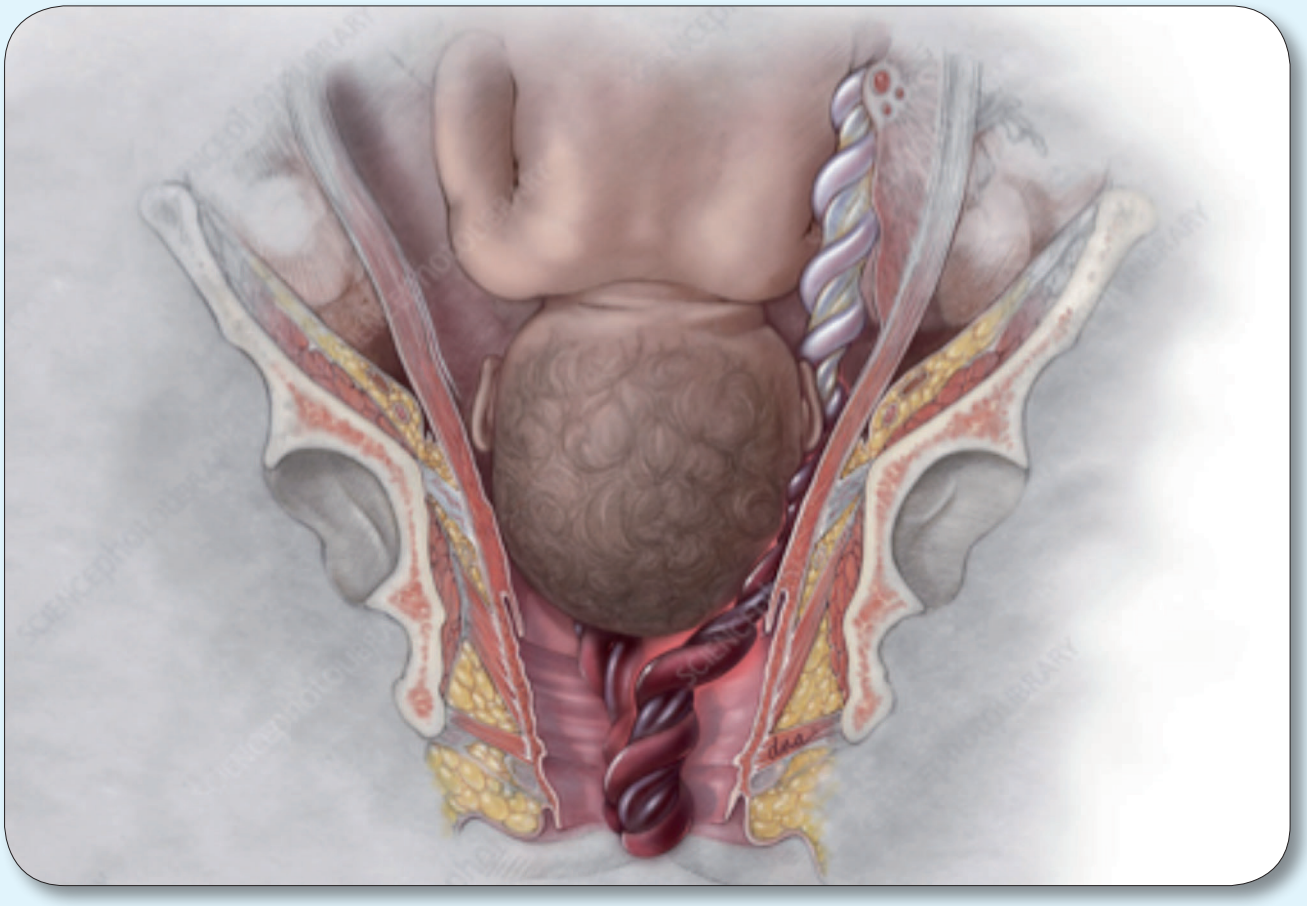
Companions to Management Series

CORD PROLAPSE

The Welfare of Women

Cord Prolapse

Cord prolapse is an obstetric emergency – if not managed quickly and efficiently, the fetus can become severely distressed within minutes. It can occur at any time following rupture of the amniotic membranes, so should be considered as a possibility (and ruled out) whenever fetal distress is suspected following this time, whether in pre-labour or intrapartum.



Courtesy Alex Webber https://www.dnaillustrations.com

Clinical Relevance

In a normal, uncomplicated vaginal delivery the umbilical cord should only pass through the cervix after the presenting part of the fetus has been delivered externally. The cord is considered 'prolapsed' when it descends through the cervix either in front of [before] or beside [at the same time as] the presenting part. Although occurring infrequently – typically in less than 1% of vaginal deliveries – it is associated with a high rate of perinatal morbidity and mortality. This arises because a cord blocked by the weight of the following fetus, or in spasm due to contact with the outside world, will not allow the vital transfer of oxygen to the fetus. It is therefore essential that all practitioners involved with childbirth are able to identify and manage cord prolapse well.

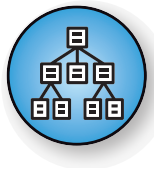
Although cord prolapse can occur with any vaginal delivery, certain features increase its risk. These can relate to fetal or maternal characteristics, or procedures undertaken (see table). Additional awareness and anticipation should be made in cases where any of these exist. The fetal heartbeat should always be monitored closely immediately after rupture of the amniotic membranes, and any vaginal examinations, to ensure that the fetus is not distressed secondary to cord prolapse.

Associations with Cord Prolapse	
Fetal or Maternal Characteristics	**Procedures**
• Polyhydramnios	• Artificial rupture of membranes (especially with high presenting part)
• Breech presentation	
• Transverse, oblique or unstable lie	• Vaginal manipulation of the fetus with ruptured membranes
• High presenting part	
• Pre-term labour (<37 weeks)	• External cephalic version (during the procedure)
• Multiparity	
• Low birthweight (<2500 g)	• Induction of labour using a balloon catheter
• Fetal abnormalities	
• Second twin	
• Low lying placenta	

Potential Differential Diagnoses

The cord can be noted prolapsing from the vagina by the patient following amniotic membrane rupture, or by the healthcare practitioner on vaginal examination. It is a clinical diagnosis and should be acted upon immediately.

Where fetal distress is the presenting issue, typically via a decelerative or bradycardic fetal heartrate, then cord prolapse should be an early consideration. A vaginal examination should be undertaken early with any new or persisting fetal distress, especially when one of the above-listed procedures has recently been completed. Other alternative potential causes of fetal distress include placental abruption, uterine rupture, uterine hyperstimulation, fetal malpresentation, chorioamnionitis, and obstructed labour. Appropriate history, examination, and investigations should be conducted to determine the most likely cause, and appropriate management commenced.



Management Algorithm

1. **Confirm the diagnosis of cord prolapse by means of a vaginal examination**

   Do this in a timely manner – the earlier the problem is diagnosed (and managed), the better the outcome is likely to be for the baby

   Ensure that any intimate examination is conducted using the principles of respectful patient care

   (See GLOWM guideline 'Respectful Care' https://www.glowm.com/resource_type/resource/pcg/title/respectful-care-and-womens-rights/resource_doc/2998)

   Sometimes the cord will be easily visible externally; other times an internal digital vaginal examination will be required – the cord is felt as a relatively soft, potentially pulsating structure, separate from the fetal presenting part

   If no cord is palpated, then consider other potential causes for fetal distress

Have a low threshold for re-examining, or obtaining a second opinion from an experienced colleague, especially if the fetal distress continues

2. **If a cord prolapse is diagnosed, aim to deliver the fetus as soon as possible**

   Call for help in order to obtain assistance from the team, to achieve delivery as quickly and safely as possible

   - **If the cervix is not fully dilated:**

     Aim for delivery via urgent (category 1) Caesarean section

   - **If the cervix is fully dilated:**

     If there is a healthcare practitioner trained in instrumental vaginal delivery, the fetus is in a position where this would be safe, and all equipment is available → aim for an urgent vaginal delivery, using forceps or ventouse to expedite the birth

     The shortest possible time to delivery is important, and in some cases a vaginal approach can be the quickest method; however, it is important only to attempt this if confident f achieving a quick and safe delivery

     If equipment and/or expertise is not available, or the presenting part is not in an appropriate position to allow instrumental delivery, then aim for an urgent (category 1) caesarean section

     Breech extraction is appropriate under some circumstances – for example, in the delivery of a second twin after internal podalic version

   Whichever mode of delivery is intended, remove the pressure of the presenting part from the prolapsing cord until the fetus is delivered

   - Place a hand gently inside the vagina
   - With fingers splayed (or a flat palm) support the fetal presenting part at 3–4 different points
   - Gently apply consistent upward pressure on the presenting part, to reduce its downward compression on the cord
   - Continue to do this until such time that the team are ready to perform the delivery
   - Try not to handle the cord if possible as this can cause it to spasm – which limits its function

3. **If immediate delivery (vaginal or Caesarean) is not possible, aim to transfer the patient to a health facility that can complete this; aim to do this as soon as possible**

   Where expertise and/or equipment is not available for immediate delivery, then a transfer to another health facility where this can take place is indicated; it is critical that this is undertaken as an emergency

   Good communication is essential, in order to ensure that the referral hospital is anticipating the patient and able to perform the delivery quickly and safely once she arrives

   (See GLOWM guideline – 'Patient Transfer')

   Where delay in delivery is anticipated, use techniques to elevate the presenting part from the prolapsing cord until the fetus is delivered

Manual (digital) upward pressure – as described in step 2 – is still an option, but can be impractical and less effective if there is likely to be a delay in delivery, for example

if patient transfer is required

Alternatives include:

- **Bladder distension**

  An indwelling catheter is inserted into the bladder, and 500 mL of fluid e.g. normal saline) passed into the bladder from externally, then the catheter tube spigoted – this distends the bladder, which helps to raise the presenting part of the fetus away from the prolapsed cord

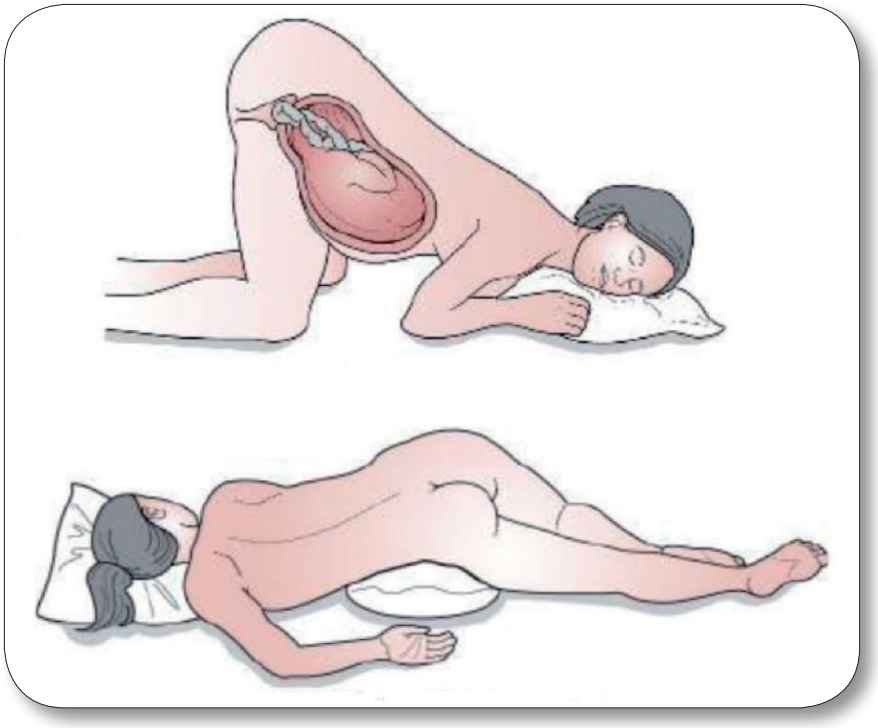
  This can remain in place until the time of delivery

  The bladder must be emptied fully just prior to delivery

- **Patient positioning**

  The patient can be placed in a position that encourages the weight of the fetus not to press down on the prolapsed cord

  - In the ***'knee-to-chest'*** position, the patient kneels with her pelvis high in the air
  - In the **'exaggerated Sims'** position, her hips are elevated with the use of pillows



These positions may not be safe or practical while the patient is in transit

A combination of <u>both</u> bladder distension and patient positioning may be utilised

Such measures to elevate the presenting part should be used while awaiting delivery, but must <u>never delay</u> this

4. Anticipate that the baby may be born in poor condition, so ensure that a healthcare practitioner trained in neonatal resuscitation (plus essential equipment) is present for delivery

Associated GLOWM Resources

- Umbilical cord prolapse and other cord emergencies
  https://www.glowm.com/section_view/item/136
- Umbilical cord pathology
  https://www.glowm.com/section_view/item/151/recordset/18975/value/151#7541
- Normal labor and delivery
  https://www.glowm.com/section_view/item/127

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