Umbilical Cord Presentation and Prolapse

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CQC Fundamental standards: Regulation 9 – person centred care Regulation 10 – dignity and respect Regulation 11 – Need for consent Regulation 12 – Safe care and treatment Regulation 13 – Safeguarding service users from abuse and improper treatment. Regulation 14 – Meeting nutritional and hydration needs. Regulation 15 – Premises and equipment Regulation 16 – Receiving and acting on complaints. Regulation 17 – Good governance Regulation 18 – Staffing Regulation 19 – Fit and proper			

Disclaimer

Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.

The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

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Guideline Statement

To enable staff to care for women with cord presentation and cord prolapse.

Executive Summary

The objectives of this guideline are aimed to ensure best practice in relation to the care of a woman presenting with a cord prolapse or cord presentation in the hospital or community setting.

Objectives

- To ensure that multi-disciplinary safe care is provided.
- To provide evidence-based guidance
- To standardise the recognition, management, and documentation of Cord Prolapse.

1.0 Roles and Responsibilities:

Doctors – decision making, discussion, planning and delivering intrapartum-partum care.

Midwives– decision making, antenatal and intrapartum care.

Annual attendance at obstetric emergencies training including management of cord prolapse is expected for both Obstetricians and Midwives.

2.0 Implementation and dissemination of document

This Guideline has followed the Guideline review process and is accessible via the Trust Intranet.

3.0 Processes and procedures

3.1 Definitions

- Cord prolapse is defined as the descent of the umbilical cord through the cervix alongside (occult) or past the presenting part (overt) in the presence of ruptured membranes (RCOG 2014).

- Cord presentation is the presence of the umbilical cord between the fetal presenting part and the cervix, with or without membrane rupture (RCOG 2014).

- Vasa praevia is the presence of umbilical vessels running in the fetal membranes over the internal os in front of the presenting fetal part.

3.2 Incidence

- The overall incidence of cord prolapses ranges from 0.1% to 0.6% (RCOG 2014).

- In breech presentation, the incidence is higher at 1% (RCOG 2014).

- Cord prolapse carries a perinatal mortality rate of 91/1000(RCOG 2014). □

3.3 Risk Factors

Fetal	Prematurity less than 37 weeks Breech May-positions- Transverse/oblique lie Multiple pregnancy (second twin) Low birth weight (less than 2.5Kg) Fetal congenital anomalies High presenting part.
Amniotic fluid	Polyhydramnios,
Uterus	Grand multigravida
Placenta	Low lying placenta, other abnormal placentation
Pelvis	Cephalo -pelvic disproportion. Pelvic Tumour
Cord	Long cord/cord presentation
Human factors	Artificial rupture of the membranes, External cephalic version (during procedure), Internal podalic version (delivery of 2nd twin), stabilising induction of labour

- These factors predispose to cord presentation and prolapse by preventing close application of the presenting part to the lower uterus and/or pelvic brim.

- Rupture of membranes in such circumstances compounds the risk of cord prolapse.

4.0 Antenatal care for women with predisposing factors

i) Women with transverse, oblique or unstable lie should be advised to contact the maternity unit and present immediately if there are any signs of labour or suspicion of membrane rupture.
ii) In women with transverse, oblique or unstable lie, discuss and offer elective admission to hospital after 37+0 weeks of gestation.
iii) Women with non-cephalic presentations and preterm prelabour rupture of membranes should be recommended inpatient care.

If the above advice (i and ii) is declined by the woman, there should be discussion of risks to mother and baby, including the risk of cord prolapse and this should be documented in ecare notes. This decision should be discussed and agreed by the on-call Consultant.

iv) Membrane rupture should be avoided wherever possible if the presenting part is mobile.
v) If it becomes necessary to rupture the membranes, consider doing this in the operating theatre or in a setting that is conducive to immediate operative delivery.
vi) Vaginal examination and obstetric intervention with ruptured membranes and a high presenting part carries the risk of upward displacement and cord prolapse. Upward pressure on the presenting part should be avoided in such women.
vii) When rupturing membranes, the team should consider employing techniques such as fundal pressure to reduce upward deflection of the presenting part.
viii) Routine ultrasound examination is not sufficiently sensitive or specific for identification of cord presentation antenatally and SHOULD NOT be performed to predict increased probability of cord prolapse, unless in the context of a research setting.

5.0 Processes and procedures

Cord presentation and cord prolapse may occur without outward physical signs and with a normal fetal heart rate pattern. The presentation of a cord should be excluded at every vaginal examination in labour and after spontaneous rupture of membranes (SROM) if risk factors are present or if there are cardiotocograph (CTG) abnormalities, particularly bradycardia.

5.1 Cord Presentation & Vasa Praevia

If a cord or vasa praevia is felt or suspected to be present with intact membranes the following actions should be taken:

- Rupture of membranes should not be performed if on vaginal examination the umbilical cord is felt below the presenting part.
- Discontinue the vaginal examination immediately in order to reduce the risk of spontaneous rupture of membranes.
- Commence continuous fetal monitoring if not in progress.
- Place in left lateral, knee chest position or steep head down (Trendelenburg OR exaggerated Sims) position.
- Remove vaginal prostaglandins if present.
- Discontinue Oxytocin Infusion if in progress.
- Rapid call for the on-call Obstetric Registrar.
- When cord presentation is diagnosed in established labour caesarean section is usually indicated. Examination in theatre should be considered before proceeding to caesarean section.

5.2 Cord Prolapse

Cord prolapse should be suspected where there is an abnormal fetal heart rate pattern (bradycardia, variable decelerations etc.), particularly if such changes commence soon after membranes rupture (spontaneously or with amniotomy).

5.3 Diagnosis

- Doctors and midwives must be aware of the risk factors associated with both cord presentation and cord prolapse.
- Rapid identification and response will save the life of the baby.

- The prolapse can be identified by:

  -Feel for the cord and exclude the presence of umbilical cord at each examination.
  -The cord may visualized be extruded from the vagina, or wrapped around the presenting part.
  -An abnormal fetal heart rate pattern, especially if such changes commence soon after membrane rupture, either spontaneous or artificial.

- A vaginal examination should be performed in labour and after spontaneous rupture of membranes (SROM) if risk factors for cord prolapse are present OR if cardiotocograph abnormalities commence soon after SROM.

- Speculum or digital vaginal examination should be performed at preterm gestation when cord prolapse is suspected.

- When spontaneous rupture of membranes occurs, if there is normal fetal heart rate monitoring and there are no risk factors for cord prolapse, then a routine vaginal examination is not indicated.

5.4 Management

This is an Obstetric emergency. It requires immediate corrective measures to prevent fetal asphyxia and a coordinated multidisciplinary team approach is essential.

5.4.1 Cord management

To prevent vasospasm, there should be minimal handling of loops of cord lying outside the vagina (RCOG 2014). Reduction of temperature and cooling of the cord can cause vasospasm, but over handling of the umbilical cord also risks vasospasm and continued cord compression (Lin 2006).

5.4.1

i. If the cord remains in the vagina:

- Apply direct digital pressure to elevate the presenting part, as this decreases decompression of the cord.
- Avoid palpating the cord for pulsation; CTG abnormalities will indicate integrity of blood flow to fetus.
- Assess vaginal dilatation, presentation and station of the presenting part.

ii. Cord protrusion outside the vagina:

- With minimal handling, a small loop of cord may be replaced back into the vagina.
- If the cord cannot be replaced into the vagina with minimal handling, apply warmed soaked normal saline gauze/ towels over the cord and replenish as needed.

5.5 Options to relieve cord compression

- **Maternal position** - Tip the head of the bed down (Trendelenburg). Position the woman to encourage the fetus to gravitate towards the diaphragm- knee-chest position or exaggerated Sims position.

- **Manual elevation** of the presenting part by a gloved digital vaginal examination and pushing it upwards and above the pelvic brim.

- **Bladder filling** - Insert a Foleys catheter to empty the bladder fully (to ensure the bladder is not over extended), then rapidly fill the bladder with 500mls Normal Saline via an infusion set to elevate the fetal presenting part. Clamp the catheter using giving set clamp.

  Ensure the clamp is released and the bladder emptied before commencement of Caesarean section and delivery.

5.6 Management in the community setting

Perinatal mortality is increased by more than tenfold when cord prolapse occurs outside compared with inside hospital (RCOG 2014). Delay in transfer to hospital appears to be an important contributing factor.

5.6.1. Telephone management in the community setting where no midwife is present.

- Women who contact the labour ward with a history which suggests cord prolapse, should be advised over the telephone, to assume the knee-chest face down position while waiting for hospital transfer.
- Remain on telephone to provide reassurance and advice to woman or her relatives.
- Call '999' and ask for a time critical emergency ambulance (or equivalent depending on updated guidance).
- Consider requesting the community midwife to attend but this must not delay transfer.
- During the ambulance transfer, advise that attempts be made to maintain elevation of the presenting part, taking into consideration the woman's safety.

5.6.2. Where a midwife is present

i. Institute measures to relieve cord compression, for example, maternal positioning, knee-chest, face-down position.

ii. Call '999' and ask for a time critical emergency ambulance.

iii. Contact Labour Ward and inform them of the situation and expected time of arrival.

iv. All women with cord prolapse should be transferred to the nearest Consultant-led unit for delivery, unless an immediate vaginal examination by a competent professional reveal that a spontaneous vaginal delivery is imminent. Preparations for transfer to hospital should still be made.

v. An ultrasound scan is to be available upon arrival to Labour Ward.

vi. During the ambulance transfer, attempt to maintain elevation of the presenting part, taking into consideration the woman's and the midwife's safety. The knee to chest is potentially unsafe and the exaggerated Sims(left lateral position with pillow under the hip) OR Trendelenburg with digital pressure should be used.

vii. If delivery is imminent proceed with delivery, prepare for neonatal resuscitation, but do not stand down ambulance until woman and baby are safely delivered.

viii. It may be appropriate to transfer directly to theatre rather than the labour ward.

5.7 Management in a hospital setting:

- When cord prolapse is diagnosed an Obstetric Emergency call should be made (2222) and medical assistance sought immediately.
- Initiate measures to relieve cord compression, avoiding unnecessary delay.
- **Start bladder filling- see above.**
- Whilst waiting for the obstetric team, midwives to give a brief explanation to parents.
- Discontinue Syntocinon if in progress.
- Preparations should be made for immediate transfer to theatre for delivery.
- **If immediate vaginal birth is not feasible then the delivery should be by Caesarean section.**

  1. A Category 1 Caesarean section should be performed if there is associated suspicious or pathological CTG.
  2. Category 2 Caesarean section can be performed if the fetal heart rate is normal, but fetal heart assessment should continue with CTG. If the fetal heart becomes abnormal then re-categorisation to Category 1 should be done.

- Tocolysis can be considered while preparing for caesarean section if there are persistent fetal heart rate abnormalities after attempts to prevent compression mechanically, particularly when birth is likely to be delayed. The suggested tocolytic regimen is Terbutaline 0.25mg subcutaneously.
- Verbal consent is considered satisfactory, due to time limitations. This should be clearly documented and witnessed in the notes.
- Maintain communication with the Obstetric Anaesthetist, to ensure appropriate choice of anaesthesia i.e regional- spinal versus general anaesthesia. Regional anaesthesia can be considered with an experienced Anaesthesia.
- If the woman is fully dilated and the foetus can be born more quickly and safely vaginally than by caesarean, then forceps, vacuum or breech extraction may be undertaken.

  -Occult cord prolapse at forceps delivery. This is a rare complication. Sudden bradycardia on inserting or locking one or other of the forceps blades in the absence of overt cord prolapse may indicate a covert cord prolapse and cord entrapment by the blade.

  -Immediately remove the blade(s) and reapply them carefully between the baby's head and the operator's left hand. If there is no further deceleration deliver as normal. If there is a further deceleration the operator must make a decision as to whether it will be quicker to proceed or perform a caesarean. Either way a paediatrician should be called immediately to be present in case of the need for resuscitation.

- It may be appropriate to transfer directly to theatre rather than the labour ward if the cord prolapse occurs on the maternity wards**.** During transfer to theatre maintain examining fingers in the vagina and elevate the presenting part to relieve pressure on the umbilical cord.

- A practitioner competent in the resuscitation of the new-born should attend all deliveries with cord prolapse.
- A scribe must record the times of events as accurately as possible.
- Delayed cord clamping (DCC) can be considered if a baby is uncompromised at birth however, immediate resuscitation should take priority over DCC when the baby is unwell at birth.
- Paired cord blood samples must be taken for pH and base excess measurement.
- If a fetal heart is absent, an ultrasound scan should be performed, and confirmation of an intrauterine death would not require a caesarean birth.

5.7.1 Optimal Management at the Threshold of Viability

- Expectant management should be discussed for cord prolapse complicating pregnancies with a gestational age at the threshold of viability (23+0 to 24+6 weeks)
- Clinicians should be aware that there is no evidence for cord replacement to improve outcomes for expectant management.
- Women should be counseled on both continuation and the termination of pregnancy at the threshold of viability.

5.8 Debriefing

- Debriefing is an important part of maternity care and women should be offered the opportunity to discuss their birth experience.
- In the first instance, this should be done at the earliest after delivery by the Obstetric team and documented in electronic notes.
- After an obstetric emergency, a woman can be psychologically affected with postnatal depression, post-traumatic stress disorder or fear of further childbirth. A referral to the Talk for Change service should be offered.
- Birth Afterthoughts meeting.
- It may also be necessary for staff who may have been traumatised by the event to be debriefed. Please refer to the Staff Support following Traumatic Event **Guideline**.

5.9 Clinical incident reporting

A Datix report should be completed for all cases of cord prolapse.

5.10 Documentation

A preformatted sheet should be used for the recording of clinical events related to cord prolapse (see Appendix 1)

6.0 Statement of evidence/references

References

Carlin A, Alfirevic Z. Intrapartum fetal emergencies. Seminars in Fetal & Neonatal Medicine. 2006;11:150-57.

Dilbaz B, Ozturkoglu E, Dilbaz S, et al. Risk factors and perinatal outcomes associated with umbilical cord prolapse. Arch Gynecol Obstet. 2006;274:104-07.
Lin MG. Umbilical cord prolapse. Obstetric and Gynecological Survey. 2006;61(4):269-77.

Nursing and Midwifery council (NMC). (2015). The Code. Professional standards of practice and behaviour for nurses and midwives. Available at: http://www.nmc.org.uk/globalassets/sitedocuments/nmc-publications/revised-new-nmc-code.pdf

Royal College of Obstetricians and Gynaecologists (2014) Umbilical Cord Prolapse. Green-top Guideline No 50. London: RCOG.

Usta IM, Mercer BM, Sibai BM. Current obstetrical practice and umbilical cord prolapse. American journal of perinatology. 1999; 16(9):479-84.

Winter,C. Crofts,J. Draycott,T (2017), PROMPT, Practical Obstetric Multi-Professional Training, Cambridge:Cambridge University Press.

7.0 Governance

7.1 Document review history

Version number	Review date	Reviewed by	Changes made
7	18/06/2021	Kate Omonua/ Miss Swati Velankar	Complete review

7.2 Consultation History

Stakeholders Name/Board	Area of Expertise	Date Sent	Date Received	Comments	Endorsed Yes/No
Mary Plummer	Maternity Matron	22.2.18	27.2.18	Minor comments made	Yes
Omar Mulki	Consultant	17.5.18	7.6.18	Minor amendments made	Yes
Julie Cooper	Head of Midwifery	22.2.18	17.6.18	Minor amendments made and returned to author	Yes
Ed Neale	Divisional Director	22.2.18	28.2.18	Minor amendments made and comments returned to author	Yes
Maternity digital review group	Women and Children	18/06/20			
Women's Health CIG	Women and Children	04/08/21		Approved	

7.3 Audit and monitoring

Audit/Monitoring Criteria	Tool	Audit Lead	Frequency of Audit	Responsible Committee/Board
a) Number of reported cases of cord presentation and prolapse.	a) Received Datix forms	a) Risk Midwife	a) Monthly review	Labour Ward Forum

b) Process followed after diagnosis	b) Bi annual audit	b) Junior doctors'	b) annual audit	Clinical Improvement Group Women's health CSU

7.4 Equality Impact Assessment

As part of its development, this Guideline and its impact on equality has been reviewed. The purpose of the assessment is to minimise and if possible remove any disproportionate impact on the grounds of race, gender, disability, age, sexual orientation, religion or belief, pregnancy and maternity, gender reassignment or marriage and civil partnership. No detriment was identified. Equality Impact assessments will show any future actions required to overcome any identified barriers or discriminatory practice.

Equality Impact Assessment			
Division	Women and Children	Department	Maternity
Person completing the EqIA	Miss Swati Velankar	Contact No.	
Others involved:	Kate Omonua	Date of assessment:	18/06/21
Existing policy/service	Yes	New policy/service	No

Will patients, carers, the public or staff be affected by the policy/service?	Yes
If staff, how many/which groups will be affected?	*All*

Protected characteristic	Any impact?	Comments
Age	NO	Positive impact as the policy aims to recognise diversity, promote inclusion and fair treatment for patients and staff
Disability	NO	
Gender reassignment	NO	
Marriage and civil partnership	NO	
Pregnancy and maternity	NO	
Race	NO	
Religion or belief	NO	
Sex	NO	
Sexual orientation	NO	

What consultation method(s) have you carried out?
Emails and meetings
How are the changes/amendments to the policies/services communicated?
Email and meetings.
What future actions need to be taken to overcome any barriers or discrimination?

What?	Who will lead this?	Date of completion	Resources needed
Review date of EqIA			

Addressograph

Or name or unit number

Appendix I: Cord prolapse documentation proforma

Please tick the relevant boxes:
Senior midwife called: Yes☐ No☐ Time called:.....
Obstetrician called: Yes☐ No☐ Time called:.....
Grade of obstetrician:.....
Anaesthetist called: Yes☐ No☐ Time called:.....
Neonatologist called: Yes☐ No☐ Time called:.....

Place of diagnosis: Home ☐	Hospital ☐
Transfer to Hospital: Ambulance☐	Own private transfer ☐
Time of diagnosis	
Gestation:	
Cervical dilatation at diagnosis	
Presenting part: Cephalic ☐ breech ☐	Transverse ☐
Procedures used in managing cord prolapse	
Elevating the presenting part manually	Yes ☐ No☐
Filling the bladder	Yes ☐ No☐
Left lateral, head tilted down	Yes ☐ No☐
Knee–chest position	Yes ☐ No☐
Tocolysis with subcutaneous terbutaline	Yes ☐ No☐
Time of delivery …….	
Time of diagnosis to delivery interval ……	
Mode of delivery: SVD☐ Forceps☐ Ventouse ☐ Breech☐ C/S ☐	
Mode of anaesthesia: Spinal ☐ GA ☐ Epidural ☐ Other ☐……	
Fetal Condition	
Resuscitation required: Yes ☐	No☐
Birth Injury noted at delivery	Yes ☐ No☐
Weight:	……Kg
Apgar:	1 minute ……. 5minutes ……. 10minutes ……
Cord PH:	Arterial pH……..BE…… Venous pH……BE…….
Baby to SCBU:	Yes☐No☐ Reason if Yes:.....
Completed Incident form:	Yes ☐ No☐
Known risk factors?,please state	……
Debrief?	Yes ☐ No☐

Signature:.....
Print:.....
Designation:..... Date:.....

Appendix II: Flowchart