University Hospitals Sussex
NHS Foundation Trust

CLINICAL PROTOCOL

Cord Prolapse Management Protocol

Contents

1.0 Introduction

Professional judgement may be used in the application of this protocol for the management of prolapse of the umbilical cord to improve perinatal outcome.

This protocol aims to safely and efficiently manage umbilical cord prolapse to minimise maternal or birthing parent and fetal risk.

Cases of cord prolapse feature consistently in perinatal mortality enquiries. Prematurity and congenital malformations account for the majority of adverse outcomes in hospital, but birth asphyxia is also associated with cord prolapse. Perinatal death has been described with term babies with no known anomalies, particularly with planned home birth. Delay in transfer to hospital appears to be an important contributing factor.

2.0 Definition

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 presenting part and the cervix, with or without membrane rupture.

3.0 Incidence

The overall incidence of cord prolapse ranges from 0.1% to 0.6%. In the case of the breech presentation, the incidence is slightly higher than 1% (RCOG 2014).

4.0 Risk factors associated with cord prolapse

Fetal	Maternal	Iatrogenic
Cord- long cord/cord presentation	Multi-parity	Artificial rupture of membranes
Breech presentation	Placenta-low-lying placenta, other abnormal placentation	External cephalic version
Transverse, oblique and unstable lie (Unengaged presenting part, malpresentation)	Contracted pelvis. Pelvic exostoses spondylolisthesis.	Stabilising induction of labour
Prematurity <37 weeks gestation	Pelvic tumour - Anterior sacrococcygeal	Large balloon catheter IOL*
Low birth weight – less than 2.5kg		Internal podalic version
Fetal congenital anomalies - hydrocephalus		
Multiple pregnancy (second twin)		
Polyhydramnios		

(Ahmend & Hamdy 2018)

4.1 Additional risk associated with balloon induction of labour*

Since the introduction of balloon induction with Cook's Ripening Ballon, a number of cord presentation/prolapse incidences have been noted and investigated. Although no direct link was found, it was decided to reduce the volume of both the uterine and vaginal balloons to 40mls in order to see if the volume in the balloons was causing head displacement and contributing to cord presentation/prolapse.

It is the responsibility of the assessing professional to do a thorough abdominal and vaginal examination prior to ARM for suitability.

5.0 Antenatal care for those pregnant women and birthing people with predisposing factors

Pregnant women and birthing people with transverse, oblique or unstable lie, or polyhydramnios, after 37+0 weeks of gestation or non-cephalic presentations and preterm pre-labour rupture membranes should be reviewed by Obstetric Consultant/Obstetric Registrar.

Advised when in the community to present urgently if there are signs of labour or suspicion of membrane rupture.

Expectant management should be discussed for cord prolapse complicating pregnancies with gestational age at the threshold of viability (23+0 to 24+6 weeks).

Artificial rupture of membranes should be avoided whenever possible if the presenting part is mobile. If it becomes necessary to rupture the membranes, this should be performed with arrangements in place for immediate caesarean birth.

6.0 Cord presentation

When cord presentation (with intact membranes) is diagnosed in established labour caesarean birth is usually indicated. Where there are no signs of fetal compromise, this can be classified as category 2 caesarean section.

7.0 Diagnosis

Rapid identification and response may save the life of the baby. Speculum or vaginal examination should be undertaken immediately to confirm diagnosis of prolapsed cord and to ascertain cervical dilatation in order to plan management. Prompt vaginal examination is the most important aspect of diagnosis even in a premature labour when prolapsed cord is suspected.

The prolapse can be identified by:

1. Visual inspection
2. Palpation on immediate vaginal examination
3. The cord may be extruded from the vagina or wrapped around the presenting part.

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

With SROM in the presence of a normal fetal heart rate and the absence of risk factors for cord prolapse, routine vaginal examination is not indicated if the liquor is clear.

7.0 Initial management of cord prolapse in the hospital setting

- On discovering a prolapsed cord, summon help by asking relative to pull emergency buzzer but **do not remove your fingers from the vagina** (unless no one else in room)**.** Push presenting part high but avoid palpating the cord.
- When cord prolapse is diagnosed before full dilatation - Call for help immediately - Dial **2222** stating **"Cat 1 Caesarean Section"** according to hospital site.
- This call will initiate an emergency bleep to include senior midwife, obstetric registrar, anaesthetist and neonatologist/ANNP.
- Mode of birth should be decided by the Obstetric Consultant/ Registrar.
- Preparations (IV access, group and save, U&Es) made for a caesarean birth as the recommended mode of birth in cases of cord prolapse when vaginal birth is not imminent (Winter *et al.* 2017).
- Verbal consent is satisfactory for category 1 caesarean birth.
- A category 1 caesarean birth should be performed with the aim of birth within 30mins or less if there is a cord prolapse associated with a non-reassuring or abnormal fetal heart rate pattern but without unduly risking maternal safety.
- A category 2 caesarean birth is appropriate for women and birthing people in whom fetal heart rate pattern is normal.
- Communicate clearly with the woman or birthing person and any birthing partners about the situation and what is happening. Gain consent for procedures as required. Remember contemporaneous documentation on BadgerNet Maternity - nominate a scribe as soon as possible.
- Cord compression can be reduced by the woman or birthing person adopting the knee - chest position (Trendelenburg position) or head down tilt (preferably in the left lateral). If an epidural is sited, place the mother in the left lateral position.
- Use CTG and/or ultrasound scan to ascertain the fetal heart rate (FHR) and presentation.
- Discontinue Oxytocin if in use.
- Discussion with the anaesthetist should take place to decide on the appropriate form of anaesthesia. Regional anaesthesia can be considered in consultation with an experienced anaesthetist.
- Tocolysis can be considered while preparing for caesarean section (Stat dose **TERBUTALINE 0.25 milligrams** subcutaneously).
- If delay to theatre is expected, measures to relieve cord compression should be attempted such as Vago's method (bladder filling) (Ahmed & Hamdy 2018).
- Consider bladder filling by inserting a Foley's catheter (see below). This will keep the presenting part out of the pelvis thereby alleviating compression of the cord.

7.1 Method for bladder filling

Attach a standard infusion set to a 16g indwelling Foley's catheter.	A full bladder can inhibit uterine activity and reduce compression on the cord by raising the presenting part.
Instil sodium chloride 0.9% infusion into the catheter until the distended bladder is visible above the symphysis pubis.	500ml of solution (warmed or at room temperature) is generally sufficient to fill an empty bladder. Do not use more than 750ml solution. Caution is advised if the woman has not recently voided.
Clamp the catheter and attach to a drainage bag (use cord clamp in the community, if catheter clamp not available-ensure cord clamp remover is available) Remove the clamp and allow urine to drain when the time is appropriate in theatre.	The infusion clamp should be removed and the bladder emptied just before entering the peritoneal cavity during caesarean section.

- Transfer to theatre immediately unless cervix fully dilated and presenting part is at or below ischial spines so that immediate forceps or ventouse can be performed. Forceps birth carries a risk of trauma to or compression of the cord; but may be the most appropriate way to expedite birth.
- If the cord prolapsed outside vagina and delay in transfer to theatre is anticipated, consider wrapping the cord in warm wet packs. However, there should be minimal handling to prevent vasospasm.
- A practitioner competent in the resuscitation of the newborn should attend all births with cord prolapse. Paired cord blood samples should be taken for pH, base excess and lactate measurements.
- Vaginal birth, in most cases operative, can be attempted at full dilatation if it is anticipated that birth would be accomplished quickly and safely. Breech extraction can be performed under some circumstances, such as after internal podalic version for the second twin.
- If no fetal heart auscultated confirm intrauterine death using ultrasound and aim for a vaginal birth.
- If non-viable gestation discuss with senior obstetric staff and aim for a vaginal birth.
- Complete incident reporting form (Datix).

8.0 Initial Management of cord prolapse in the community setting

- If diagnosed at home, ask a relative to dial **999** and urgently call a paramedic ambulance for immediate transfer to Labour Ward (Appendix 1).
- Inform maternity unit of situation, imminent arrival and theatre preparation.
- All women and birthing people should be transferred to the maternity unit for birth, unless an immediate vaginal examination by a professional reveal that a spontaneous vaginal birth is imminent. Preparations for transfer should still be made (NICE 2023).
- Women and birthing people should be advised over the telephone if necessary to assume the knee–chest face-down position while waiting for hospital transfer.

- The presenting part should be elevated during transfer by either manual elevation or consideration should be given where possible to filling the bladder to relieve pressure on the cord (see above).
- During emergency ambulance transfer the knee chest is potentially unsafe. Use the exaggerated sims position and the left lateral position should be used preferably with head down and pillow under the left hip.
- To prevent vasospasm, there should be minimal handling of loops of cord lying outside the vagina.
- Complete incident reporting form (Datix).

9.0 Debriefing

Postnatal debriefing should be offered to all women and birthing people with cord prolapse as this can reduce the incidence of post-traumatic stress disorder, fear of further childbirth and postnatal depression.

This should ideally be undertaken by a registrar or consultant involved in the care before the woman or birthing person is discharged home. It should involve discussing what happened and why and answering any questions the mother or birthing person / family have. Referral to a Midwife Counsellor is recommended. Signpost women and birthing people to the RCOG patient information leaflet.

10.0 Training

Midwives and medical staff involved in maternity care will receive at least annual training in the management of obstetric emergencies including the management of cord prolapse – see UHSC072 Maternity Education Strategy.

11.0 Monitoring

Clinical incident forms should be submitted for all cases of cord prolapse.

RCOG (2017) recommended auditable topics:

- Audit of the management of cord prolapse in hospital settings.
- Audit of the management of cord prolapse in community settings.
- Proportion of cases of cord prolapse that were incident reported.
- Synthesis of critical analyses of adverse outcomes related to cord prolapse.

References

NICE (2023) *Intrapartum Care for Healthy Women and Babies* National Collaborating Centre for Women and Children. RCOG press p.127-128

RCOG (2014) reviewed (2017) Umbilical Cord Prolapse, Green Top guideline no. 50 http://www.rcog.org.uk

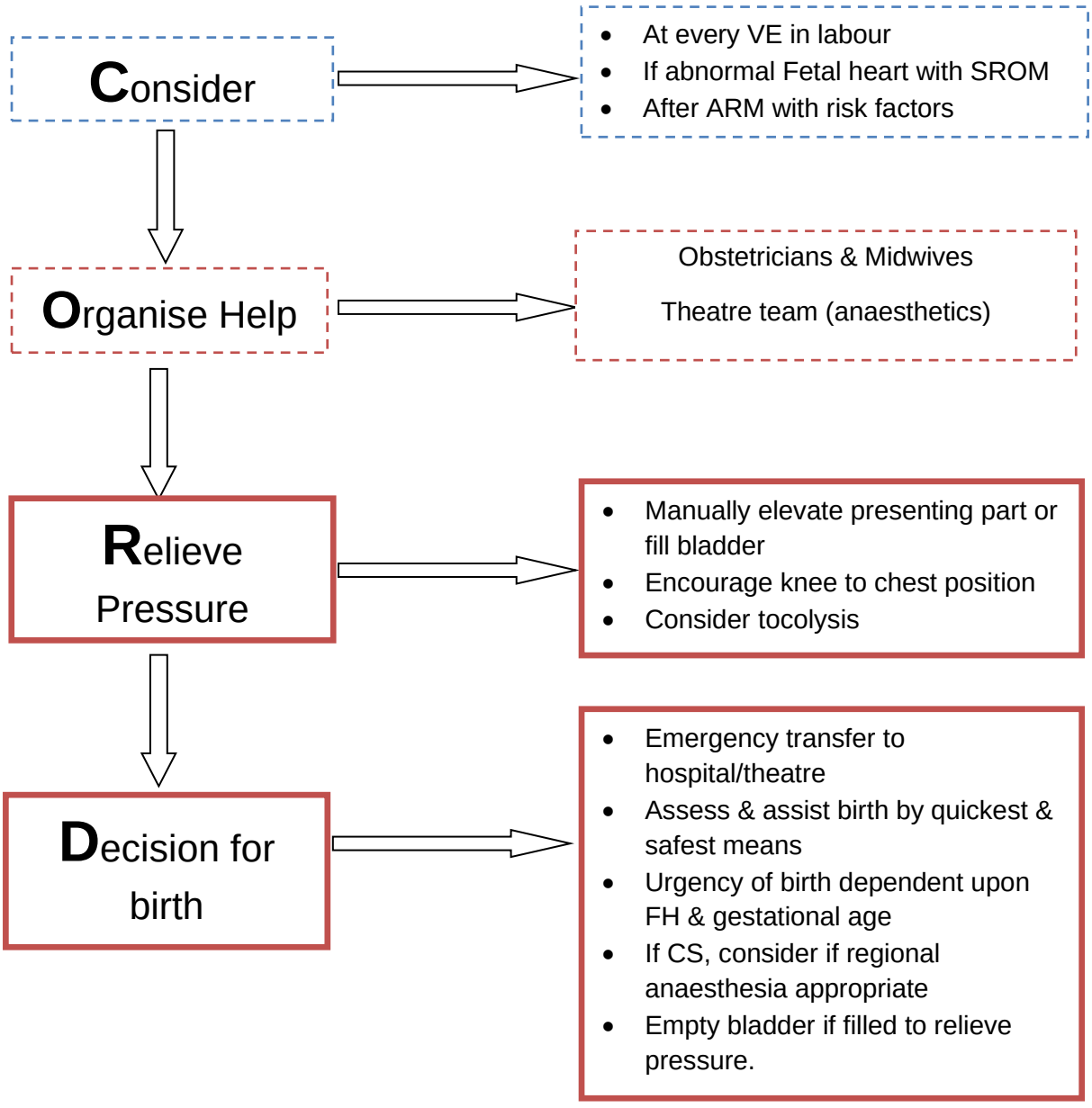
RCOG (2015) Umbilical cord prolapse in late pregnancy information for you, setting standards to improve women's health (patient information leaflet).

Sayed Ahmed WA, Hamdy MA. (2018) *Optimal management of umbilical cord prolapse*. Int J Womens Health. 10:459-465. doi: 10.2147/IJWH.S130879. PMID: 30174462; PMCID: PMC6109652.

Winter C, Crofts J, Laxton C, Barnfield S, Draycott T, editors. (2017) PROMPT: PRactical Obstetric Multi-Professional Training. Practical locally based training for obstetric emergencies. Module 10. Cord Prolapse. Course Manual. 2nd ed. Cambridge: Cambridge University Press; p.169–78

Appendix 1: Suggested actions for management of Cord Prolapse Flowchart (RCOG, 2017)

C.O.R.D



Clinical protocol governance and approval

Owner	S. Adamson & F. Usifo
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Protocol version	v1.0
Related policies	UHSC072 Maternity Education Strategy
Related documents	MP050 Caesarean Section 2022 CG12030 Caesarean Section Birth Guideline 2023
Standards	NICE (2023) *Intrapartum Care for Healthy Women and Babies* National Collaborating Centre for Women and Children. RCOG press p.127-128 RCOG (2014) reviewed (2017) Umbilical Cord Prolapse, Green Top guideline no. 50 http://www.rcog.org.uk
Superseded documents	MP047 Cord Prolapse CG12026 Cord Prolapse Guideline
Review due	November 2027
Date uploaded	07/11/2024

Approval

Departmental Joint Obstetric Guideline Group (JOGG)	**Date approved:**	19/06/2024
Women's and Children Divisional Governance Group	**Date approved:**	19/10/2024

Consultation

Medicines Governance Committee	**Date approved:**	16/10/2024

Ratification

Clinical Document Approval Group	**Date approved:**	01/11/2024

Protocol version control log

Version	Date	Author(s)	Comment
1.0	June 2024	S. Madell, Guideline & Audit Midwife	New UH Sussex merged protocol replacing: • MP047 Cord Prolapse • CG12026 Cord Prolapse