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Guideline for the Management of Umbilical Cord Prolapse

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Guidelines Definition

Clinical guidelines are systemically developed statements that assist clinicians and patients in making decisions about appropriate treatments for specific conditions.

They allow deviation from a prescribed pathway according to the individual circumstances and where reasons can be clearly demonstrated and documented.

Minor Amendments

If a minor change is required to the document, which does not require a full review please identify the change below and update the version number.

Type of change	Why change made	Page number	Date of change	Version 1 to 1.1	Name of responsible person

Equality Impact Assessment Statement

This Procedure has been subject to a full equality assessment and no impact has been identified.

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Introduction

The purpose of this guideline is to prevent, diagnose and manage umbilical cord prolapse in both hospital and community settings. Cord prolapse is an obstetric emergency. Urgent delivery is required or fetal asphyxia leading to death can rapidly occur. The asphyxia is due to:

- mechanical compression of the cord between the presenting part and the bony pelvis.
- spasm of the cord vessels secondary to cold and/or manipulation.

Prompt recognition and appropriate action are essential in improving outcomes.

Definition

Cord prolapse is the presence of the umbilical cord through the cervix alongside (occult) or past the presenting part (overt), in the presence of ruptured membranes. The incidence is ranges from 0.1% to 0.6%. In non cephalic presentations, the incidence is 1%. It has been reported that male fetuses appear to be predisposed to cord prolapse.

Perinatal mortality varies in different studies. The presence of risk factors should raise awareness, but the occurrence of cord prolapse remains extremely unpredictable. A common feature of all the risk factors is a poorly applied fetal presenting part. Delay in transfer to hospital is a contributing factor for adverse outcomes.

Risk factors for Cord Prolapse

General	Procedure Related
Multiparity	Artificial rupture of the membranes
Low birth weight < 2.5Kg	Vaginal manipulation of the fetus with ruptured membranes
Prematurity <37 weeks	External cephalic version procedure
Fetal congenital abnormalities	Internal podalic version

Breech presentation	Stabilizing induction of labour
Transverse, oblique and unstable lie	Insertion of a uterine pressure transducer
Second twin	Large balloon catheter induction of labour
Polyhydramnios	Fetal scalp electrode application
Unengaged presenting part	
Low lying placenta	

Clinical Risk Management

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. Selective ultrasound screening can be considered for women with breech presentation at term who are considering vaginal birth.

With transverse, oblique or unstable lie, elective admission to hospital after 37+0 weeks of gestation should be discussed, and women remaining at home with known risk factors should be advised to attend hospital urgently if SROM is suspected.

Women who present with suspected spontaneous rupture of membranes (SROM) where there are risk factors for cord prolapse should be admitted to hospital for observation.

Artificial rupture of membranes should be avoided if the presenting part is mobile and/or high. If it becomes necessary to rupture the membranes with a high presenting part, this should be performed with arrangements in place for immediate caesarean section.

The presence of the umbilical cord alongside or below the presenting part should be excluded at every vaginal examination, or if there are any

abnormalities on the cardiotocograph (CTG) following rupture of the membranes.

Diagnosis and Management

Early diagnosis is important. Cord prolapse should be suspected when there is an abnormal fetal heart rate pattern, especially if such changes commence soon after membrane rupture, either spontaneous or artificial. Speculum and/or digital vaginal examination should be performed when cord prolapse is suspected. The soft pulsatile umbilical cord is felt or seen within the vagina. The diagnosis is sometimes made when cord is seen prolapsing out of the vagina.

This is an **OBSTETRIC EMERGENCY. The PROMPT Cord Prolapse Algorithm should be referred to in this situation (Appendix one) as well as using the Cord Prolapse Pro-forma for documentation (Appendix two).**

- Call for help using the emergency call system and ask for obstetric and neonatal emergency team. Another member of staff or relative may have to press the emergency buzzer.
- If cord prolapse occurs outside hospital, an emergency ambulance should be called immediately to transfer the woman to the nearest consultant-led obstetric unit. Even if birth appears imminent, a paramedic ambulance should still be called in case of neonatal compromise at birth.
- Following recognition of cord presentation or prolapse, the presenting part should be elevated to minimise cord compression. This can be achieved by maternal positioning, digital elevation of the presenting part or bladder filling. Tocolysis, Terbutaline 250 micrograms subcuticular injection may also be considered to reduce uterine contractions.
- State the problem when help arrives – ‘cord prolapse’. Staff outside of the hospital should liaise directly with the obstetric unit, clearly stating

reason for transferring the woman with an estimated time of arrival at the hospital. This will ensure appropriate preparations are in place to assist a timely birth upon arrival at the hospital.

- Avoid handling the cord to prevent vasospasm. If the cord is prolapsed out from the vagina, attempt to gently replace it back into the vagina using a DRY pad and with minimal handling.
- Filling the bladder. Ensure the bladder is emptied before filling. If the decision-to-birth interval is likely to be prolonged particularly if it involves ambulance transfer into hospital this may be considered. This can be achieved by using a blood giving set and Foleys catheter, filling the bladder with 500 of sterile 0.9% sodium chloride and then clamping the catheter. Remember to empty the bladder before any method of birth.
- Maternal positioning. The woman should be positioned into knee-chest, face down position, whilst continuing to digitally relieve the pressure on the cord if possible.
- Consider giving tocolytic drugs while caesarean section is being planned if there are fetal heart rate abnormalities. Do not delay delivery.
- If the cord is prolapsed it is necessary to detect if it is pulsating, i.e. live fetus or dead. In the absence of audible fetal heart tones and cord pulsations urgent ultra sound scan is necessary to confirm viability of the fetus.
- Although these measures are potentially useful during preparation for birth, they must not result in unnecessary delay. Preparation for immediate delivery should be made simultaneously.
- In the case of a live fetus, proceed to urgent delivery. Caesarean section is the recommended mode of delivery in cases of cord prolapse when vaginal birth is not imminent in order to prevent hypoxic acidosis. A category 1 caesarean section should be performed with the aim of achieving birth within 30 minutes or less if the cord prolapse is associated with a suspicious or pathological fetal heart rate pattern but

without compromising maternal safety. Category 2 caesarean birth may be considered for women in whom the fetal heart rate pattern is normal, but continuous assessment of the fetal heart trace is essential. If the cardiotocograph (CTG) becomes abnormal, re-categorisation to category 1 birth should immediately be considered.

- 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. Verbal consent is satisfactory for category 1 caesarean section.
- Vaginal birth, in most cases operative, can be attempted at full dilatation if it is anticipated that birth would be accomplished quickly and safely, using standard techniques and taking care to avoid impingement of the cord when possible.
- Delayed cord clamping can be considered if a baby is uncompromised at birth, although immediate resuscitation should take priority over DCC when the baby is unwell.
- Appropriate personal competent at resuscitation should attend for birth.
- Arterial and venous cord blood gases should be taken.

Management in the Midwifery Unit or Home Setting

- The Community PROMPT Wales Cord Prolapse Algorithm (appendix three) should be used in recognition of an umbilical cord prolapse, which will aid in documentation. Therefore the cord prolapse proforma should also be completed at a time of convenience for the community midwife.
- Midwives should assess the risk of cord prolapse for women requesting home birth or birth in centres without facilities for immediate caesarean section and at the start of labour in the community. This should be documented in the maternity notes.
- If cord prolapse is suspected the women should be advised to adopt the knee chest, face down position while waiting for transfer to

hospital. This may be via the telephone if no health professional is present.

- All women with cord prolapse should be advised to be transferred to the nearest consultant-led unit for birth, unless vaginal examination by a competent professional reveals that a spontaneous vaginal birth is imminent.
- An emergency transfer should be requested as there is an immediate risk to life for the mother or baby. In order to arrange an emergency transfer a midwife should **dial 999** in the same way as the public access the service.
- During emergency ambulance transfer, the knee-chest position is potentially unsafe and the exaggerated Sims position (left lateral with pillow under hip) should be used.
- The presenting part should be elevated during transfer either manually or by using bladder distension. This can be achieved by using a blood giving set and Foleys catheter, filling the bladder with 500 of 0.9% sterile sodium chloride and then clamping the catheter.
- To prevent vasospasm, there should be minimal handling of the cord lying outside the vagina using a dry pad.
- As per the All Wales Midwifery Led Care Guidelines, a midwife should remain with the woman throughout the transfer process. It is unacceptable for the midwife responsible for providing care to a woman to follow the ambulance in her car. If there is no space in the ambulance, the baby's father / birth partner has to travel to the obstetric unit in his/her own car or in a taxi.

Debriefing

An opportunity to discuss the events should be offered to the woman (possibly with her companions in labour) at a mutually convenient time.

Record Keeping

Records should detail:-

- Time of recognition of cord prolapse
- Time assistance was called
- Who was called
- Time of arrival of personnel
- Procedures undertaken and the times carried out
- Time and type of birth
- Condition of baby at birth
- Cord blood gas analysis

Complete Proforma (appendix two)

A Datix clinical incident form should be also be completed regardless of outcome

Training Requirements

There should be annual training for all staff who may have to deal with the management of cord prolapse. Regular drills should be undertaken.

References

All Wales Midwifery Care Guidelines, December 2015
<http://www.wales.nhs.uk/sitesplus/documents/861/All%20Wales%20Midwife%20led%20care%20Guidelines%20final%2010%20Dec%20131.pdf>

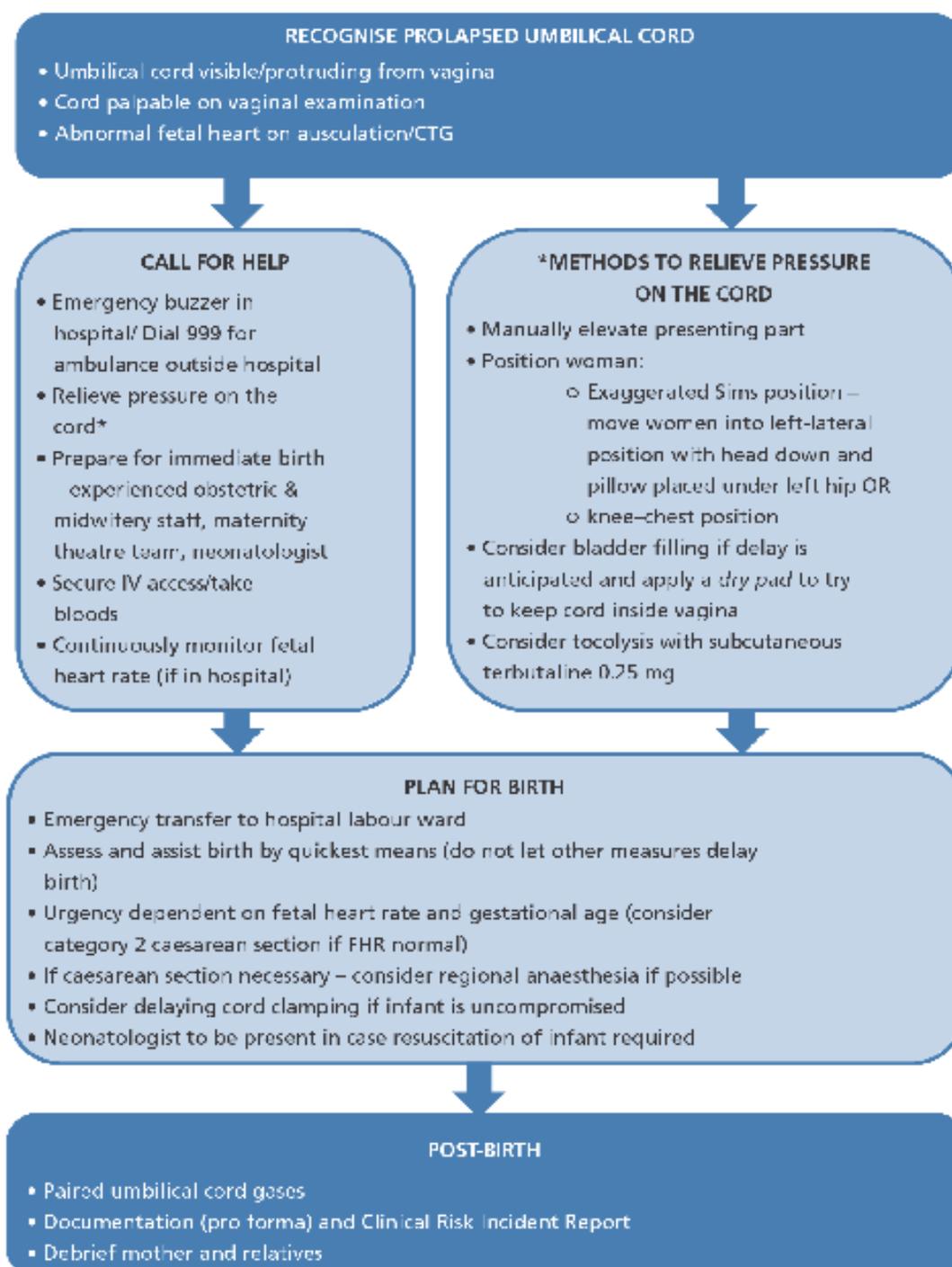
PROMPT (Practical Obstetric Multi-Professional Training) Course Manual
3rd edition 2017

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

Appendix One: The PROMPT Cord Prolapse Algorithm



Algorithm for the management of umbilical cord prolapse



Appendix two: The PROMPT Cord Prolapse Proforma



CORD PROLAPSE PROFORMA

Addressograph
or name and unit no

Please tick the relevant boxes

Diagnosed: Home Birth Centre CDS Ward

Time of diagnosis:.....

Cervical dilatation at diagnosis: cm

If at Home / Birth Centre

Ambulance called? Yes No Time called: Arrived:

CDS contacted? Yes No Time called: Arrival time at Hospital:

If on CDS/Ward

Senior Midwife called Yes No Time..... Arrived.....

Senior Obstetrician called Yes No Time..... Arrived.....

Grade of Obstetrician:

Neonatologist called Yes No Time..... Arrived.....

Procedure used in managing cord prolapse		
Elevating the presenting part manually	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Filling the bladder	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Exaggerated Sims (left lateral) / Knee-Chest position / Head Tilt / Trolley / bed (Please circle)		
Tocolysis with sc Terbutaline 0.25mg or other	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Decision to birth interval:minutes		
Mode of birth		Mode of Anaesthesia
Spontaneous vaginal <input type="checkbox"/>		GA <input type="checkbox"/>
Forceps <input type="checkbox"/>		Spinal <input type="checkbox"/>
Ventouse <input type="checkbox"/>		Epidural <input type="checkbox"/>
LSCS <input type="checkbox"/>		
Apgar Score		Baby's weight:
:1 min		Cord PH
:5 min		Base Excess:
:10 min		Venous:
		Arterial:
Admission to NICU? Yes <input type="checkbox"/> No <input type="checkbox"/>		
AIMS form completed? Yes <input type="checkbox"/>		
Known Risk Factor? YES <input type="checkbox"/> NO <input type="checkbox"/> If YES, please state:		
Mother debriefed Yes <input type="checkbox"/> No <input type="checkbox"/>		

Signature:

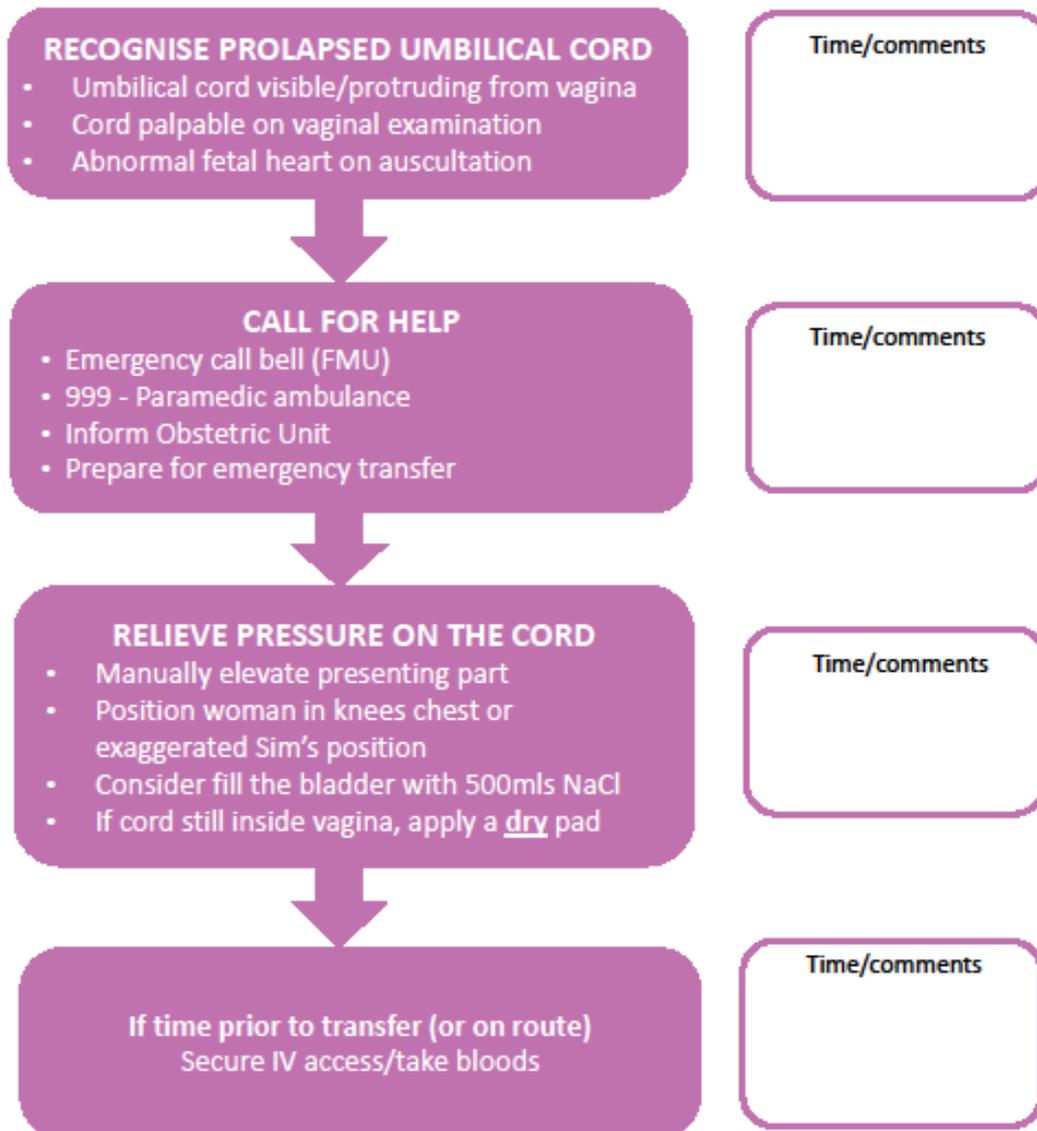
Print:

Designation:

Date:

Appendix Three: Community PROMPT Wales Cord Prolapse Algorithm

Community Algorithm for Management of Umbilical Cord Prolapse



Document all actions on proforma and complete DATIX Incident form



Appendix Four: Annual auditable standards

The following standards will formulate the annual record keeping audit plan:-

1. Documentation of the event and completion of the proforma
2. Family debrief following birth
3. DATIX incident reporting
4. Emergency declared and emergency call instigated, Neonatal team requested to attend (Proforma for evidence)
5. Staff attendance at annual Community PROMPT training
6. Staff attendance at skill and drills within the labour ward setting