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Umbilical Cord Presentation and Prolapse Guideline

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Summary of document:
Guidance to standardise the recognition and the management of women presenting with umbilical cord or vasa praevia presentation and cord prolapse in the hospital or community setting.

Scope:
For guidance of health care professional in maternity areas/setting within Hywel Dda University Health Board when presented with a clinical emergency of cord presentation, vasa praevia or cord prolapse.

The guidance uses the term “woman” (pronouns she or her) to describe individuals whose sex assigned at birth was female, whether they identify as female, male or non-

binary. It is important to acknowledge it is not only people who identify as women for whom it is necessary to access women's health and reproductive services. Therefore, this should include people who do not identify themselves as women but who are pregnant or have recently given birth. Obstetric and midwifery services and delivery of care must therefore be appropriate, inclusive, and sensitive to the needs of those individuals whose gender identity does not align with the sex that they were assigned at birth.

To be read in conjunction with:
Prompt (Practical Obstetric Multi-Professional Training) Course manual (2017).

1242. All Wales Guideline for Maternity Transfers from Community and Freestanding Midwifery Units [opens in new link]

Patient information:
Include links to Patient Information Library [opens in new link]

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Scope
For guidance of health care professional in maternity areas/setting within Hywel Dda University Health Board when presented with a clinical emergency of a women presenting with Umbilical cord presentation, vasa praevia or cord prolapse

Aim
The aim of this document is to provide guidance and to standardise the recognition and management of Cord presentation, vasa praevia and Cord Prolapse in the hospital or community setting.

Objectives
The aim of this guideline will be achieved:

- Provide evidence-based guidance.
- Standardise the recognition, management, and documentation of Cord Prolapse, cord presentation and vasa praevia and Cord Prolapse.

Introduction
Cord Prolapse has been defined as the descent of the umbilical cord through the cervix, either alongside (occult) or past (overt) the presenting part, in the presence of ruptured membranes.

Cord presentation is the presence of the umbilical cord between the fetal presenting part and the maternal 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.

Incidence
The incidence of umbilical cord prolapse ranges from 0.1% to 0.6% of all births. In breech presentation the incidence is around 1%.

Risk factors for cord/ vasa praevia presentation.

Fetal	Prematurity less than 37 weeks Breech Mal-positions- Transverse/oblique lie Unstable lie. High presenting part. Multiple pregnancy (second twin) Low birth weight (less than 2.5Kg) Fetal congenital anomalies
Amniotic fluid	Polyhydramnios
Uterus	Multiparity

Placenta	Low lying placenta, other abnormal placentation.
Pelvis	Cephalopelvic -disproportion, Pelvic tumour
Cord	Long cord/ cord presentation
Human factors	Artificial rupture of the membranes (especially with a high presenting part). External cephalic version (during procedure). Fetal scalp electrode application. Internal podalic version (of 2nd twin), Stabilising induction of labour. Large balloon catheter induction of labour Dis-impaction of fetal head during rotational operative vaginal birth or other manipulation of the fetal head.

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

The combination of ruptured membranes and cord presentation during labour compounds the risk of an inevitable cord prolapse, as cervical dilation progress.

Antenatal care for women with predisposing factors

1. Women with transverse, breech, 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.
2. In women with transverse, oblique or unstable lie, discuss and offer elective admission to hospital after 37+0 weeks of gestation.
3. Women with non-cephalic presentations and have preterm prelabour rupture of membranes should be recommended/considered for inpatient care.

Note. If the above advice 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 the maternal notes. RCOG

This decision should be discussed and agreed by the on-call Consultant.

4. If the presenting part is mobile. Membrane rupture should be avoided wherever possible.
5. 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 birth.
6. 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.

7. When rupturing membranes, the team should consider employing techniques such as fundal pressure to reduce upward deflection of the presenting part.

Recognition and Management of cord presentation and prolapse.

- Cord presentation and cord prolapse may occur without outward physical signs and with a normal fetal heart rate pattern.
- In women with risk factors the presentation of a cord should be excluded at every vaginal examination in labour. Auscultate the fetal heart rate, if not having continuous electronic fetal monitoring, after each vaginal examination and after spontaneous or artificial rupture of membranes.

Mismanagement of abnormal fetal heart rate patterns is one aspect identified in perinatal death associated with cord prolapse.

Cord presentation and vasa praevia with intact membranes.

If a cord or vasa praevia is felt or suspected to be present with intact membranes either on vaginal examination or on ultrasound in the obstetric clinical setting, 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.
- Call for help- inform Band 7 co-ordinator and request immediate senior obstetric review.
- Commence continuous fetal monitoring if not in progress.
- Place in left lateral with hips elevated by a support (e.g. pillow), all fours exaggerated Sims (knee to chest position). Steep head down (Trendelenburg) - this can be used along with exaggerated Sims.
- Remove vaginal prostaglandins if present.
- Discontinue Oxytocin Infusion if in progress.

Note: Although currently there is no evidence to support the routine screening of all women for vasa praevia at the routine Fetal Anomaly Scan if vasa praevia be suspected on ultrasound in the antenatal period, plans of care should be made on an individualised basis. (Refer to guideline 618.Placenta Praevia, Placenta Accreta Spectrum and Vasa Praevia Guideline).

When cord presentation is diagnosed in established labour caesarean birth is usually indicated. Examination in theatre should be considered before proceeding to caesarean birth.

In Community Setting and WGH MLU

- If outside of an Obstetric facility call 999 for immediate emergency response. Notify Labour Ward co-ordinator of imminent transfer.
- Clearly state the Obstetric Emergency.

Cord prolapse.

Cord prolapse should be suspected when there is an abnormal fetal heart rate pattern (e.g. prolonged deceleration and particularly bradycardia) in the presence of ruptured membranes, particularly if such changes commence soon after membrane rupture.

The prolapse can be identified by:

- Feel for the cord and exclude the presence of umbilical cord at each vaginal examination.
- The cord may be visualized 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.
- If risk factors for cord prolapse are present considered vaginal examination if spontaneous rupture of membranes (SROM) occurs in labour **OR** if cardiotocograph abnormalities commence soon after SROM.
- Speculum or digital vaginal examination should be performed at preterm gestation when cord prolapse is suspected.

Management

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

In the Obstetric Units

- Dial 2222, Call for help, (Experienced Obstetrician, Midwife coordinator, additional maternity team assistance, neonatal team, Anaesthetist, Theatre Team).
- Clearly state the Obstetric Emergency.
- Consider tocolysis (e.g. with subcutaneous terbutaline 0.25mg)
- Consideration for a Category 1 assisted vaginal birth if cervix fully dilated.
- **Follow Algorithm for the Management of Cord Prolapse (appendix 1).**

In Community Setting and WGH MLU

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.

- If outside of an Obstetric facility call (9)999 for immediate emergency response. Notify Labour Ward co-ordinator of imminent transfer.
- Clearly state the Obstetric Emergency
- **Follow the Community Algorithm for the Management of Cord Prolapse (appendix 2)**

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).

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.
- Apply a dry pad to try to keep cord inside vagina.

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, apply a dry pad over the cord and hold it close to the vagina, always maintaining minimal handling.

Options to relieve cord compression (see appendix 3)

- Maternal position: Tip the head/ or the foot, of the bed down (Trendelenburg). Position the woman to encourage the fetus to gravitate towards the diaphragm- knee-chest position or exaggerated Sims position. (see appendix 4)
- Manual elevation of the presenting part by a gloved digital vaginal examination and pushing it upwards and above the pelvic brim.

- Bladder filling –In obstetric hospital setting bladder filling can be done if it does not cause delay of transfer to theatre. In community setting, bladder filling should be done prior to transfer.
  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.

Note Ensure the clamp is released and the bladder emptied before commencement of Caesarean birth.

Documentation

- Ensure clinical notes and Cord Prolapse Proforma are fully completed. (See appendix 5).
- Ensure case is Datix reported under “maternity trigger”.
- Debrief woman and birth partners.
- Ensure immediate paediatric review of newborn and ensure findings are clearly documented in baby notes.
- Ensure paired cord blood gases are taken and documented accordingly.
- In the case of cord prolapse ensure women are offered RCOG patient information leaflet-Umbilical cord prolapse in late pregnancy.

Auditable Standards

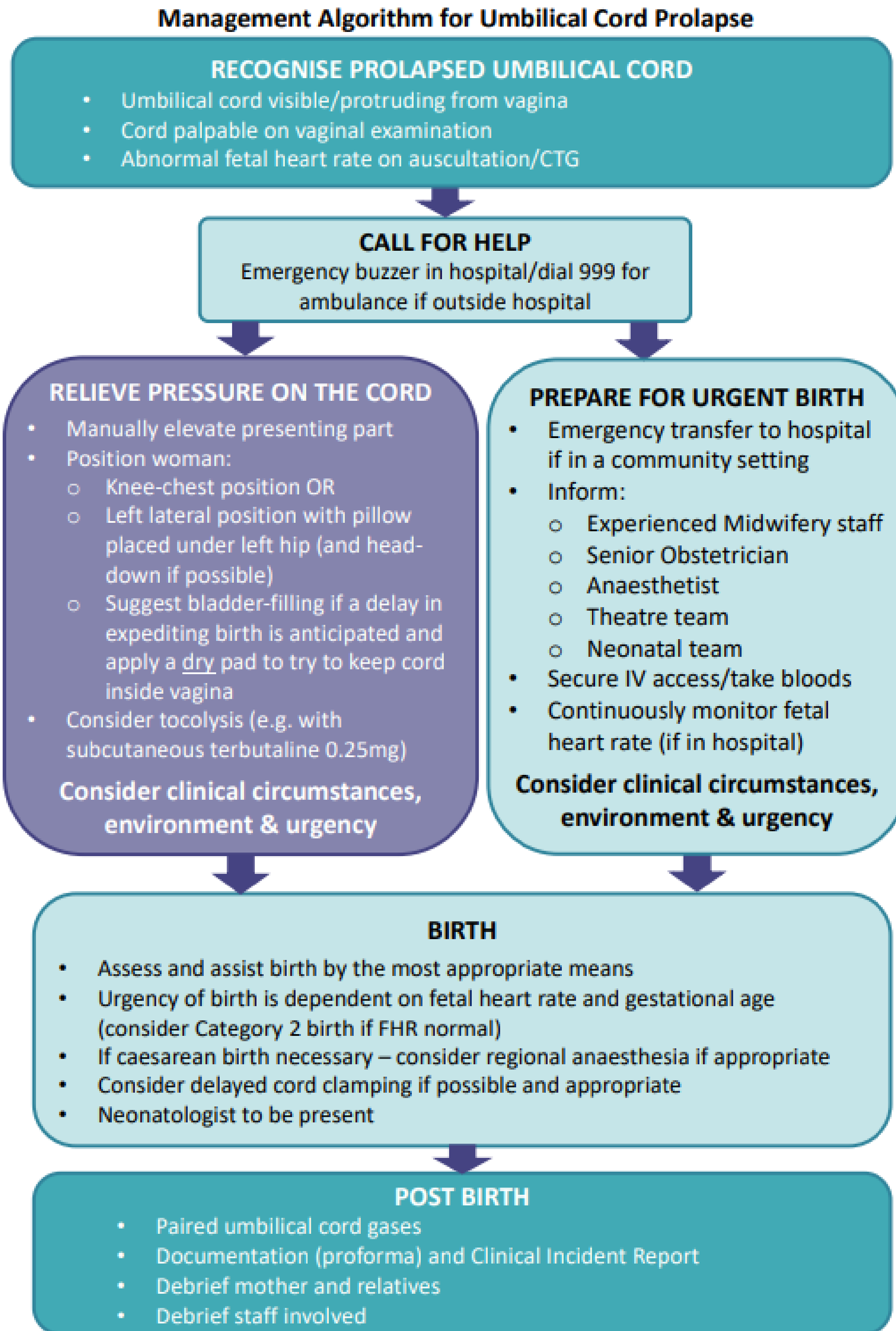
1. Minimised cord compression by placing mother in exaggerated Sim’s or knee chest position.
2. Filling bladder with 500-700mls of sodium chloride through urinary catheter if delay in birth.
3. Immediately commence continuous electronic fetal monitoring.
4. If in labour, whether Terbutaline 250 mcg by subcutaneous injection given appropriately.
5. Paediatrician present at birth.
6. Paired cord gasses to be taken at & recorded in the maternal health record.

References.

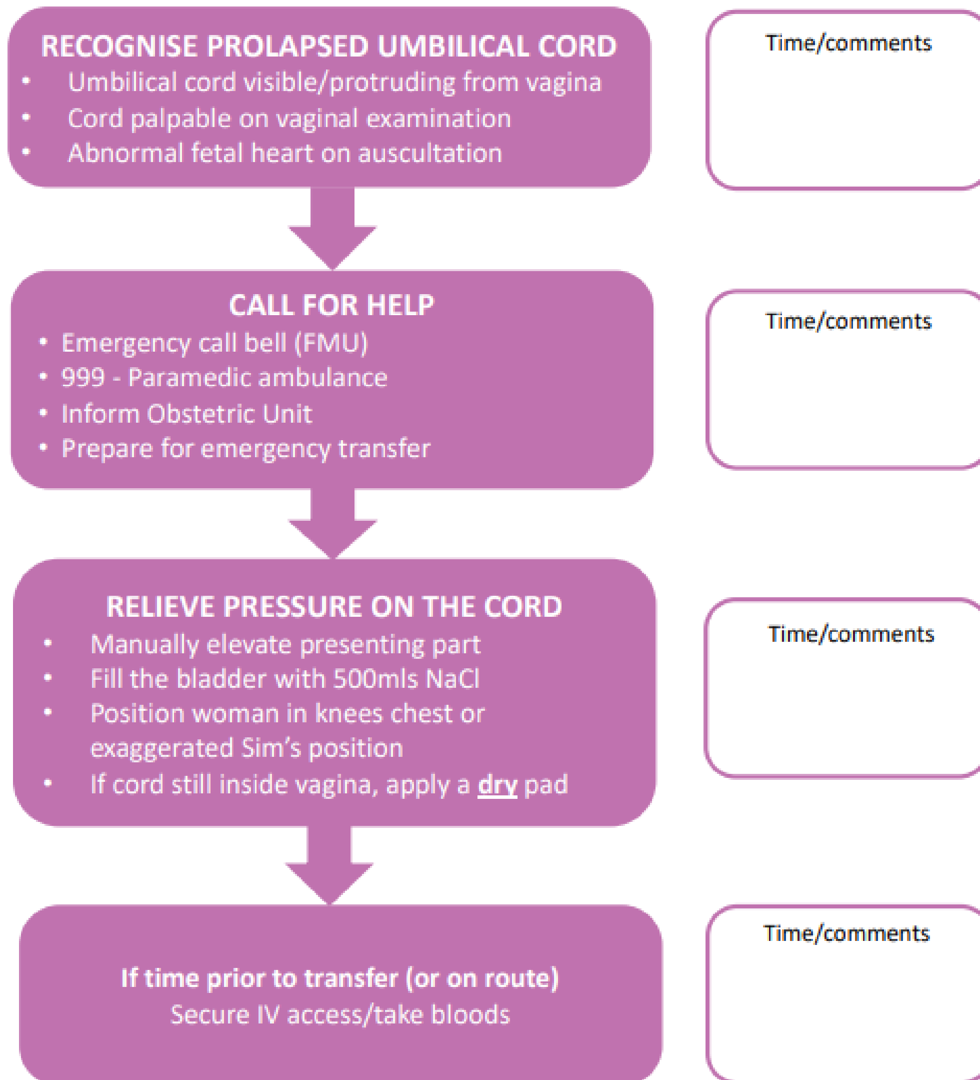
Winter,C. Crofts,J. Draycott,T (2017), PROMPT, Practical Obstetric Multi-Professional Training, Cambridge:Cambridge University Press.

RCOG. Green-top Guideline No. 50. (2012), Cord Prolapse.

Appendix 1. Hospital Algorithm Cord Prolapse



Appendix 2. Community Algorithm Cord Prolapse.



Document all actions on proforma and complete DATIX Incident form

Appendix 3. Maternal Bladder Filling

Five key steps for easy and effective maternal bladder filling:

1. **Prepare equipment*** – Connect 500 mL bag of sterile 0.9% sodium chloride to an intravenous infusion (IV) giving set and prime the giving set by running fluid through the full length of the tubing. Close the flow clamp once the fluid is fully run through.
***Important to check that the end of the Luer connector of the IV giving set fits well inside the foley catheter so the bladder can be effectively filled without undue leakage.**

2. Insert Foley catheter into the urinary bladder – N.B. depending on urgency, *consider* allowing bladder to empty before attaching IV giving set and running in sterile 0.9% sodium chloride.*
*** Currently, there is no robust evidence to support emptying versus not emptying the bladder first. However, whilst emptying prior to filling the bladder may be considered, it should not lead to delay in transferring the woman and/or expediting birth.**

3. Firmly connect IV giving set into foley catheter (which is attached to the 500 mL bag of saline) and squeeze the bag to instil 500 mL of sterile saline into the bladder as quickly as possible. Close the flow clamp once 500mL fluid has been instilled.

4. Leave the IV giving set and empty bag of fluid (or near empty bag) attached to the catheter for transfer to hospital/labour ward.
(This will help remind staff to empty her bladder when the woman arrives in hospital/theatre).

5. **Empty maternal bladder prior to attempting any method of birth -** detach giving set to allow fluid to drain from the bladder, then either remove the catheter if aiming for vaginal birth, or attach a catheter bag if planning for caesarean birth.

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Appendix 4. Maternal Positioning in Cord Prolapse.

Cord prolapse: Maternal positioning

Knee-chest position

Left side with bed tilted head-down and pillows under hip
(could be a folded pillow if you only have one pillow)

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Appendix 5. Cord prolapse Proforma.

CORD PROLAPSE PROFORMA

Addressograph or name and unit no

Please tick the relevant boxes

Diagnosed: **Home** ☐ **Birth Centre** ☐ **Obstetric Unit** ☐ **Ward** ☐

Time of diagnosis: .... Cervical dilatation at diagnosis: .... cm

If at Home / Birth Centre

Ambulance called? **Yes** ☐ **No**☐ **Time called:** .... **Arrived:** ....

Obstetric Unit contacted? **Yes** ☐ **No**☐ **Time called:** .... **Arrival time at Hospital:** ....

If in maternity unit

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** ☐ **No** ☐
Filling the bladder	**Yes** ☐ **No** ☐
Exaggerated Sims (left lateral) / Knee-Chest position / Head Tilt / Trolley / bed **(Please circle)**	
Tocolysis with sc Terbutaline 0.25mg or other	**Yes** ☐ **No** ☐
Decision to birth interval: ....minutes	

Mode of birth	**Mode of Anaesthesia**
Spontaneous vaginal ☐	GA ☐
Forceps ☐	Spinal ☐
Ventouse ☐	Epidural ☐
LSCS ☐	

Apgar Score	**Baby's weight:**	
:1 min	**Cord PH**	**Base Excess:**
:5 min	**Venous:**	
:10 min	**Arterial:**	
Admission to NICU? **Yes** ☐ **No** ☐		
DATIX completed? **Yes** ☐		
Known Risk Factor? **Yes** ☐ **No** ☐ **If YES, please state:**		
Mother debriefed **Yes** ☐ **No** ☐		

Signature: .... **Print:** ....

Designation: .... **Date:** ....