CLINICAL GUIDELINE FOR THE MANAGEMENT OF UMBILICAL CORD PROLAPSE

1. Aim/Purpose of this Guideline

1.1. This is to give guidance to all midwives and obstetricians on the recognition and management of an umbilical cord prolapse

2. The Guidance

2.1. 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.

Cord presentation is the presence of the umbilical cord between the fetal presenting part and the cervix, with or without membrane rupture[1].

2.2. Incidence

The overall incidence of cord prolapse ranges from 0.1% to 0.6%.

With a breech presentation the incidence is 1%

Cases involving cord prolapse consistently appear in the perinatal mortality enquiries.

The principle causes of asphyxia in this context are:

- Cord compression (preventing venous return to the fetus)
- Umbilical vasospasm (preventing venous and arterial blood flow to and from the fetus) due to exposure to external environment.

2.3. Risk Factors for cord prolapse

Any factor which prevents close application of the presenting part to the lower part of the uterus or the pelvic brim.

2.4. Avoidance of cord prolapse

50% of cases of cord prolapse are a result of obstetric intervention

- Artificial Rupture of membranes (ARM) should be avoided if the presenting part is mobile. If ARM is clinically indicated, in the presence of risk factors for cord prolapse, this should be performed with arrangements in place for an immediate caesarean section[1].
- Vaginal examinations and obstetric interventions carry the risk of upward displacement and cord prolapse, particularly with a high presenting part and ruptured membranes. Upward pressure should be kept to a minimum in such cases[1].
- With transverse, oblique or unstable lie, elective admission after 37+6 weeks gestation should be discussed. Such women should be advised to present immediately if there are signs of labour or suspected rupture of membranes[1].
- Women with non cephalic presentations and preterm prelabour rupture of membranes should be offered admission[1].

2.5. Diagnosis of cord prolapse

- Cord presentation or prolapse can occur without physical signs and without fetal heart pattern abnormalities.
- Diagnosis may be made by visual inspection or palpation of the umbilical cord on vaginal examination.
- Prompt vaginal examination is the most important aspect of diagnosis.
- Cord prolapse is suspected if persistent variable decelerations or fetal bradycardia occur, particularly following rupture of membranes.

2.6. Management

This obstetric emergency requires immediate corrective measures to prevent fetal asphyxia. A coordinated team approach is essential

If in the community setting:

- Call ‘999’ and ask for an emergency ambulance
- institute measures to relieve cord compression
- Contact delivery suite and inform them of the situation and expected time of arrival.
- During the ambulance transfer, attempt to maintain elevation of the presenting part, taking into consideration the woman’s and the midwifes safety.
- If delivery is imminent proceed with delivery, prepare for neonatal resuscitation, do not stand down ambulance until woman and baby safely delivered.

If in the consultant unit

- Call for help, clearly stating ‘cord prolapse’,
- **Stop** oxytocin if being administered
- Institute measures to relieve cord compression.
- Coordinator to arrange for theatre to be prepared and the theatre team assembled
- Consider the administration of a tocolytic.

Options to relieve cord compression

- Tip the head of the bed down. Position the woman to encourage the fetus to gravitate towards the diaphragm- knee-chest position or exaggerated Sims position[1].
- Manual elevation of the presenting part by inserting a gloved hand in the vagina and pushing it upwards and above the pelvic brim.

OR

- Insert a Foleys catheter and rapidly fill the bladder with 500mls Normal Saline to elevate the fetal presenting part. Clamp the catheter. The clamp must be released and the bladder drained before any delivery attempt[1].

To prevent vasospasm of the cord there should be minimum handling of loops of cord lying outside the vagina. In the community setting, consideration for attempting to place the cord back into the vagina should be made on an individual case basis; there is no evidence to support benefit or harm of this practice.

Continuous fetal monitoring should be undertaken and the maternal pulse palpated to differentiate. If fetal viability is in doubt, an ultrasound scan should be undertaken.

Where immediate vaginal delivery is not imminent or possible, transfer to theatre for

emergency caesarean section should be immediately facilitated.

- If the fetal heart rate pattern is pathological or there is a fetal bradycardia, a category 1 caesarean section should be performed [2]
- A category 2 Caesarean section is appropriate when the fetal heart rate pattern is suspicious or normal[2].
- Successful measures to relieve cord compression can allow regional anaesthesia to be the technique of choice[1].
- Obtain consent. This may be verbal in the case of a category 1 caesarean section.
- Establish IV access. Take bloods for full blood count, group and save.

Vaginal birth, in most cases operative, can be attempted if the cervix is fully dilated and the fetal presentation, position and station indicate this to be most expedient[2].

A practitioner competent in neonatal resuscitation should be present for delivery[2]
Paired cord blood samples should be obtained[2].

2.7. Cord prolapse/ presentation at extreme preterm gestational age.

Expectant management should be discussed when the gestation is at the limits of viability (23 weeks).
Women should be counselled by the obstetric consultant on whether to continuation with the pregnancy at the threshold of viability[1].

Document times of events, personnel in attendance and of actions taken
Communicate with the parents throughout.
Postnatal debriefing should be offered.
Complete a clinical incident (DATIX) report.

2.8. Telephone management of a woman in the community setting

Perinatal mortality is increased by more than tenfold when cord prolapse occurs outside compared with inside hospital[1]

- Advise the woman (over the telephone if necessary), to adopt the knee-chest position whist waiting for the ambulance.
- Arrange 999 ambulance transfer to the consultant led unit
- During the ambulance transfer, advise that attempts be made to maintain elevation of the presenting part, taking into consideration the woman's safety.
- Advice the ambulance crew that if vertex visible allow delivery to progress.
- All measures taken must not cause unnecessary delay in transfer[1].
- Offer debrief of the woman, partner and ambulance crew

2.9. References

1.RCOG Green Top Guideline No. 50 April 2008.
2. NICE CG13 Caesarean Section Clinical Guideline. April 2004

3. Monitoring compliance and effectiveness

Element to be monitored	• The audit will take into account record keeping by obstetric, anaesthetic and paediatric doctors, midwives, nurse, students and maternity support workers. • The results will be inputted onto an excel spreadsheet • The audit will be registered with the Trust's audit department
Lead	Maternity risk management midwife
Tool	• Was Syntocinon stopped at the diagnosis of cord prolapse • Was terbutaline considered • If a cat 1 C/S performed, was decision to delivery time achieved within 30 minutes • Were paired cord blood samples taken and filed in the secure stor envelope
Frequency	• A cord prolapse is a fairly rare occurrence so each case will be reviewed through the clinical incident review meeting
Reporting arrangements	• The results will be reviewed at the time of clinical incident review meeting
Acting on recommendations and Lead(s)	• Any deficiencies identified will be discussed at the maternity risk management and clinical audit forum and an action plan developed • An action plan lead will be identified and a time frame for the action • The action plan will be monitored by the maternity risk management and clinical audit forum
Change in practice and lessons to be shared	• Required changes to practice will be identified and actioned within a time frame agreed on the action plan • A lead member of the forum will be identified to take each change forward where appropriate. • The results will be distributed to all staff through the risk management newsletter/audit forum as per the action plan

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement.

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Document Title	Clinical guideline for the management of umbilical cord prolapse		
Date Issued/Approved:	28th August 2012		
Date Valid From:	28th August 2012		
Date for Review:	1st August 2015		
Directorate / Department responsible (author/owner):	Sally Budgen Delivery suite coordinator Obs and Gynae directorate		
Contact details:	01872 252361		
Brief summary of contents	This is to give guidance to all midwives and obstetricians on the recognition and management of an umbilical cord prolapse		
Suggested Keywords:	Cord prolapse, cord presentation		
Target Audience	RCHT	PCT	CFT
	✓		
Executive Director responsible for Policy:	Medical Director		
Date revised:	June 2012		
This document replaces (exact title of previous version):	Guideline for the management of umbilical cord prolapse		
Approval route (names of committees)/consultation:	Maternity guidelines meeting Obs and gynae directorate		
Divisional Manager confirming approval processes			
Name and Post Title of additional signatories			
Signature of Executive Director giving approval	{Original Copy Signed}		
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet & Intranet	✓	Intranet Only
Document Library Folder/Sub Folder	Midwifery and obstetrics		
Links to key external standards			

Related Documents:	
Training Need Identified?	Training undertaken as part of the TOME day

Version Control Table

Date	**Version No**	**Summary of Changes**	**Changes Made by** *(Name and Job Title)*
2008	1.0	Initial guideline	Sally Budgen Delivery suite coordinator
2010	1.1	Updated in line with RCOG guideline	Sally Budgen Delivery suite coordinator
May 2012	1.2	Updated and compliance monitoring added	Sally Budgen Delivery suite coordinator

All or part of this document can be released under the Freedom of Information Act 2000

This document is to be retained for 10 years from the date of expiry.

This document is only valid on the day of printing

Controlled Document

This document has been created following the Royal Cornwall Hospitals NHS Trust Policy on Document Production. It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2.Initial Equality Impact Assessment Screening Form

<table>
<tr><td colspan="2">Name of service, strategy, policy or project (hereafter referred to as policy) to be assessed: Clinical guideline for the management of umbilical cord prolapse</td></tr>
<tr><td>Directorate and service area:
Obs and gynae directorate</td><td>Is this a new or existing Procedure?
Existing</td></tr>
<tr><td>Name of individual completing assessment: Jan Clarkson</td><td>Telephone:
01872 252270</td></tr>
<tr><td>1. Policy Aim*</td><td>This is to give guidance to all midwives and obstetricians on the recognition and management of an umbilical cord prolapse</td></tr>
<tr><td>2. Policy Objectives*</td><td>To ensure evidence based management of cord prolapse</td></tr>
<tr><td>3. Policy – intended Outcomes*</td><td>To achieve a safe outcome for baby if possible</td></tr>
<tr><td>5. How will you measure the outcome?</td><td>Compliance monitoring</td></tr>
<tr><td>5. Who is intended to benefit from the Policy?</td><td>Women and babies</td></tr>
<tr><td>6a. Is consultation required with the workforce, equality groups, local interest groups etc. around this policy?

b. If yes, have these groups been consulted?

c. Please list any groups who have been consulted about this procedure.</td><td></td></tr>
</table>

*Please see Glossary

7. The Impact
Please complete the following table using ticks. You should refer to the EA guidance notes for areas of possible impact and also the Glossary if needed.

- Where you think that the *policy* could have a **positive** impact on any of the equality group(s) like promoting equality and equal opportunities or improving relations within equality groups, tick the ‘Positive impact’ box.
- Where you think that the *policy* could have a **negative** impact on any of the equality group(s) i.e. it could disadvantage them, tick the ‘Negative impact’ box.

- Where you think that the *policy* has **no impact** on any of the equality group(s) listed below i.e. it has no effect currently on equality groups, tick the 'No impact' box.

Equality Group	Positive Impact	Negative Impact	No Impact	Reasons for decision
Age			Yes	All pregnant women
Disability			Yes	All pregnant women
Religion or belief			Yes	All pregnant women
Gender			Yes	All pregnant women
Transgender			Yes	All pregnant women
Pregnancy/ Maternity			Yes	All pregnant women
Race			Yes	All pregnant women
Sexual Orientation			Yes	All pregnant women
Marriage / Civil Partnership			Yes	All pregnant women

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:

- **A negative impact and**
- **No consultation (this excludes any *policies* which have been identified as not requiring consultation).**

8. If there is no evidence that the *policy* promotes equality, equal opportunities or improved relations - could it be adapted so that it does? How?	Full statement of commitment to policy of equal opportunities is included in the policy

Please sign and date this form.

Keep one copy and send a copy to Matron, Equality, Diversity and Human Rights, c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Chyvean House, Penventinnie Lane, Truro, Cornwall, TR1 3LJ

A summary of the results will be published on the Trust's web site.

Signed Jan Clarkson
Date 22nd May 2012