

# CORD PROLAPSE

## BACKGROUND

A delay in management of cord prolapse (where a loop of umbilical cord is below the presenting part and the membranes are ruptured) is associated with significant perinatal morbidity and mortality. It is acknowledged as a serious obstetric emergency.

The main aim of management is to relieve pressure on the cord from the presenting part digitally and/or through the technique of bladder filling.

## KNOWN RISK FACTORS

Several risk factors are associated with cord prolapse<sup>1</sup>:

- Unengaged or poorly applied presenting part
- Obstetric interventions (eg. amniotomy, vaginal manipulation of fetus, external cephalic version)
- Malpresentations (breech/shoulder/transverse or oblique lie/compound presentation)
- Prematurity and low birth weight
- Polyhydramnios
- Second twin
- Fetal congenital abnormalities (eg. anencephaly)
- Abnormal placentation
- Multiparity

## MANAGEMENT

- Call for help
- Give explanations to the woman and her birth partner
- Move the woman into the knee-chest or exaggerated Sims' position (see Appendix A)
- If oxytocin augmentation is in progress, discontinue immediately
- Elevate the presenting part digitally or by bladder filling
- To prevent vasospasm, there should be minimal handling of loops of cord lying outside the vagina<sup>1</sup>
- Continue to assess fetal heart rate
- Expedite the birth of the baby. At full dilatation, vaginal birth may be an option depending on parity and engagement of head
- Transport the woman to the operating theatre, if required
- Tocolysis (if available) can be considered while preparing for caesarean section if there are persistent fetal heart rate abnormalities after attempts to prevent compression mechanically or when the delivery is likely to be delayed.<sup>1</sup> Tocolysis may allow time for regional anaesthesia to be administered.

## BLADDER FILLING

Several studies have shown reduced perinatal mortality with elevation of the presenting part by bladder filling.<sup>3, 4, 5</sup> This technique may allow time for regional anaesthesia as opposed to general anaesthesia. This may also allow time for transfer of the woman to the secondary or tertiary unit from other settings.

When the decision is made to manage cord prolapse using bladder filling, all necessary equipment is stored in a cord prolapse box in all birthing units. (see Appendix B)

### Bladder filling technique

1. Collect cord prolapse box. Prepare equipment.
2. Continue applying pressure to fetal presenting part where possible with minimal interruption for bladder filling.
3. Position woman for catheterisation. (refer to Appendix A for pictures)  
Either:
  - Lying on back with hips wedged upwards and/or with head of bed lowered *or*
  - Exaggerated Sims' position (side-lying with hips propped on wedge) *or*
  - Knee-chest position (all fours with buttocks raised)
4. Site Foley catheter (latex free) into urethra.
5. Fill catheter balloon with 10 mLs sterile water.
6. Attach 500 mLs bag of Sodium Chloride 0.9% to urology set, prime set, close roller clamp and attach to catheter.
7. Use gravity or pressure on fluid bag to fill bladder to 500 mLs. Close roller clamp. If fetal heart not recovered after 500 mLs, attach a new bag and bladder fill to a maximum of 750 mLs
8. Leave urology set and fluid bag attached to catheter during transfer as an indication that bladder has been filled.
9. Transfer to Operating Theatre. When surgical team ready to commence caesarean section remove urology bag and empty bladder prior to surgery. Attach catheter bag.

## TOCOLYSIS

Acute tocolysis (if available) may be achieved as per CWH tocolysis protocol by using:

1<sup>st</sup> line:

- Terbutaline 250 microgram subcutaneous (SC) (0.5 mL of 500 microgram/mL vial),
- OR 250 microgram IV over 5 minute (0.5 ml of 500 mcg vial diluted in 5 mL 0.9% Sodium Chloride)

2<sup>nd</sup> line:

- Salbutamol 100 microgram inhaled (1-2 puffs 100 microgram/dose +/- via spacer)
- OR 100 microgram IV over 1 minute (2 mL of Salbutamol 500 microgram/mL diluted with 9 mL 0.9% Sodium Chloride)

## DOCUMENTATION

The cord prolapse form (Ref.6876) must be completed following the birth of the baby. (Appendix C)

## REFERENCES

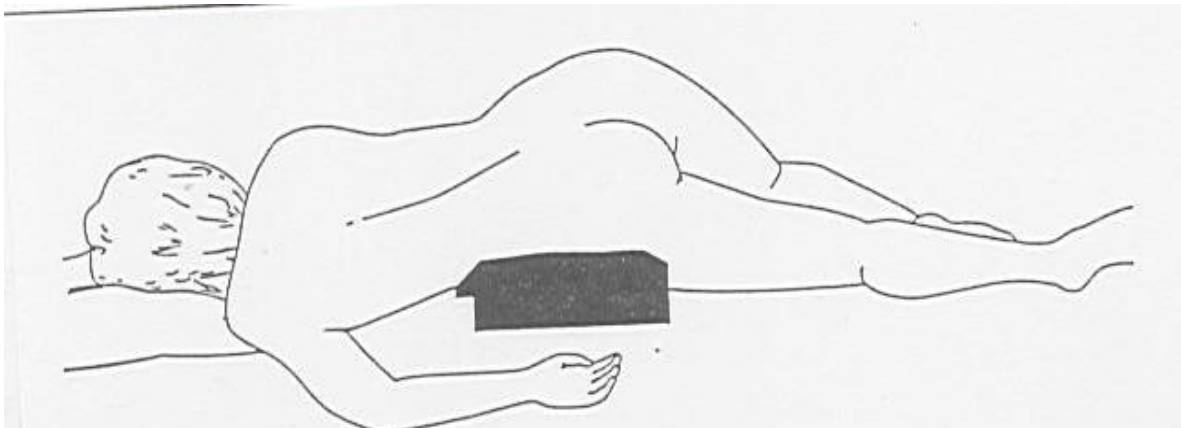
1. Siassakos, D., Fox, R., Draycott, T.J. (2014) *Umbilical cord prolapse (Green-top guideline No.50)*. London: RCOG press.
2. Goswami, K. (2007) Umbilical Cord Prolapse. In: Grady, K., Howell, C., & Cox, C. (eds) *Managing Obstetric Emergencies and Trauma. The MOET course manual* 2nd Ed. London: RCOG Press: 233-7.
3. Caspi, E, Lotan, Y, Schreyer, P (1983) Prolapse of the cord; reduction of perinatal mortality by bladder instillation and caesarean section. *Israel Journal of Medical Science* (19):541-5.
4. Houghton, G (2006) Bladder filling: an effective technique for managing cord prolapse, *British Journal of Midwifery* 14:2 p88-89.
5. Katz, Z., Shoham, Z., Lancet, M, et al., (1988) Management of labour with umbilical cord prolapsed: a 5-year study. *Obstetrics and Gynecology* 72 (2):278-81.

## APPENDIX A MATERNAL POSITIONING DURING CORD PROLAPSE

1. Knee-chest position (all-fours position with buttocks raised)



2. Exaggerated Sims' position



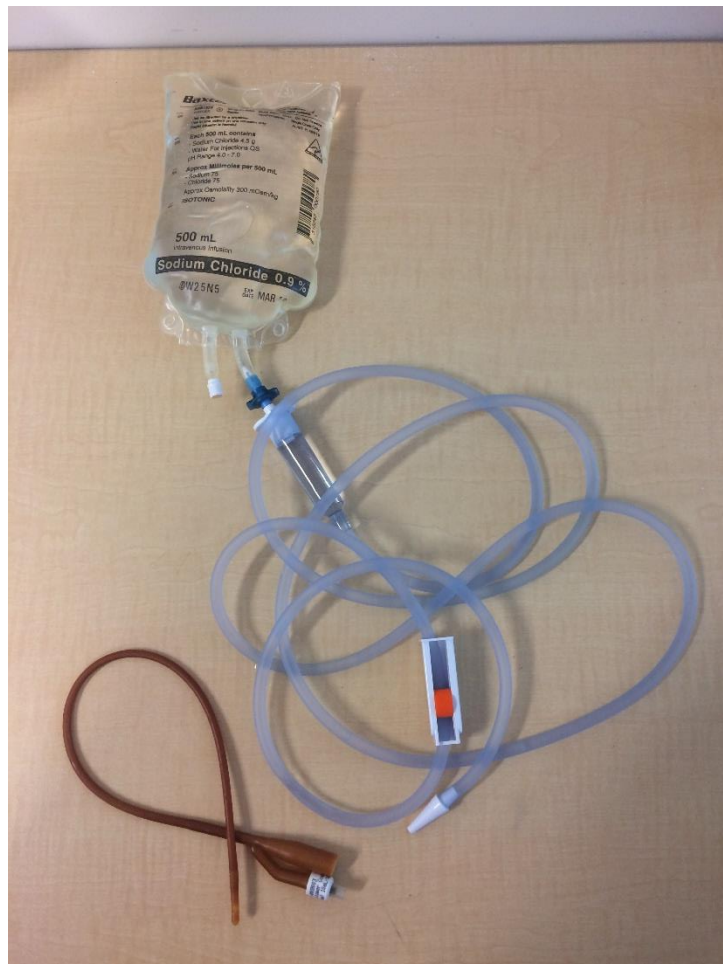
Squire, C. *Shoulder Dystocia and Umbilical Cord Prolapse in Emergencies Around Childbirth: A Handbook for Midwives*

Boyle, M. (Ed.)

Oxford: 2002

## APPENDIX B CONTENTS OF CORD PROLAPSE BOX

- VE pack or catheterisation pack
- 14 gauge Foley catheter (latex free)
- 30mls Sodium Chloride for irrigation
- Gauze swabs
- 10 mLs water for injection
- 10 mLs syringe
- Urology Set
- 500 mLs IV bag Sodium Chloride 0.9%
- Copy of Cord Prolapse guideline



## APPENDIX C CORD PROLAPSE CLINICAL FORM

**Canterbury**  
District Health Board  
Te Poari Hauora o Waitaha  
**Christchurch Women's Hospital**  
Maternity Services

SURNAME .....NHI: .....  
FIRST NAME: .....DOB: .....  
ADDRESS: .....  
..... POST CODE: ..... (or affix patient label)

### CORD PROLAPSE

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| Diagnosis  |      |                              |  |   |              |
|--|------|------------------------------|--|---|--------------|
| Diagnosis made by: .....   |      |                              | Role: .....  |   |              |
| Time of diagnosis: .....   |      |                              | Cervical dilatation at diagnosis: .....cm  |   |              |
| Location of diagnosis: <input type="checkbox"/> Home <input type="checkbox"/> Hospital <input type="checkbox"/> Primary Unit <input type="checkbox"/> Other..... |      |                              |  |   |              |
| Diagnosis Made at Primary Unit   |      |                              | Diagnosis made at Secondary/Tertiary Unit  |   |              |
| Ambulance call:  |      |                              | Call for Help:   |   |              |
| Time ..... By ..... Role .....   |      |                              | Time ..... By ..... Role .....   |   |              |
| Tertiary Unit call:  |      |                              | Obstetric Team Notified:   |   |              |
| Time ..... By ..... Role .....   |      |                              | Time ..... By ..... Role .....   |   |              |
| Ambulance:   |      |                              | Anaesthetic Team Notified:   |   |              |
| Time of arrival ..... Time of departure .....  |      |                              | Time ..... By ..... Role .....   |   |              |
| Arrival at Secondary/Tertiary Unit:  |      |                              | Neonatal Team Notified:  |   |              |
| Time .....   |      |                              | Time ..... By ..... Role .....   |   |              |
| Staff In Attendance  |      |                              |  |   |              |
| Name   | Role | Time arrived                 | Name   | Role  | Time arrived |
|  |      |                              |  |   |              |
|  |      |                              |  |   |              |
| Procedures Performed   |      |                              |  |   |              |
| Change of maternal position  |      | <input type="checkbox"/> Yes | <input type="checkbox"/> No  | Specify.....  |              |
| Manual elevation of presenting part  |      | <input type="checkbox"/> Yes | <input type="checkbox"/> No  | By ..... Role .....   |              |
| Bladder filled (via catheter)  |      | <input type="checkbox"/> Yes | <input type="checkbox"/> No  | Approx. Volume .....  |              |
| Mode of Birth  |      |                              | Mode of Anaesthesia  |   |              |
| <input type="checkbox"/> Spont. <input type="checkbox"/> C/S <input type="checkbox"/> Forceps <input type="checkbox"/> Ventouse                                  |      |                              | <input type="checkbox"/> General <input type="checkbox"/> Spinal <input type="checkbox"/> Epidural <input type="checkbox"/> Other/None |   |              |
| If other specify: .....  |      |                              |  |   |              |
| Time of Birth.....   |      |                              | Diagnosis to Birth Interval.....   |   |              |
| Neonatal Outcome   |      |                              |  |   |              |
| Apgar Score: 1min.....5min.....10min.....  |      | Weight.....                  |  | Admission to NICU: <input type="checkbox"/> Yes <input type="checkbox"/> No |              |
| Cord Blood Values  |      | pH                           |  | Base Excess   |              |
| Arterial   |      |                              |  |   |              |
| Venous   |      |                              |  |   |              |
| Name:  |      |                              | Date:  |   |              |
| Signature:   |      |                              | Designation:   |   |              |

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