HEALTH HOLDING
HAFER ALBATIN HEALTH CLUSTER
MATERNITY AND CHILDREN HOSPITAL

Department:	Obstetrics and Gynecology		
Document:	Multidisciplinary Policy and Procedure		
Title:	Management of Cord Prolapse		
Applies To:	All Obstetrics and Gynecology Staff		
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1. PURPOSE:

1.1 To provide best advice regarding the management of umbilical cord prolapse in the hospital.

2. DEFINITIONS:

2.1 **Umbilical Cord Prolapse**- the cord slips ahead of the presenting part of the fetus and protrudes into the cervical canal or vagina, or beyond.
- 2.1.1 It is an obstetrical emergency, occurred in 0.16 to 0.18% of live born deliveries.

2.2 **Umbilical Cord Presentation**- the umbilical cord lies in front of the presenting part, the membranes are intact.

2.3 **Occult Umbilical Cord Presentation/Prolapse**- the cord slips alongside, but not ahead of the presenting part.

3. POLICY:

3.1 The physician should be informed of all women presenting in labor at high risk for umbilical cord prolapse.
- 3.1.1 Fetal and maternal factor that have been associated with cord prolapse include:
  - 3.1.1.1 Malpresentation (breech, transverse, oblique, or unstable lie)
  - 3.1.1.2 Prematurity
  - 3.1.1.3 Low birth weight
  - 3.1.1.4 Second twin
  - 3.1.1.5 Low lying placentation
  - 3.1.1.6 Pelvic deformities
  - 3.1.1.7 Uterine malformations/ tumors
  - 3.1.1.8 External fetal anomalies
  - 3.1.1.9 Multiparity
  - 3.1.1.10 Polyhydramnios
  - 3.1.1.11 Long umbilical cord
  - 3.1.1.12 Unengaged presenting part
  - 3.1.1.13 Prolonged labor
- 3.1.2 Obstetric intervention account for about 50% of cases of cord prolapse, iatrogenic factors that have been associated with cord prolapse include:
  - 3.1.2.1 Iatrogenic rupture of membranes, especially with an unengaged presenting part
  - 3.1.2.2 Cervical ripening with a balloon catheter
  - 3.1.2.3 Induction of labor
  - 3.1.2.4 Application of an internal scalp electrode
  - 3.1.2.5 Insertion of an intrauterine pressure catheter
  - 3.1.2.6 Manual rotation of the fetal head
  - 3.1.2.7 Amnioinfusion

3.1.2.8 External cephalic version
3.1.2.9 Internal podalic version
3.1.2.10 Application of forceps or vacuum

3.1.3 N.B. – Nonvertex fetal presentation is consistently associated with a high risk of cord prolapse.

3.1.3.1 Footling breech presentation carries a higher risk of cord prolapse than other types of breech presentation.

3.1.3.2 Infants delivering obstetrics population, routine amniotomy for labor augmentation did not significantly increase the risk of cord prolapse compared with no amniotomy in a meta-analysis of randomized trials.

3.2 The physician should be aware by clinical finding and diagnosis of cord prolapse.

3.2.1 Clinical findings of cord prolapse:

3.2.1.1 Cord prolapse usually presents with the abrupt onset of severe, prolonged fetal bradycardia or moderate to severe variable decelerations in a patient with a previously normal tracing.

3.2.1.2 The fetal heart rate changes typically occur soon after membrane rupture or an obstetric intervention that dislodges the presenting part.

3.2.1.3 Less commonly, the care provider may palpate a pulsating cord incidentally on a vaginal examination performed to assess labor progress or a patient with ruptured membranes may report seeing or feeling an overt cord prolapse.

3.2.2 Diagnosis:

3.2.2.1 Diagnosis based on visualization or palpation of the umbilical cord ahead of the presenting part.

3.2.2.2 The diagnosis of occult umbilical cord prolapse is based on the abrupt onset of severe, prolonged fetal bradycardia or moderate to severe variable decelerations in a patient with a previously normal tracing.

3.3 Routine ultrasound examination is not sufficiently sensitive or specific for identification of cord presentation antenatal and should not be performed to predict increased probability of cord prolapse, unless in the context of a search setting.

3.4 Artificial membrane rupture should be avoided whenever possible if the presenting part is mobile and/ or high.

3.5 The fetal heart rate should be auscultated after every vaginal examination in labor and after spontaneous membrane rupture.

4. PROCEDURE:

4.1 Call for help (Nursing, Anesthesia, Obstetric, Operating Room and Pediatric Providers).

4.2 Inform the most responsible physician.

4.3 Assess maternal and fetal status.

4.4 Position the patient: (target is to moving the fetus off of the cord) the woman lies on her left side in a semi-prone position, with her right knee and thigh drawn up: her left arm lies along her back while the hips and buttocks are elevated on a wedge or pillow. This relieves pressure on the umbilical cord.

4.5 Give oxygen at 4 – 6 liters per minute by mask or nasal cannula.

4.6 It the cord is pulsating, the fetus is alive.

4.6.1 If the woman is in the first stage of labor, perform the following in all cases.

4.6.1.1 Wearing sterile gloves, inserting a hand into the vagina. Push the presenting part up to decrease pressure on the cord and dislodge the presenting part from the pelvis.

4.6.1.2 Place the other hand on the abdomen in the suprapubic region keep presenting part out of the pelvis.

4.6.1.3 Once the presenting part is firmly held above the prelvic brim, remove the other hand from the vagina. Keep the hand on the abdomen until a caesarean can be performed.

4.6.1.4 If available, give tocolytics to reduce contractions. Cease Syntocinon infusion immediately.

4.6.1.5 Consider administration of Terbutaline 250 micrograms subcutaneously for woman in established labor.
4.6.1.6 Perform immediate caesarean.
4.6.1.7 Consider catheterization of the bladder if delay to operating room is expected: a full bladder can inhibit uterine activity and reduce compression on the cord by rasing the presenting part.
4.6.1.7.1 Attach a standard infusion set to a 16G indwelling catheter.
4.6.1.7.2 Instill (500 to 700 milliliters saline, warmed or at room temperature) into the catheter until the distended bladder is visible above the symphysis pubis.
4.6.1.7.3 Clamp the catheter and attach to a drainage bag.
4.6.1.7.4 Remove the clamp and allow urine to drain when the time is appropriate in theatre.

4.6.2 If the woman is in the second stage of labor:
4.6.2.1 Expedite birth with obstetric vacuum or forceps.
4.6.2.2 For breech presentation, perform breech extraction and apply piper or long forceps to the after-coming head.
4.6.2.3 Prepare for resuscitation of the newborn.
4.6.2.4 If delivery is not imminent and the fetus is potentially viable i.e. gestation equal to or more than 24 weeks gestation:
4.6.2.4.1 Prepare the woman for emergency caesarean section and transport to theatre.
4.6.2.4.2 For gestation between 23 – 24 weeks prepare the woman for OR until medical decision is made.

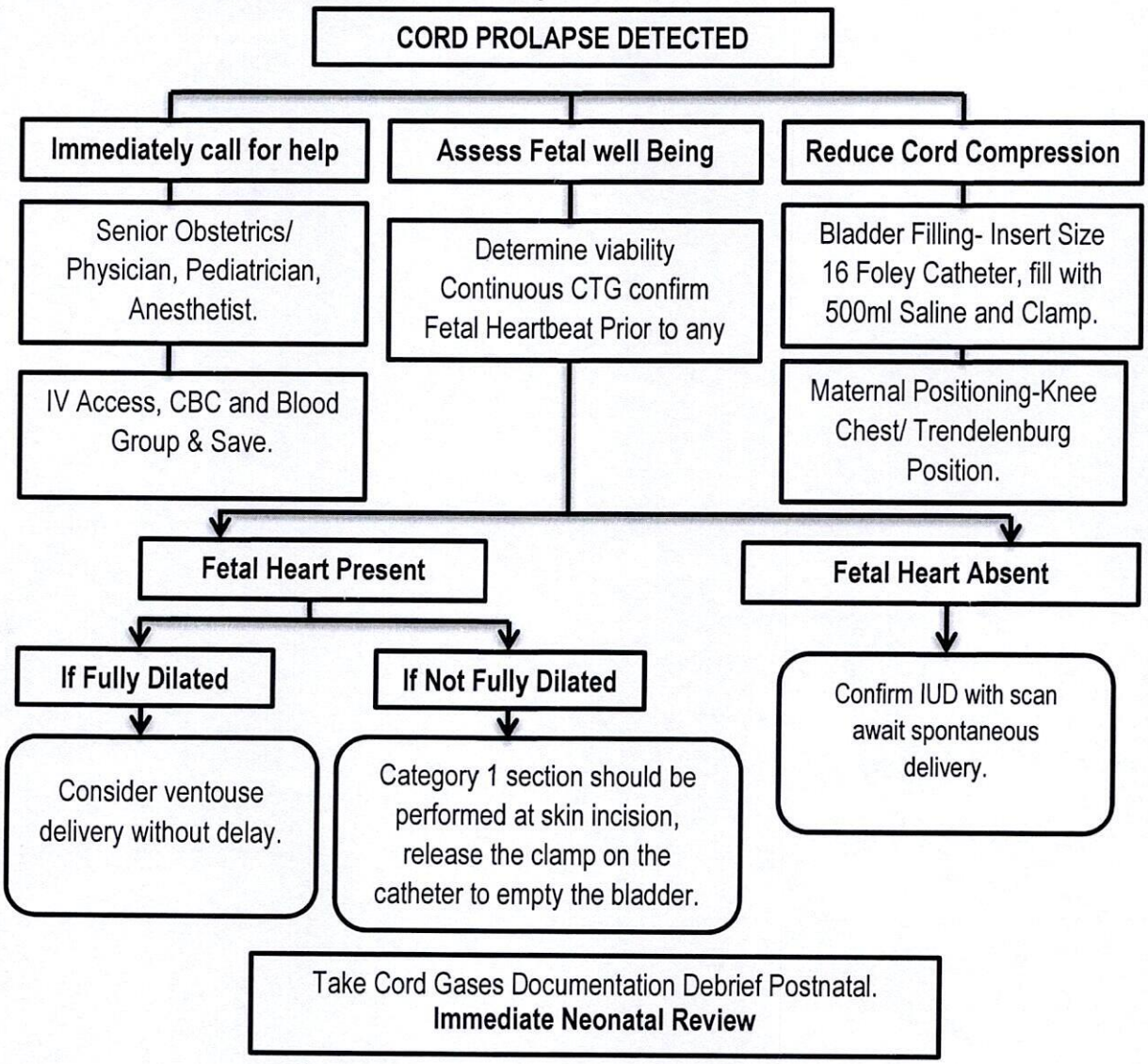
4.6.3 If the cord is not pulsating, the fetus is dead. Proceed with birth of the baby in the manner that is safest for the woman.
4.6.4 Document all procedures done.

4.7 Special situations:
4.7.1 **Prolapse on an antepartum unit**- management is the same as describe above when prolapse occurs on an antepartum unit. However, we do not perform an emergency caesarean delivery if there is no fetal heart rate as successful neonatal resuscitation is not possible after a prolong period of asystole.
4.7.2 **Pre- hospital cord prolapse:**
4.7.2.1 Umbilical cord prolapse may occur with premature rupture of membranes outside of the hospital or during planned home birth.
4.7.2.2 Women with an overt cord prolapse should call for help and assume the knee-chest face- down position, or lie on the floor with pillows to elevate the hips above the heart while waiting for an ambulance for hospital transfer.
4.7.2.3 During ambulance transfer, however, the knee-chest position is potentially unsafe for the mother so a left lateral position is advised, with pillows under the hip.
4.7.2.4 If possible, the presenting part should be elevated manually or by bladder distension during the transfer, as described above.

4.8 **Anticipation and prevention of cord prolapse:**
4.8.1 **Anticipating and managing risk**- the sensitivity and specificity of ultrasound examination for detection of cord prolapse are unclear and most cord prolapses occur in women without antepartum sonographic evidence of funic presentation, color flow Doppler studies can clarify cord position if there is uncertainty on real-time sonographic examination.
4.8.2 Cord prolapse should be excluded be vaginal examination after spontaneous rupture of membranes in women with risk factors for prolapse or with fetal heart rate decelerations.
4.8.3 Perform amnionotomy (if needed) only when the vertex is well applied to the cervix. When the vertex is not well applied and amniotomy is necessary, "controlled amniotomy" with either a fetal scalp electrode, G22 spinal needle, or small angiocatheter with the needle removed and simultaneous application of fundal pressure may decrease the risk of prolapse.

4.8.4 In pregnancies with hydramnios or an unengaged presenting part, we use a small gauge needle to puncture fetal membranes in one or more places in the operating room. This "controlled amniotomy" minimizes the risk of gushing amniotic fluid and enables emergency caesarean delivery in the event of cord prolapse.

4.9 **Figure 1: Cord Prolapse Management Pathway**



5. MATERIALS AND EQUIPMENT:

N/A

6. RESPONSIBILITIES:

6.1 Physician
6.2 Nurses
6.3 Midwives

7. APPENDICES:

N/A

8. REFERENCES:

8.1 Umbilical Cord Prolapse, 2019.
8.2 Guidelines for Obstetrics & Gynecology, Ministry of Health, 2013.

9. APPROVALS:

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