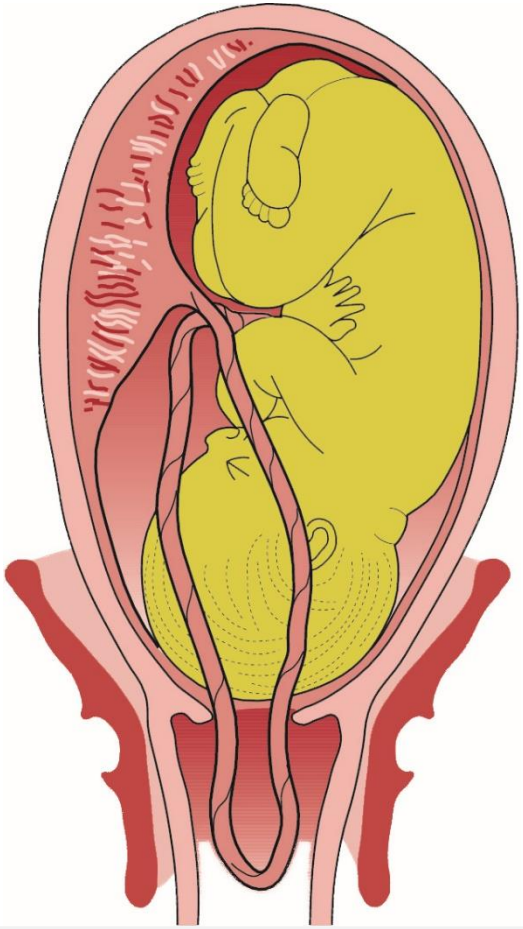
Cord Prolapse



What is cord prolapse?

Umbilical cord protrudes beyond the presenting part after the rupture of membranes define as the prolapse.

(Cord presentation is the presence of the umbilical cord between the fetal presenting part and the cervix, with or without membrane rupture)

Overall incidence of cord prolapse is around 0.1% to 0.6%.

Commonly associated with breech presentation and multiple pregnancies.

Perinatal mortality associated with it is around 91/1000. (According to 2008 rcog)

Delay in transfer to hospital is a important contributory factor for the increased bad outcomes.

Risk factors for cord prolapse

It is a duty of clinicians to identify this obstetric emergency and act accordingly.

Risk factors can be broadly categorized into two. As;

- General
- Procedure related.

General risk factors:

- Multiparity
- Low birth weight less than 2.5kg
- Prematurity less than 37 weeks
- Foetal congenital anomalies
- Breech presentation
- Transverse , oblique and unstable lie.
- Second twin
- Polyamniohydrosis.

Procedure related:

- Artificial rupture of membranes.
- During external cephalic version.
- Internal podalic version
- Stabilising induction of labour.
- Insertion of uterine pressure transducer.

In cephalic presentation with head engagement

When the foetal head is engaged to the pelvic inlet

The round, hard skull fit to the pelvic Inlet.

When the membranes are ruptured, no chance for cord prolapse

So the risk of cord prolapse is minimal with fully engaged cephalic presentation.

Mechanism of Cord Prolapse

Breech presentation → Spontaneous rupture of membranes → As the presenting part is soft in breech, it doesn't fit tightly to the pelvic inlet. → So the free cord tend to come out with the gush of amniotic fluid through the cervix (cord prolapse)

Mechanism of Cord Prolapse

In premature foetus

The cephalic presentation is not yet occurred, so the foetus is more prone to be in non cephalic presentation.

So , as is in breech presentation, vaginal delivery of premature babies also have a high risk for cord prolapse.

How to prevent Cord prolapse?

- Women with transverse lie, oblique or unstable lie are advised to admit at 37+6 weeks or prior if there are symptoms of labour present.
- Artificial rupture of membranes should be avoided whenever possible if presenting part is mobile. If need, do in a setting where immediate caesarean section is possible.
- Non cephalic presentation and premature rupture of membranes offer the admission.

- Cord prolapse can occur even without outward signs and with normal foetal heart rate pattern.

- The cord should be examined for at every vaginal examination in labour and after spontaneous rupture of membranes if risk factors are present or if cardiotocographic abnormalities commence soon thereafter.

- Cord prolapse should be suspected where there is an abnormal fetal heart rate pattern.
  1. Bradycardia
  2. Variable decelerations and etc

- particularly if such changes commence soon after membrane rupture, spontaneously or with amniotomy.

Management

- The foetus should be delivered immediately by a Operative vaginal delivery or by a category 1 caesarean section.

- Measures to apply for reduce compression during transfer to caesarean section,
  1. Put patient in to knee to chest position.
  2. Push the presenting part upward by inserting 2 fingers vaginally
  3. Fill the bladder with 500 ml of warm saline.
  4. Put a hand into vagina to push up the parenting part.(But this is not practical always).

- Prevent spasms by reducing exposure and handling of the cord.

- Reduce cord into vagina to maintain body temperature and apply a warm saline swab to prevent it coming back.

- Tocolytics can be given to reduce the uterine contractions and improve the oxygenation of the foetus. (Turbutaline 250 micrograms, S/C)

It is important to avoid the cord handling as much as possible as it provokes the spasms.

- Neonatal team should be present at delivery.
- Above measures should not make unnecessary delay in immediate delivery.
- Continuous foetal monitoring is doing before, during and after cord replacement.

- A category 1 caesarean section should be performed with the aim of delivering within 30 minutes or less if there is cord prolapse associated with a suspicious or pathological fetal heart rate pattern but without unduly risking maternal safety.

- Verbal consent is satisfactory.

- Breech extraction can be performed under some circumstances, such as after internal podalic version for the second twin.

- A competent doctor in the resuscitation of the newborn should attend all deliveries with cord prolapse. Paired cord blood samples should be taken for pH and base excess measurement.

- Women should be counselled on both continuation and termination of pregnancy following cord prolapse at the threshold of viability.

- Following the procure need to debrief to the mother and consider on psychological aspect of the mother.

Adverse outcomes following Cord Prolapse

1. Due to sudden contractions of the umbilical cord reduce the oxygenation of the foetus and can lead to death of the foetus.

2. Cerebral palsy can happen due to hypoxia.

3. Major neurological handicap also can result.

Prognosis

- Outcomes depend on the gestation.
- Other complications that can be associated are intrauterine growth restriction and etc. due to long cord compression.
- With a term baby and when diagnosis has been made promptly in hospital , the prognosis is excellent.

- If the cord prolapse happens outside the hospital, the foetus is likely to be dead by the time of admission.

- If cord compression lasts more than 10 minutes, cerebral damage will occur. If continued around 20 minutes death can result.

- These time will reduce in already compromised foetus.