

# Prevalence and Perinatal Mortality of Cord Prolapse and Presentation

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**Aims and objectives;** To analyse the prevalence and perinatal mortality in cord prolapse. **Study design:** All cases of cord prolapse managed in gynae unit 3 at Sir Ganga Ram Hospital were identified. **Period:** From 20 March 2004 to 20 March 2005. **Results:** 23 patients of cord prolapse and presentation were identified. During this time 5408 births took place giving a prevalence of 1 in 235 total births which comes upto 0.42%. There were 6 cases of cord presentation (0.11%) and 17 cases of cord prolapse (0.31%). 19 cases were born alive (82.6%). There were 4 still births giving a still birth rate of 17.4% or 174/1000 births with cord prolapse and presentation. One neonatal death occurred among 19 live born babies giving a rate of 5.21% or 52.1/1000 live births. The uncorrected perinatal mortality was 217/1000 births or 21.7% with cord prolapse and presentation. **Conclusion:** Cord prolapse and presentation occur with prevalence of 0.43%. The perinatal mortality rate in this series was 21.7% of births with cord prolapse and presentation.

**Key words:** Perinatal mortality, prevalence, cord prolapse

Umbilical cord prolapse and cord presentation is an obstetrical emergency. It is associated with high risk of perinatal mortality and morbidity. Mortality slightly lower with cord presentation but it may lead to cord prolapse. The principle subsequent adverse infant outcomes are fetal asphyxia, brain damage & death, resulting from cord compression & from spasm of umbilical vessels, particularly following exposure to cold or manipulation. There are various types of clinical presentations:

- frank cord prolapse
- occult cord prolapse
- cord presentation

The etiological factors share a common mechanism, which is the presenting part does not completely occupy the lower segment of uterus. Etiological factors are characterized as malpresentation, high cephalic presenting part, preterm labor, low birth weight, multiple pregnancy, multiparity, polyhydramnios, abnormal fetus, excessively long umbilical cord, vilamentous insertion of the cord battledore placenta, uterine anomalies, iatrogenic causes, amniotomy, manual rotation or forceps rotation, external cephalic version, internal podalic version, fetal hypotension.

Diagnosis depends upon clinical examination, CTG, ultrasonography, endoscope and contact hysteroscope.

Prevention depends upon in anticipating the high risk cases. Careful ARM can prevent cord prolapse. In cord prolapse with alive baby, emergency management should be done, in case of an IUD, vaginal delivery should be carried out.

## Material and methods:

23 cases of cord prolapse were identified in the department of gynae and obstetrics at Sir Ganga Ram Hospital from 20<sup>th</sup> March 2004 to 20<sup>th</sup> March 2005.

Details relating to maternal age, parity, gestation, antenatal complications, labor onset, rupture of membranes, presentation, type of delivery, birth weight, APGAR score were determined by inspection of obstetrics

case records. Diagnosis of cord prolapse was accepted if membranes have ruptured & the cord was palpated below or beside the presenting part on vaginal examination. Diagnosis of cord presentation was accepted if membranes were intact & cord was palpated below or beside the presenting part. In all cases clinical efforts were made to reduce cord compression by digitally elevating the presenting part, by placing the mother in elevated Sims position. The degree of cervical dilatation and fetal station were noted, timing of membranes rupture, cord prolapse diagnosis & delivery were all recorded.

## Results

Table 1: Prevalence of cord prolapse & cord presentation Sir Ganga Ram Hospital, Lahore March 2004-March 2005 inclusive (n=5408)

Type	n=	%age
Cord prolapse	17	0.31
Cord presentation	06	0.11
Cord prolapse & presentation	23	0.42

Table II Still births and neonatal deaths, uncorrected perinatal mortality in cases of cord prolapse & presentation

	n=	%age
Total cord prolapse & presentation cases	23	100
Babies born alive	19/23	82.6
Still births	4/23	17.4 (174/1000births)
Neonatal deaths	1/19	5.21 (52.1/1000 live births)
Uncorrected perinatal mortality	5/23	21.7 (217/1000births)

There were 23 cases of cord prolapse & presentation over the course of study period of one year i.e from 20<sup>th</sup> March 2004 to 20<sup>th</sup> March 2005. During this time there were 5408 births, giving the prevalence of 1 in 235 births i.e 0.42%. There were 6 cases of cord presentation (0.11%) & 17 cases of cord prolapse (0.31%).

Total cases of cord prolapse & presentations were 23,19(82.6%)were born alive. There were 4/23 still births among these cases giving a still birth rate in the cord prolapse & presentation population of 17.4% or 174/1000 births with cord prolapse & presentation. One neonatal death occurred among 19 live born babies giving a rate of 5.21% or 52.1/1000 live births with cord prolapse & presentation .Uncorrected perinatal mortality was 217/1000 births with cord prolapse & presentation or 21.7%.Of the still births one baby was alive at the time cord prolapse was diagnosed but was nonviable due to anencephaly. The fetal heart rate was not present in 4 cases. Of the neonatal death, the cause was prematurity & neonatal sepsis in the baby.

### Discussion:

Outcome of umbilical cord prolapse in western tertiary care centres is encouraging but whether these results can be generalised to other settings is unclear. Umbilical cord prolapse & presentation are obstetrical emergencies. The incidence of cord prolapse & presentation in this study was 0.42%,that of cord prolapse alone was 0.3%&cord presentation alone 0.11% .In Western studies the incidence of cord prolapse has fallen from 0.6% to 0.2%.This fall reflects the changes in obstetrical practices. The predisposing factors associated with umbilical cord prolapse have changed little in the past 40 years. This series has confirmed the association of cord prolapse & presentation with high cephalic presenting part, abnormal presentation, low gestational age, multiple pregnancy & high parity. Induction of labor was not causative in the present study, probably because the usual precautions were observed before amniootomy was performed.

Umbilical cord prolapse & presentation can result in an increased fetal mortality & morbidity. The perinatal mortality rate in this series was 21.7%of births with cord prolapse & presentation. The causes of deaths for babies were asphyxia in 3,prematurity in 1,anencephaly in 1.The cause of death was related more to birth asphyxia than to complications of prematurity & low birth weight. The perinatal mortality rate in Western studies associated with umbilical cord prolapse has fallen from 37.5%of all births between 1924 &1948 to between 3.6%&16.2%of births with in the past few decades. part of this fall in perinatal mortality rate following umbilical cord prolapse is due to the more rapid & frequent use of Caesarean section once umbilical cord prolapse is diagnosed. However ,in view of the association between umbilical cord prolapse & preterm birth, improvements in neonatal intensive care are probably more important. Cord prolapse has an acknowledged urgency which demands delivery as soon as possible. Rapid response times are only possible if the

patient is in hospital when the cord prolapse is diagnosed, appropriate obstetric, midwifery & anaesthetic staff are readily available& a dedicated operating theater for such emergencies exist. The fetal mortality rate with cord prolapse in Pakistan can be greatly reduced & many babies saved by proper education of the women& maternal health services. Thus home deliveries not recommended & all women must be told to come early in labor to hospital.

### Conclusion:

Cord prolapse & cord presentation occur with prevalence of 0.43%in this study population. The predisposing risk factors have not changed over the past 40 years. fetal mortality was attributable to birth asphyxia, prematurity & congenital anomaly.61.7% of patients developed cord prolapse outside the hospital& these patients had no antenatal checkup. Fetal outcome was good among the cases developing cord prolapse in the hospital. A simple approach of forcing back the presenting fetal part and prompt Ceasarean section decreases the perinatal mortality rate.

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