

Study of fetal outcome with cord around neck in a tertiary care hospital

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Abstract

Background: Nuchal cord is often blamed for problems that are encountered during delivery and is often cited as a major cause of fetal distress and perinatal mortality. The reported incidence varies from 5.7% in India to upto 35.1% in Switzerland. With the increasing use of colour Doppler in Ultrasound, nuchal cord has become a part of the report. **Aims and Objectives:** To study the perinatal outcome in babies with cord around the neck. To study the mode of delivery in babies with cord around the neck. To study the effect of loose nuchal cord and tight nuchal cord around the neck of fetus. **Methodology:** A total of 434 full term deliveries were studied, with 51 cases with a single or multiple loop of cord around neck. The cases without cord around neck served as control. This study was conducted at MIMSR Medical College and Yeshwantrao Chavan Rural Hospital, Latur, a tertiary care unit from 1 April 2017 to September 30, 2017.

Result: Out of the 434 deliveries that occurred during the study period the incidence of cord around neck is 11.7%. (51 cases). Out of 51 cases, 64.7%(33 cases) had loose loop of cord around neck. 35.3% (18 cases) had tight loop of cord around neck. 58.8% (30 cases) had single loop of cord around neck. 30% (17 cases) had 2 loops of cord around neck. 7% (4 cases) had 3 or more loops of cord around neck. **Conclusion:** Nuchal cord does not increase the chances of caesarean delivery. The ultrasound diagnosis of a nuchal cord at the end of pregnancy should not be the indication of elective caesarean delivery. Loose nuchal cord is not associated with adverse perinatal outcome. However, tight nuchal cord may be associated with increased incidence of fetal distress.

Keywords: Nuchal cord, Perinatal mortality, Fetal distress.

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INTRODUCTION

Intrauterine life is sustained by two small arteries and a tortuous vein coursing through a long flexible cord. The actual significance that a nuchal cord has on the outcome of fetus is controversial. But nuchal cord is often blamed for problems that are encountered during delivery and is often cited as a major cause of fetal distress and perinatal mortality.¹ The reported incidence varies from 5.7% in

India to upto 35.1% in Switzerland.^{2,3} With the increasing use of colour Doppler in Ultrasound, nuchal cord has become a part of the report. Umbilical cord/ Funis forms the connecting link between fetus and placenta. Cord length of umbilical cord is variable. An average umbilical cord length is 55cm with diameter 1-2 cm and 11 helices. Short cord is <35cm and long cord is >80cm.⁴ The finding of either a single or multiple loops of cord around the neck increases with gestational age and with long cords. It has two types. Type A means the loop of cord is loose around the baby's neck, while Type B indicates that the loop is tight. If the umbilical cord becomes overstretched or compressed during labour, it will lead to fetal bradycardia temporarily. These brief variable heart decelerations are not harmful and are seen during the second stage of labour.⁵ Measures will be taken to relieve the presumed cord compression which includes giving oxygen, IV fluids and left lateral position to mother. If it is still not relieved, a caesarean delivery may be done.

METHODOLOGY

A total of 434 full term deliveries were studied, with 51 cases with a single or multiple loop of cord around neck. The cases without cord around neck served as control. This study was conducted at MIMSR Medical College and Yeshwantrao Chavan Rural Hospital, Latur, a tertiary care unit from 1 April 2017 to September 30, 2017. Gestational age was calculated from reliable menstrual history and early sonographic measurement of CRL. The cases selected were without any obstetric complications, medical illness and surgical illness. Patient excluded from the study were those with risk factors like anaemia, PIH, congenital anomaly, preterm, multiple pregnancy, cephalopelvic disproportion, antepartum hemorrhage. The following variables were recorded - mode of delivery, presence of fetal distress, presence or absence of meconium stained amniotic fluid, number of loops of cord around the neck and whether it was loose or tight, transfer to neonatology unit.

RESULT

Out of the 434 deliveries that occurred during the study period the incidence of cord around neck is 11.7%. (51 cases). Out of 51 cases, 64.7% (33 cases) had loose loop of cord around neck. 35.3% (18 cases) had tight loop of cord around neck. 58.8% (30 cases) had single loop of cord around neck. 30% (17 cases) had 2 loops of cord around neck. 7% (4 cases) had 3 or more loops of cord around neck.

Table 1: Comparison between nuchal cord and control group

	Nuchal CORD Group (51 Cases)	Non-Nuchal group (383 Control)
Vaginal delivery	20 (39.2%)	165 (43%)
Caesarean section	31 (60.7%)	218 (56.9%)
Meconium stained liquor	12 (23.5%)	58 (15.14%)
NICU admission	9 (17%)	32 (8%)

Table 2 : Comparison between loose and tight nuchal cord group

	Loose Loop 33 Cases	Tight Loop 18 Cases
Vaginal delivery	18 (54.5%)	2 (11.1%)
Caesarean section	15 (45.5%)	16 (89%)
Meconium stained liquor	4 (12%)	8 (44%)
NICU admission	2 (6%)	7 (38.8%)

Table 3: Number of Loops

	Loose loop 33 cases	Tight loop 18 cases
1 Loop	27	3
2 Loops	5	12
3 or more Loops	1	3

Table 4: Incidence of Cord around Neck

Sheiner E. <i>et al</i> ⁶	14.7%
Pregrine E. <i>et al</i> ⁷	18%
Mastro Battista <i>et al</i> ⁸	17%
Mahendra G <i>et al</i> ⁹	14.7%
Present study	11.7%

DISCUSSION

The frequency of nuchal cord found in this study is 11.7% which varies from 5.7% to 35.1%.^{1,2} Longer cords tend to become looped around the neck. Nuchal coiling can occur in shorter cords in which cases the cord tends to be more tightly wrapped around the fetal neck.¹⁰ Incidence of lower segment caesarean section with nuchal cord in this study is 60.7% and 56.9% in the control group. Present study shows caesarean rate of 45.5% in loose nuchal cord group and 89% in tight nuchal cord group. Meconium stained liquor was found in 23.5% in study group and 15.1% in the control group. Present study had no perinatal mortality with nuchal cord which is similar to observation of Larson JD *et al*¹¹, Miser WF¹². Though Apgar score was slightly low in cases as compared to the control group, the perinatal outcome was good in both the groups. NICU admission was slightly higher in tight nuchal cord group.

CONCLUSION

We conclude that nuchal cord does not increase the chances of caesarean delivery. The ultrasound diagnosis of a nuchal cord at the end of pregnancy should not be the indication of elective caesarean delivery. Loose nuchal cord may not be associated with adverse perinatal outcome. However, tight nuchal cord may be associated with increased incidence of fetal distress.

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