

A rare case of six loops of nuchal cord

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Abstract

Nuchal cord is defined as $\geq 360^\circ$ wrapping of the umbilical cord around the fetal neck. Despite good prognosis in majority of cases, nuchal cord may be associated with variable fetal heart rate deceleration, decreased fetal movements, fetal distress & even intrauterine fetal demise. We present a primigravida woman, who delivered a healthy male baby with five loops of cord around neck. A 26 years old primigravida woman presented with 38 weeks of pregnancy. She had hydramnios, fibroid complicating pregnancy with breech presentation. At the time of delivery of the head it was observed that the baby had five loops of cords around the neck & there was no knot in the cord. Baby cried immediately after birth and had good tone & activity. Risk factors for a nuchal cord include Long umbilical cord length, baby being large for gestational age, Multiple gestation pregnancies, Nutritional deficiencies affecting the structure and protective barrier of the umbilical cord, hydramnios, Abnormal fetal presentation during delivery, such as breech or shoulder presentation. Sensitivity of ultrasound diagnosis of a nuchal cord prior to induction of labour at term is low around 37.5%. Colour doppler has a sensitivity of 60% to 95% with a false positive rate of 19% in diagnosis. Our patient was monitored with regular biophysical profiles, non-stress tests & Doppler assessment of the umbilical artery hence delivered a healthy baby.

Keywords: Nuchal cord, Six loop, cord around the fetal neck

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Introduction

Nuchal cord is defined as $\geq 360^\circ$ wrapping of the umbilical cord around the fetal neck [1] & is present in 25-30% of normal deliveries [2,3]. It results from the movements of the fetus through a loop of the umbilical cord [4]. Around 25–50% nuchal cords will resolve prior to delivery & up to 60% of fetuses have a nuchal cord present at some time during pregnancy [5]. Despite good prognosis in majority of cases, nuchal cord may be associated with variable fetal heart rate deceleration, decreased fetal movements, fetal distress & even intrauterine fetal demise [6]. We present a primigravida woman, who delivered a healthy male baby with six loops of cord around neck.

Case

A 26 years old primigravida woman presented with 38 weeks of pregnancy. She had hydramnios, fibroid complicating pregnancy with breech presentation. On examination her general condition was good, the uterus

was term size, non-tender, relaxed with single fetus presenting as breech & fetal heart sound could be heard. Large fibroid was palpable. She was taken up for elective section. At the time of delivery of the head it was observed that the baby had five loops of cords around the neck & there was no knot in the cord. The umbilical cord had three vessels. The placenta had no obvious abnormality & there was no retro placental clot. Baby cried immediately after birth and had good tone & activity.

Discussion

Nuchal cords can be loose or tight depending on whether the loop can be manually reduced over the fetal head [7,8]. Disruption of the smooth contour of the fetal neck compressing the skin in that area, referred to as the "divot sign" [9], has been used to define tight nuchal cords [10]. Risk factors for a nuchal cord include Long umbilical cord length, baby being large for gestational age, Multiple gestation pregnancies, Nutritional deficiencies affecting the structure and protective barrier of the umbilical cord, hydramnios, Abnormal

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Case Report

fetal presentation during delivery, such as breech or shoulder presentation. Nuchal cord is increasingly associated with breech presentation, right-sided fetal position, a male fetus, increased fetal activity, reduced

fetal movements [11] a long length & less vascular coiling of cord [12,13], abnormal umbilical artery Doppler findings [10], abnormal ductus venosus velocity waveforms [14], a posterior placenta



Fig 1 & 2: Six loops of cord around neck

[15], induction of labour [16], variable decelerations of the fetal heart rate [16,17], meconium-stained amniotic fluid [16,17], shoulder dystocia [18], operative vaginal delivery [17], emergency lower segment Cesarean section [19], IUGR [20] low Apgar scores [16,17] increased neonatal unit admission [19], need for resuscitation [16], umbilical artery academia [17], neonatal hypovolemic shock [21], neonatal anemia [22], dural sinus dilatation [23], stillbirth [24]. Umbilical cord vessels can undergo sudden compression due to cord prolapse, cord entanglement around body part or true knot formation leading to acute fetal distress & fetal death. Cases of 4 or more nuchal loops are at high risk for developing complications in labour & delivery, including variable fetal heart rate, decreased fetal movements, umbilical arterial metabolic academia, neonatal anemia & in extreme situations, intrauterine fetal demise. Sensitivity of ultrasound diagnosis of a nuchal cord prior to induction of labour at term is low around 37.5% with specificity, positive & negative predictive values of 80%, 29% & 85%, respectively [25]. Nuchal cord may be suspected prior to delivery by presence of variable decelerations in fetal cardiocograph during labor, particularly shouldering or double variable or W pattern [26]. Colour doppler has a sensitivity of 60% to 95% with a false positive rate of

19% in diagnosis [27]. Our patient was monitored with regular biophysical profiles, non-stress tests & Doppler assessment of the umbilical artery hence delivered a healthy baby.

Conclusion

Obstetrician & sonologists must remain vigilant to identify cord related problems while performing obstetric ultrasonography. At earliest signs of fetal discomfort or distress like decreased fetal movement or persistent decelerations operative intervention is recommended.

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Case Report

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Case Report

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