

All Wrapped Up: Sextuple Nuchal Cord as a Cause of Fetal Growth Restriction and Reduced Fetal Movements

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Background: A nuchal cord is defined as the umbilical cord wrapping 360 degrees around the fetal neck. There is increasing incidence with advancing gestational age, with single nuchal cord identified in up to 35% of singleton deliveries at term.^{1,2} The incidence of multiple nuchal cord (≥ 2) is inversely proportional to the number of loops of nuchal cord present, and these are suggested to be associated with increased adverse outcomes including stillbirth and compromised neonatal status at delivery.³ Risk factors for multiple nuchal cord include abnormally long cord (>70 cm), excessive fetal movement, and polyhydramnios.³

Case: KP, a 33-year-old G1P0, presented to the Day Assessment Unit (DAU) with decreased fetal movements and reduced fundal height at 36+0 weeks gestation. Her CTG was abnormal with no reactivity for 40 minutes and two complicated variable decelerations. She was prepared for a category 1 caesarean section. Improvement in the CTG was observed following commencement of IV fluids. The decision to deliver was reversed, and an urgent obstetric ultrasound was sought.

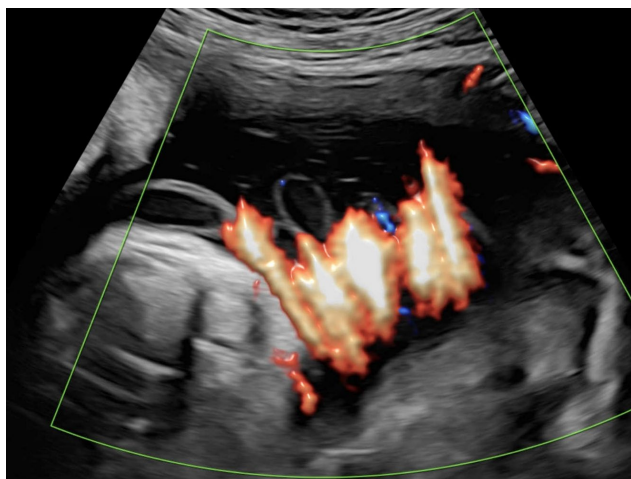


Figure 1: Ultrasound (colour Doppler) image showing multiple nuchal cord

Investigations: Kleihauer was negative. Local ultrasound found a normally grown fetus with normal AFI and dopplers. The next day, tertiary ultrasound was requested due to ongoing subtle CTG concerns. The tertiary scan found estimated fetal weight of 2211 g (5th centile). The umbilical cord was seen to be wrapped around the fetal neck multiple times with very limited free cord. AFI and dopplers were normal.



Figure 2: Intraoperative photograph of the growth restricted fetus with sextuple nuchal cord

Management: KP underwent a category 2 emergency caesarean section at 36+1 for abnormal antenatal CTG, US findings of FGR and multiple loops of cord around the fetal neck. A live male infant was delivered and found to have the cord wrapped tightly around his neck 6 times. The baby required stimulation and 7 minutes of CPAP for poor respiratory effort. APGARs were 5, 5, and 9. The arterial cord pH was 7.20 and lactate was 4.03. Placental histology found a long umbilical cord (75 cm) and no other abnormality. Baby KP was discharged home after 5 days in the SCN.

Discussion: The presence of multiple nuchal cord is a rare but important finding as this can pose a significant threat to fetal wellbeing. As represented by this case, multiple nuchal cord should be considered when investigating for causes of decreased fetal movements or an abnormal antenatal CTG. Early escalation and prompt intervention are essential in this setting. This case adds to the existing body of literature highlighting an association between multiple nuchal cord and higher incidence of intrauterine growth restriction, operative delivery, and low Apgar scores. Previous studies have identified an increased perinatal death rate associated with multiple nuchal cord. Abnormally long cord length is a risk factor for multiple nuchal cord, as demonstrated in this case. Sonographic imaging can aid diagnosis in the setting of prematurity or an equivocal clinical picture, where decision making regarding timing of delivery may be difficult. Specialist tertiary level sonography may be required to accurately identify multiple nuchal cord.

References:

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