

# Magnetic Resonance Angiography of Nuchal Cord

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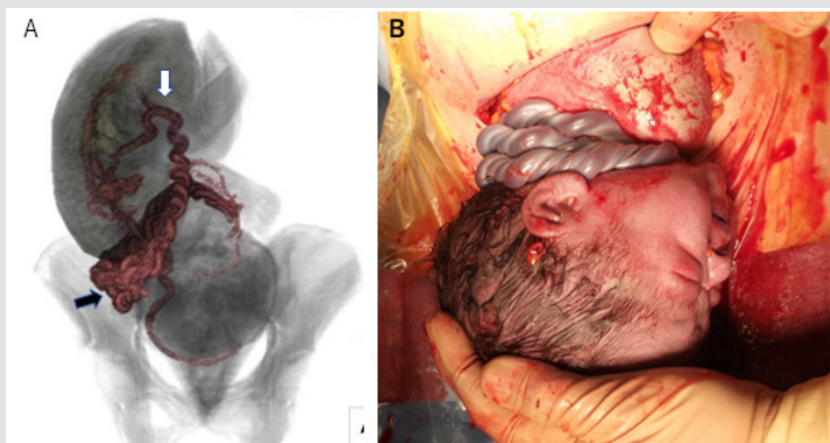
## ABSTRACT

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## Opinion

Novel magnetic resonance (MR) angiography techniques are able to visual vessels supplying or draining the fetus and to differentiate umbilical cord coiling [1,2]. Successful clinical application of the noninvasive techniques can give a new insight in depth knowledge of umbilical cord abnormalities. A 28-year-old primigravida at 38 weeks of gestation presented to labor floor with decreased fetal movement. Ultrasound examination suggested appropriately grown fetus with potentially multiple loops of umbilical cord wrapped around the fetal neck. The head was not engaged in the pelvis. Cardiotocography revealed no abnormal results. Magnetic resonance (MR) angiography reconstruction of umbilical cord demonstrated three nuchal loops (Figure 1A). Shortened free umbilical cord was also found in the amniotic

fluid (Figure 1A). The patient underwent cesarean delivery of the neonate, in order to avoid possible intrapartum events associated with cord entanglement. On a cesarean performed 18 hours later, triple loop nuchal cord was visible (Figure 1B). A 3012-g male infant was born with Apgar scores of 8 at one minute and 9 at five minutes. Neonatal admission was not indicated. Examination of the placenta demonstrated a relatively long umbilical cord measuring 75 cm, whereas a normal length ranges 55-61 cm. Nuchal cords occur in about 10-30% of fetuses [3,4]. Although most cases are not associated with perinatal morbidity and mortality, it can affect the outcome of delivery with possible long-term effects on the affected infant [4,5]. Fetal MR imaging and angiography, therefore, seems to be a predicting tool for the assessment of umbilical abnormalities.



**Figure 1:** Magnetic Resonance angiography of fetus showing three nuchal loops (black arrow).

- A. Shortened free umbilical cord was also found in the amniotic fluid (white arrow).  
 B. Triple loop nuchal cord confirmed at delivery.

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