

Second-Trimester Fetal Death Due To Cord Entanglement Around The Neck

İkinci Trimesterde Boyun Çevresinde Kordon Dolanması Nedeniyle Gerçekleşen Fetal Ölüm

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ABSTRACT

Cord entanglement is the situation when one or more loops of the umbilical cord encircle any part of the body. Cord complications may result in fetal demise in the third trimester. However, they are not known to be etiologic factors for missed abortion, in spite of the high ratio of cord entanglement during the first half of pregnancy. We present a case of intrauterine fetal death at 15 weeks' gestation due to cord entanglement. When the fetus was delivered, an abnormally long umbilical cord for this gestational age was realized (30 cm). The cord passed above the right shoulder of the fetus, and encircled the neck completely and tightly. Then the cord passed through the left axilla towards the placenta. Macroscopically there was no fetal abnormality. Postmortem pathological examination proved the absence of any structural malformations. The most possible cause of intrauterine death was the nuchal cord obstructing blood flow through the umbilical cord.

Key Words: Cord entanglement, fetal death, intrauterine death

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ÖZET

Kordon dolanması bir veya birden fazla umbilikal kordon halkasının vücudun herhangi bir yerine sarıldığı durumdur. Kordon komplikasyonları üçüncü trimesterde fetal kayba yol açabilmektedir. Gebeliğin ilk yarısında yüksek oranda görülmesine rağmen kordon dolanması abortusun etiyolojik faktörleri arasında yer almamaktadır. Bu makalede 15. gebelik haftasında kordon dolanması nedeniyle gerçekleşen bir intrauterin fetal ölüm olgusu sunmaktayız. Fetus doğduğunda bu gebelik haftası için anormal derecede uzun bir umbilikal kordon dikkati çekmekteydi (30 cm). Kordon fetusun sağ omuzu üzerinden geçip boyunu sıkıca ve tam olarak çevreliyordu. Ardından sol aksillanın altından geçerek plasentaya uzanıyordu. Makroskopik olarak fetal anomali yoktu. Postmortem patolojik muayene de yapısal anomali olmadığını doğruladı. İntrauterin ölümün en olası nedeni umbilikal kordonda kan akımının obstrüksiyonu idi.

Anahtar Sözcükler: Kordon dolanması, fetal ölüm, intrauterin ölüm

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INTRODUCTION

Cord entanglement is the situation when one or more loops of the umbilical cord encircle any part of the body (1). The clinical significance of nuchal cord is controversial. While most of the studies showed that it is not associated with adverse perinatal outcome (2-5), there are a few studies suggesting that the nuchal cord at term is associated with increased rate of operative vaginal and cesarean delivery, as well as slightly lower apgar scores (6). However, there is no data regarding the clinical significance of cord entanglement in the second trimester. We hereby, present a case of intrauterine fetal death at 15 weeks' gestation due to cord entanglement.

CASE REPORT

Routine antenatal ultrasonography of a 32 year-old, gravida 3 parity 2 woman, revealed the lack of cardiac activity without any associated abnormalities at 15 weeks' gestation. Abortion was induced by vaginal administration of 200 mg misoprostol with 2-hour intervals. At the 10th hour of induction the membrane ruptured spontaneously. Amniotic fluid was clear and not blood-stained. When the fetus was delivered, abnormally long umbilical cord was realized (30 cm). The cord passed above the right shoulder of the fetus, and encircled the neck completely and tightly. Then the cord passed through the left axilla towards the placenta (Figure 1a,b). Macroscopically there was no fetal abnormality.

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Postmortem pathological examination proved the absence of any structural malformations. The most possible cause of intrauterine death was the nuchal cord obstructing blood flow through the umbilical cord.

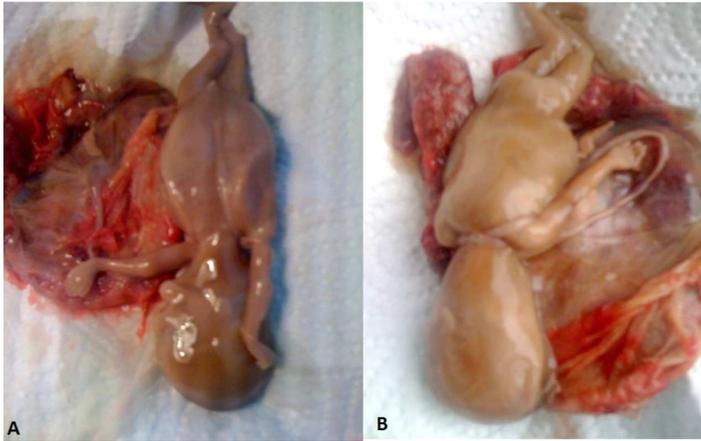


Figure 1 A-B. The umbilical cord around the neck passing through the left axilla is seen.

DISCUSSION

The incidence of cord entanglement around any part of body between 13 and 16 weeks has been reported as 62.9 %. This incidence has been 42.9 % when the cord encircled only the neck (1). This ratio is higher than the incidence of nuchal cord at term which is known as 6-37 % (2). Although umbilical cord increases in length from 0.4 cm at 5 weeks of gestation to almost 60 cm at 38 weeks of gestation, there is a decreasing ratio of cord length to crown-rump length ranging between 3.36 at 14 weeks and 1.53 at 40 weeks (1). The high incidence of the entanglement during the first half of pregnancy may be due to relatively longer cord which enables fetus to move freely leading to cord entanglement (1). Cord complications may result in fetal demise in the third trimester. However, they are not known to be etiologic factors for missed abortion, in spite of the high ratio of cord entanglement during the first half of pregnancy. This may be a consequence of the overlook of cord entanglement in second-trimester fetal death cases, since these fetuses are not examined carefully in this respect.

Studies have shown that Doppler ultrasonography has a sensitivity of 73-96% in the detection of nuchal cord in the third trimester (7-9), whereas gray-scale imaging can detect only 33-70% of them (7,9). To our knowledge, the only report regarding the early gestational weeks was written by Tepper et al. who performed three-dimensional sonography to detect cord entanglement between 13 and 16 weeks' gestation (1). Although color Doppler and three-dimensional ultrasound seem to be sensitive imaging modalities, routine screening of nuchal cord is not recommended as it is generally regarded as a benign condition.

CONCLUSION

This case has shown that cord entanglement may cause intrauterine death even in the early mid-trimester. With this report, we highlighted the possibility of cord complications in the first half of the gestation.

Conflict of Interest

No conflict of interest was declared by the authors.

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