

Fore-lying of the Umbilical Cord after Urination: A Case Report

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Abstract

We present here a case of fore-lying of the umbilical cord. In this case, transvaginal sonography did not reveal the umbilical cord beyond the fetal head before maternal urination; however, 5 minute later, a fore-lying umbilical cord was revealed between the floating fetal head and the uterine cervix after urination. The present case indicates the importance of careful evaluation of preterm premature rupture of the membranes by means of transvaginal ultrasonography in predicting umbilical cord prolapse.

(J Nippon Med Sch 2012; 79: 284–285)

Key words: fore-lying of the umbilical cord, umbilical cord prolapse, preterm premature rupture of the membranes, transvaginal ultrasonography

Introduction

We present here a case of fore-lying of the umbilical cord. In this case, transvaginal sonography did not reveal the umbilical cord beyond the fetal head before maternal urination; however, 5 minute later, a fore-lying umbilical cord was revealed between the floating fetal head and the uterine cervix after urination.

Case Report

A 23-year-old woman, gravida 1, para 0, was referred to our hospital at 30 weeks' 3 days' gestation for a high-risk obstetric consultation due to preterm premature rupture of the membranes. At admission, transvaginal sonography did not reveal the umbilical cord beyond the fetal head before maternal urination (**Fig. 1**); however, after urination a fore-lying umbilical cord was revealed between the

floating fetal head and the uterine cervix (**Fig. 2**). At this time, the dilation of uterine cervix was 2 cm, and the umbilical cord could be touched directly through the uterine cervix. Fetal heart rate tracings showed a reassuring pattern. An emergent cesarean section was performed because of the possibility of umbilical cord prolapse due to fore-lying of the umbilical cord with rupture of the membranes. The neonate was a healthy female weighing 1,240 g with Apgar scores of 8 and 10 at 1 and 5 minutes, respectively. The umbilical arterial pH was 7.301.

Discussion

In the present case, we performed transvaginal ultrasonography again to evaluate the uterine cervical length after urination, and, fortunately, we detected the fore-lying umbilical cord by chance. To date, antenatal assessment of cord presentation by means of ultrasonography has been suggested to be useful for predicting umbilical cord prolapse¹⁻⁴. The

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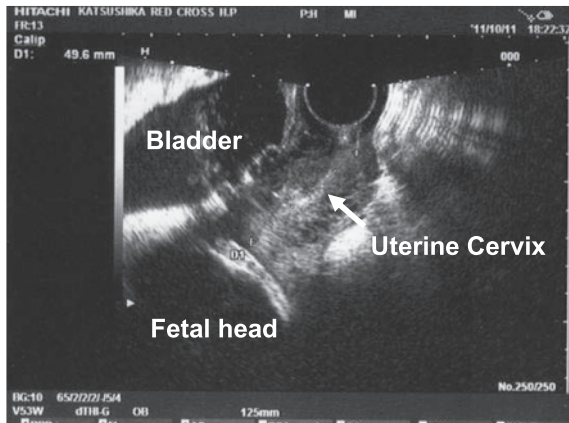


Fig. 1 Transvaginal sonographic finding before urination.

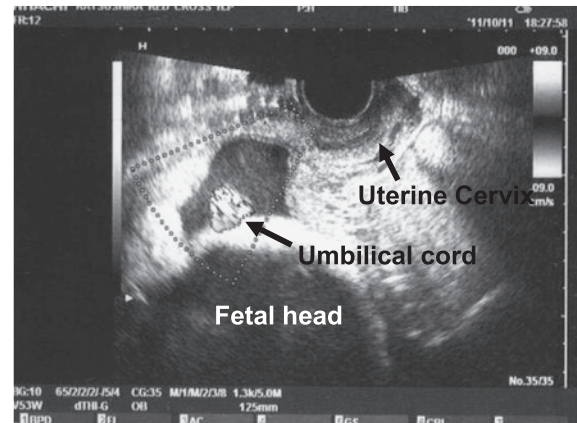


Fig. 2 Transvaginal sonographic finding after urination.

present report is, to our knowledge, the first in which a fore-lying of cord that developed during urination was observed by means of transvaginal ultrasonography in a pregnancy with preterm cephalic presentation and premature rupture of the membranes.

Umbilical cord prolapse has recently been reported to be an important cause of neonatal cerebral palsy in Japan⁵. Umbilical cord prolapse is a rare obstetric emergency that occurs when the umbilical cord descends alongside or beyond the fetal presenting part^{6,7}. It is life-threatening to the fetus because blood flow through the umbilical vessels is usually compromised from compression of the cord between the fetus and the uterus, cervix, or pelvic inlet. The umbilical cord cannot usually prolapse when the fetus is engaged; however there is space for the cord to slip past and prolapse if the fetus is not engaged. In addition, the umbilical cord prolapse can occur anytime when the fetal position is changed, such as, in the present case, after maternal urination. Fore-lying of the umbilical cord, which is called known as "occult umbilical cord prolapse," occurs when the cord descends alongside, but not past, the presenting part; it often cannot be diagnosed with certainty but is suggested by clinical features, such as fetal bradycardia and findings at cesarean delivery⁵. However, the present case

indicates the importance of careful evaluation of preterm premature rupture of the membranes using transvaginal ultrasonography for predicting umbilical cord prolapse. Further study, including the accumulation of similar case reports, is needed.

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(Received, October 12, 2011)

(Accepted, November 9, 2011)