

Abnormally Long Umbilical Cord with Marked Spiraling and True Knots: A Case Report

H Muppala, A Bedoya-Ronga, E Martindale

Citation

H Muppala, A Bedoya-Ronga, E Martindale. *Abnormally Long Umbilical Cord with Marked Spiraling and True Knots: A Case Report*. The Internet Journal of Gynecology and Obstetrics. 2006 Volume 7 Number 2.

Abstract

We describe the clinical case of a patient presenting with multiple umbilical cord abnormalities, in the form of long umbilical cord, two double loop true knots, multiple spiraling or torsion and loop around baby's neck. Fortunately the outcome was good in our case in spite of multiple abnormalities of umbilical cord that could have resulted in fetal compromise or demise.

CASE REPORT

A 31-year old patient was in her eighth pregnancy. She was under consultant and midwife led shared antenatal care. She had no significant past medical and surgical history. All her previous pregnancies resulted in full term normal deliveries. She was admitted with spontaneous rupture of membranes and was induced with Prostin at Term plus 3 days. Had

uncomplicated normal vaginal delivery. A male baby was born in good condition weighing 2840 grams with APGAR scores 7-9-9 at 1-5-10 minutes. There was one loop of cord around baby's neck. Following delivery of placenta the umbilical cord appeared excessively long and measured 142 centimeters (Fig. 1). It was also noted to have two double loop true knots (Fig.2) and marked spiraling or torsion of the umbilical cord (Fig. 1). Placenta weighed 986 grams.

Figure 1

Figure 1: Umbilical cord measuring 142 centimeters and with marked spiraling



Figure 2

Figure 2: Two double loop true knots



DISCUSSION

An average umbilical cord is 55 cm long and is said to be long when it is more than 70 centimetres.¹ In our case grand multiparity, male fetus and increased placental weight has been identified as risk factors for long cords and true knots. Long cords in turn predisposes to excessive spiraling or torsion of the umbilical cord as reported before.^{1, 2} Abnormally long cords are associated with repeated coiling of cord around fetal neck and consequently can result in fetal growth restriction, distress and even demise.³ Infants with excessively long umbilical cords are found to be at a significantly increased risk of brain imaging abnormalities and/or abnormal neurological follow-up.⁴ In addition, others with a history of an excessively long umbilical cord are at increased risk of a second long cord.⁵ True knots in themselves are associated with increased incidence of fetal distress, meconium stained liquor,⁵ and ten fold increased risk of intrauterine fetal death.⁶ Marked spiraling or torsion of cord could compromise blood flow to fetus and result in its demise. Clinical signs of the fetus at risk of umbilical cord compression compensation are; hiccups, hyperactivity, decreased fetal movement and fetal heart rate changes. Identifying umbilical cord abnormalities sonographically during antenatal period is difficult. When a specific abnormality like true knots, nuchal cord made up of single or multiple loops and umbilical cord torsion are identified prenatally, closer monitoring may be useful.⁷ Fortunately the outcome was good in our case in spite of multiple abnormalities of umbilical cord that could have resulted in fetal compromise or demise. This case also raised our awareness about abnormalities of the umbilical cord and placenta.

References

1. Fernando Heredia, Philippe Jeanty. Umbilical cord anomalies. <http://www.TheFetus.net>. Accessed 09/11/06.
2. Bradley W. Bakotic, Theonia Boyd, Robert Poppiti, Solveig Pflueger. Recurrent umbilical cord torsion leading to fetal death in three subsequent pregnancies. *Archives of Pathology and Laboratory Medicine* 2000. 124;9:1352-1355.
3. A. Itakura, O. Kurauchi, S. Mizutani, Y. Tomoda. Intrauterine growth retardation and fetal distress associated with the excessively long (160 cm) umbilical cord. *Archives of Gynecology and Obstetrics* 1994;255(2).
4. Baergen RN, Malicki D, Behling C, Benirschke K. Morbidity, mortality and placental pathology in excessively long umbilical cords: retrospective study. *Pediatr Dev Pathol* 2001;4(2):144-53.
5. Hershkovitz R, Silberstien T, Sheiner E, Shoham-Vardi I, Holcberg G, Katz M, Mazor M. Risk factors associated with true knots of the umbilical cord. *Eur J Obstet Gynecol Reprod Biol* 2001;98(1):36-9.
6. Sornes T. Umbilical cord knots. *Acta Obstet gynecol Scand* 2000;79(3):157-9.

7. Jason H. Collins, Charles L. Collins, Candace C. Collins. <http://www.preginst.com/silentrisk.pdf>. Accessed 15/05/07.
Silent risk: Issues about the human umbilical cord.

Author Information

H. Muppala, MBBS, DGO

Women's Health Directorate, Royal Blackburn Hospital

A. Bedoya-Ronga, LMS, DFFP

Women's Health Directorate, Royal Blackburn Hospital

E. Martindale, FRCOG

Women's Health Directorate, Royal Blackburn Hospital