Antenatal Diagnosis of Type-3 Vasa Previa

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ABSTRACT

Regarding type-3 vasa previa, some branches exit the placental surface and subsequently re-enter at the placental cotyledons. We present a case of type-3 vasa previa diagnosed at 32 weeks of gestation. A 38-year-old pregnant Japanese woman was re-examined using transvaginal color Doppler due to suspected vasa previa on previous routine obstetric examination. Color Doppler clearly showed a small velamentous artery near the internal cervical os. At 37 weeks and 6 days of gestation, a planned cesarean section was performed, resulting in a viable, single female newborn weighing 2,726 g. Placental examination showed peripheral insertion of the umbilical cord with one aberrant vessel.

Keywords: Antenatal diagnosis, Color Doppler, Placenta previa, Transvaginal sonography, Type-3 vasa previa.

Donald School Journal of Ultrasound in Obstetrics and Gynecology (2021): 10.5005/jp-journals-10009-1689

INTRODUCTION

Type-3 vasa previa is a new and rare phenotype of vasa previa. Some branches of the fetal vessel go out of the placental surface and subsequently come back to the placental cotyledons. In this report, we present a case of type-3 vasa previa diagnosed at 32 weeks of gestation.

CASE DESCRIPTION

A 38-year-old pregnant Japanese woman, G (4), P (2), was re-examined using transvaginal two-dimensional (2D) sonography and color Doppler at 32 weeks of gestation due to suspected vasa previa based on a previous routine obstetric examination at 31 weeks and 4 days of gestation using color Doppler. In this case, partial placenta previa was suspected at 18 weeks of gestation. Transvaginal 2D sonography clearly showed one small tubular structure near the internal cervical os (Fig. 1). Color Doppler revealed that this structure was a small velamentous blood vessel near the internal cervical os (Fig. 2). Pulsed Doppler ultrasound revealed that this vessel was an artery with arterial blood flow consistent with the fetal heart rate (Fig. 3).

At 37 weeks and 6 days of gestation, a scheduled cesarean section was performed, resulting in a viable, single female newborn weighing 2,726 g, with a height of 49 cm. The Apgar scores were 9 (1 minute) and 9 (5 minutes), and the umbilical artery blood pH was 7.34. Placental examination showed peripheral insertion of the umbilical cord with one aberrant small vessel.
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(Fig. 4). The mother and neonate followed a favorable course after delivery.

DISCUSSION

Catanzarite et al.\(^2\) classified vasa previa into two types: type I, a single placental lobe with a velamentous cord insertion, and type II, the vessels over the cervix between lobes of a multilobed placenta. Suekane et al.\(^1\) reported a third phenotype of vasa previa, namely type-III vasa previa. In this type, some branches go out of the placental surface and subsequently come back to the placental cotyledons. In our case, peripheral insertion of the umbilical cord with one aberrant vessel was clearly identified using transvaginal 2D sonography and color Doppler. Macroscopic examination showed peripheral insertion of the umbilical cord with one small aberrant vessel. Therefore, cross-examination using transvaginal 2D sonography and color Doppler around the internal cervical os should be mandatory for the accurate prenatal diagnosis of vasa previa to prevent the perinatal fetal loss, especially in cases with placenta previa and low-implanted placenta at around 20 weeks of gestation.\(^2\)

Figs 2A and B: One small blood vessel (arrows) near the internal cervical os at 32 weeks of gestation using color Doppler: (A) Sagittal view; (B) transverse view. IO, internal cervical os; P, placenta

Figs 3A and B: One small aberrant blood vessel (arrow) at 32 weeks of gestation using color Doppler (A) and pulsed Doppler ultrasound (B). Arterial blood flow consistent with the fetal heart rate is evident. P, placenta

Figs 4A and B: Gross examination of the placenta after delivery. Peripheral insertion of the umbilical cord (large arrow) and aberrant vessel (small arrows) are noted: (A) Fetal surface; (B) Maternal surface
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References