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Vasa Previa: A Rare Case Report and Review of the Literature

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ABSTRACT

Vasa previa is a rare complication during pregnancy, involving fetal prognosis by massive fetal hemorrhage. We report a case of Benckiser's hemorrhage that occurred after spontaneous rupture of the membranes. In the light of this work, we will discuss the clinical diagnosis, the possibilities of ultrasound screening and the management modalities.

Keywords

Benckiser's hemorrhage, Vasa Previa, Third trimester metrorrhagia.

Introduction

Vasa Previa is a rare and serious obstetrical complication, causing fetal hemorrhage related to a rupture of an umbilical vessel, located in the area of presentation, thus putting at risk the fetal prognosis. Its clinical sign associates an isolated hemorrhage following the rupture of the membranes, complicated by fetal suffering and even fetal death in 75 to 100%. The maternal prognosis is not compromised since it is a purely fetal hemorrhage. Unfortunately, to date there is no documented protocol for the management of ruptured vasa Previa.

Clinical Case

This is a 36 year old female patient, fourth gestational age, with no notable pathological history. The pregnancy was poorly followed. The patient presented to our training after a pregnancy of 38 weeks of amenorrhea and 3 days after a spontaneous rupture of the membranes. The suprapubic obstetrical ultrasound showed a bipartite placenta (Figure 1), with the presence of Previa vessels opposite the internal orifice of the cervix on transvaginal ultrasound (Figure 2), with good fetal vitality. The patient presented immediately with heavy metrorrhagia. Fetal heart activity was recorded at 110 beats per minute. A code red cesarean section was indicated by the obstetric team, resulting in a male neonate with an APGAR score of 10/10 and a birth weight of 3100g. The newborn had no signs of clinical anemia. His hemoglobin was 17g/Dl. There was no maternal anemia. Placental examination confirmed placenta bipartita, as well as ruptured vessels Previa with velamentous cord insertion (Figures 3 and 4).

Discussion

Vasa previa is a rare complication. Its incidence is estimated at 1/2467. [1] Clinically, it presents as a painless and massive third trimester hemorrhage, generally following rupture of the membranes, with fetal bradycardia due to exsanguination, requiring immediate fetal extraction. The maternal condition remains otherwise preserved. Exceptionally, it can be diagnosed clinically by palpation of a vascular cord during vaginal touching, or during amnioscopy with intact membranes allowing direct vision of prævia vessels. Metrorrhagia in the second and third trimester should prompt the obstetrician to perform ultrasound exploration with color and/or pulsed Doppler. Abdominal and transvaginal ultrasound remains the reference examination for the diagnosis of vasa previa with a positive predictive value estimated at 92%. It

Figure 1: Placenta bipartita (⟶) and cord procubitus (⇨).

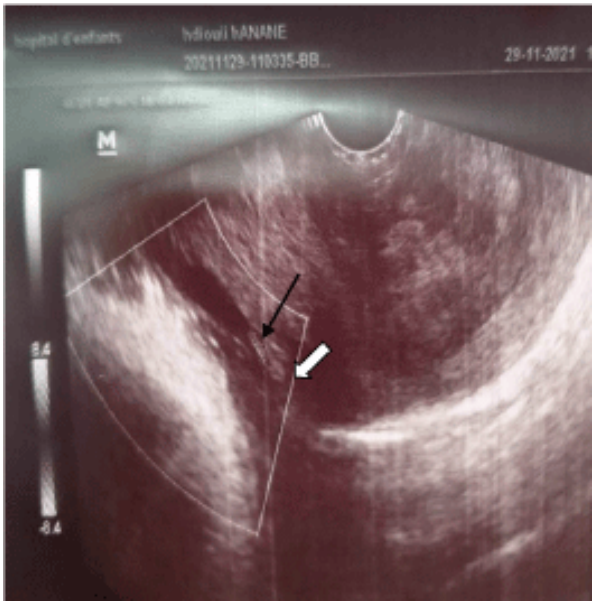

Figure 2: Presence of a praevia vessel lighting up (⟶) on the color Doppler opposite the internal orifice of the cervix (⇙).

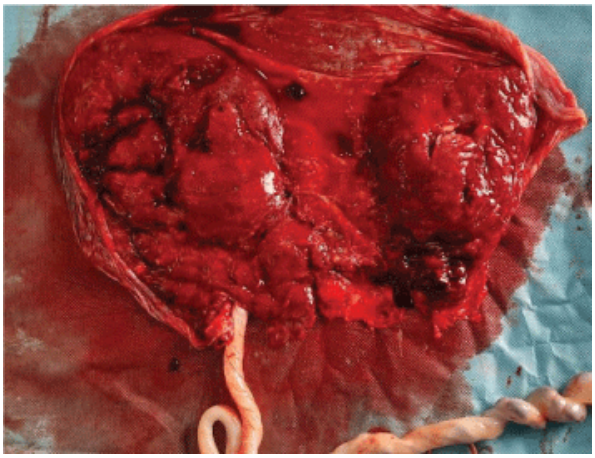

Figure 3: Placenta bipartite.

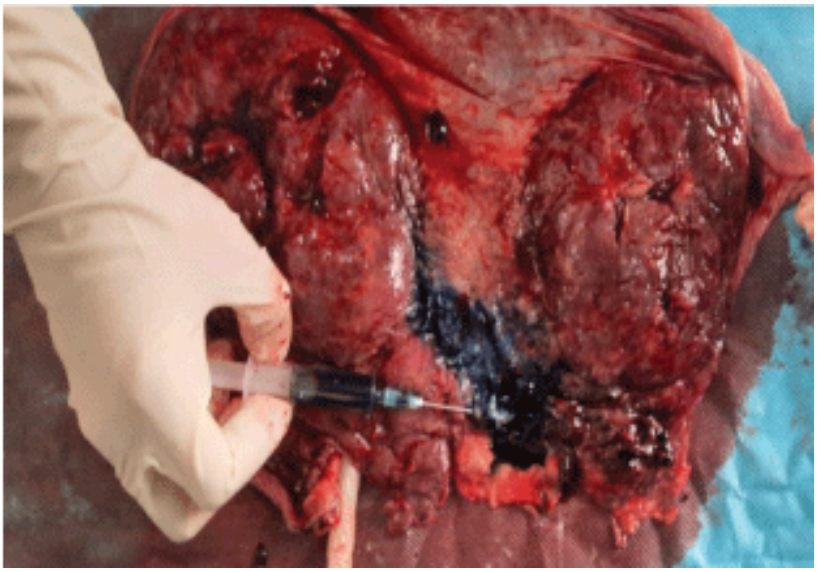

Figure 4: Rupture of a praevian vessel highlighted by methylene blue.

allows the differential diagnosis with a procubitus of the cord [1]. The vasa previa is described as an anechoic zone, linear opposite the internal os of the cervix in the absence of Wharton's jelly. The color Doppler mode confirms the vascular character of the image.

The first ultrasound diagnosis was reported by Gianipoulos in 1987 who demonstrated a tubular structure interposed between the internal cervical os and the presentation, confirmed by pulsed Doppler [2]. In some cases, the diagnosis can be made by 3D ultrasound but its contribution remains to be evaluated [3]. As for MRI, it is a precise examination, which allows a prenatal diagnosis and mapping. However, due to its high cost and unavailability, MRI is not recommended for the diagnosis of vasa previa [4,5].

The risk factors found in the literature that justify the search for vasa previa are placental anomalies, including placenta previa, bipartita, or the presence of aberrant cotyledons; velamentous cord insertion; in vitro fertilization; or multiple pregnancies [4,6-8].

The Society of Obstetricians and Gynecologists of Canada (SOGC) recommends investigation of cord insertion in cases of low inserted first trimester placenta. If it is low inserted or velamentous, or if the placenta is bipartita or with aberrant cotyledon or in case of metrorrhagia, the SGOC recommends screening for vasa previa on second trimester ultrasound with color Doppler [4]. It should be noted that 15% of vasa previa disappear during pregnancy. An ultrasound check between 28 and 30 days' gestation would therefore be recommended [9].

Antenatal diagnosis of vasa previa has improved the fetal prognosis. Ideally, the attitude is to perform a prophylactic cesarean section before labor with ultrasound monitoring near term [4,10-13]. The American learned societies recommend hospitalization to ensure close clinical and ultrasound monitoring, regular evaluation of the fetal heart rate by cardiotocograph, and rapid intervention in case of complications. For SGOC, prenatal corticosteroid therapy between 28 and 32 weeks of age, and hospitalization of parturient between 30 and 32 weeks of age at a level 3 maternity hospital are recommended. However, there is no consensus on the term of extraction, which is still debated. Some authors recommend a scheduled caesarean section between 36 and 38 days' gestation, to avoid any risk of premature rupture of the membranes and re-entry into labour, while avoiding the risk of extreme prematurity [14].

On the other hand, in case of heavy metrorrhagia, an emergency caesarean section should be performed, whatever the term of the pregnancy. However, the surgeon must be aware of the position of the placenta and the vessels in order not to cause laceration of the vessels during the operation [4,7,12,15]. In our case, the rapid diagnosis and the urgent intervention of the obstetrical team allowed the extraction of a newborn with an Apgar score of 10.

Conclusion

Benckiser's hemorrhage is a serious obstetrical event, secondary to a rupture of a previa vessel generally following a rupture of the membranes. There is no documented protocol for the management of vasa Previa.

Preventive measures have been established by various obstetrical teams to avoid fetal morbidity and mortality.

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