

# Vasa previa

- case report -

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## Abstract

*Vasa previa represents a rare, but very dangerous condition, whose major complication is fetal exsanguination and death in utero. The diagnostic must be set antenatally by ultrasound using transvaginal probe and color Doppler. Most authors recommend the extraction of the fetus by cesarean section at 35 weeks of gestation. It is presented a case of vasa previa diagnosed at 22 weeks, where the extraction of the baby was delayed after 35 weeks of gestation. The mother was under constant surveillance, remained in the hospital after 36 weeks, the membranes was broken spontaneously at 37 weeks and an emergency cesarean section was performed.*

**Keywords:** vasa previa, exsanguinations

## Introduction

Vasa previa is a condition in which the umbilical vessels, unsupported by either the umbilical cord or placental tissue, traverse the fetal membranes of the lower segment above the cervix<sup>(1)</sup>. The reported incidence varies from 1 in 1275 to 1 in 5000. Also, in the presence of a velamentous insertion of the cord with the placenta in the lower uterine segment, the incidence of vasa previa has been reported to be 1 in 50<sup>(2)</sup>.

## Risk factors

The incidence of vasa previa has been reported as high as 1 in 202 following in vitro fertilization (IVF) compared with 1 in 2200 in non-IVF pregnancies<sup>(1,3)</sup>. Other significant risk factors for vasa previa include second trimester placenta previa, and bilobed and succenturiate-lobed placentas<sup>(1)</sup>, multiple pregnancy, previous dilatation and curettage.

Vasa previa can be detected antenatal by vaginal ultrasound and color Doppler before fetal bleeding occurs. Unfortunately, the most frequent presentation is still vaginal bleeding occurring at the time the membranes rupture, the bleeding being most often attributed to a placenta previa or placental abruption. Bleeding of even 100 mL is sufficient to cause fetal shock and death<sup>(4)</sup>. Prolonged cord compression secondary to velamentous insertion can lead to hypoxia and fetal death. Vasa previa usually occurs in association with velamentous insertion of the umbilical cord, bipartite placenta, or succenturiate lobe. In the presence of these findings, the presence of vasa previa must be investigated and excluded.

Management of vasa previa includes: dexamethasone at 28-32 weeks, hospitalization at 32 weeks, and cesarean section at 35 weeks.

## Case report

It is presented the case of a 32 years old primipara, single pregnancy, no IVF, dilatation and curettage 5 years before (8 weeks pregnancy). It was her first visit to the obstetrician at 6 weeks, and her first trimester

screening at 13 weeks of gestation with normal findings.

An ultrasound exam was performed at 22 weeks, the assessment of the placenta was realized and a bilobate placenta was observed: one lobe situated on the anterior uterine wall, and the other lobe on the posterior uterine wall. An insertion of the umbilical cord near the margin of the anterior placenta lobe was observed (Figure 1).

Blood vessels connecting the 2 placenta lobes and stretching in the proximity of the internal cervical os were described. A Doppler assessment of those vessels was performed and an umbilical trace was recorded (Figure 2). A transvaginal ultrasonography was performed aiming the evaluation of the distance between the placenta lobes and the internal cervical os: the distance between the anterior lobe and cervix was found to be 2.5 cm, and the distance between the posterior lobe and cervix 4.3 cm. The position of the vessels connecting the two lobes was observed near the uterine isthmus and internal cervical os, and those vessels were regarded as vasa previa (Figure 3). Their position remained in the same area at the next ultrasound examinations, so the confusion with a loop of the umbilical cord was excluded.

Further ultrasound exams were performed monthly, and the patient was told to report urgently to the hospital in case of vaginal bleeding or uterine contractions. The fetal growth and the length of the cervix were evaluated each time and found it within normal values.

Dexamethasone was administered at 30 weeks of gestation for lung maturation. At 31 weeks of gestation another transvaginal ultrasonography was performed, vasa previa and the posterior lobe were founded to be displaced a little bit laterally than previously, but the position of the anterior lobe and insertion of the umbilical cord were unchanged.

The patient was advised to stay in the hospital between 32 and 35 weeks for better surveillance, and the extraction of the fetus at 35 weeks was proposed.



Figure 1. The insertion of the umbilical cord near the margin of the anterior placenta lobe

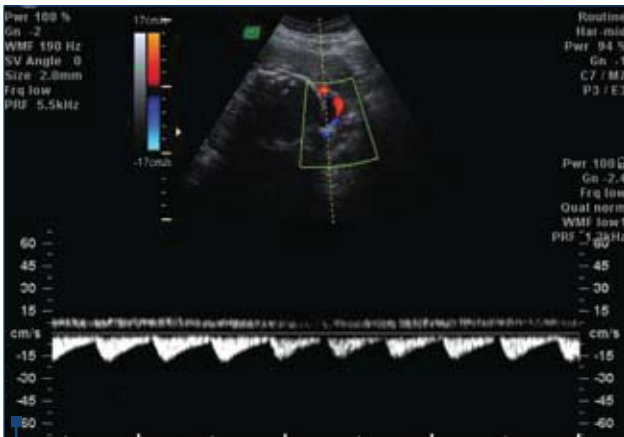


Figure 2. The Doppler assessment of previa vessels



Figure 3. Vessels connecting the two lobes near the uterine isthmus and internal cervical os



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### Hidratează mucoasa vaginală

- ★ Reface nivelul fiziologic de hidratare al mucoasei vaginale
- ★ Natural, fără hormoni
- ★ Siguranță totală în administrare
- ★ Favorizează vindecarea rănilor



Figure 4. Postoperative placenta inspection

The patient chose to stay at home. In this situation each 2 weeks a fetal fibronectin test (actim partus) was performed to exclude the premature labor onset. Also the length of cervix was assessed every 2 weeks and it was found to be  $>3.2$  cm each time. The patient was informed that the test for fetal fibronectin does not exclude the possibility of premature rupture of membranes, situation when severe fetal bleeding can occur.

The patient returned to hospital at 36 weeks of gestation for close surveillance. At admission neither vaginal bleeding, nor uterine contractions were described, and the cervical length was measured (3.2 cm).

The membranes were ruptured spontaneously at 37 weeks. An emergency cesarean section was performed and a healthy baby was extracted. Neither vaginal bleeding, nor uterine contractions were described from the moment of the membranes rupture since the cesarean section was performed.

The placenta was inspected after extraction: a bilobed placenta, cord insertion at the margin of one lobe and a major blood vessel origin from the cord connected to the other lobe were found (Figures 4 and 5).

## Discussions

Vasa previa is a rare finding and the management of this condition might not be very familiar to all practitioners.

The main complication is fetal death in utero by exsanguination, this being the reason why most authors recommend cesarean section at 35 weeks of gestation. The surveillance of the patient in a tertiary unit that permits the emergency cesarean section in case of vaginal bleeding, might allow the delay of the extraction of the baby. The benefit is represented by the avoiding of prematurity.

In case of vaginal bleeding, the source must be immediately established: maternal bleeding from placenta previa permits further delay, but fetal bleeding from vasa previa requires immediately the extraction of the baby. Screening for fetal hemoglobin is the best way to differentiate between fetal and maternal bleeding.

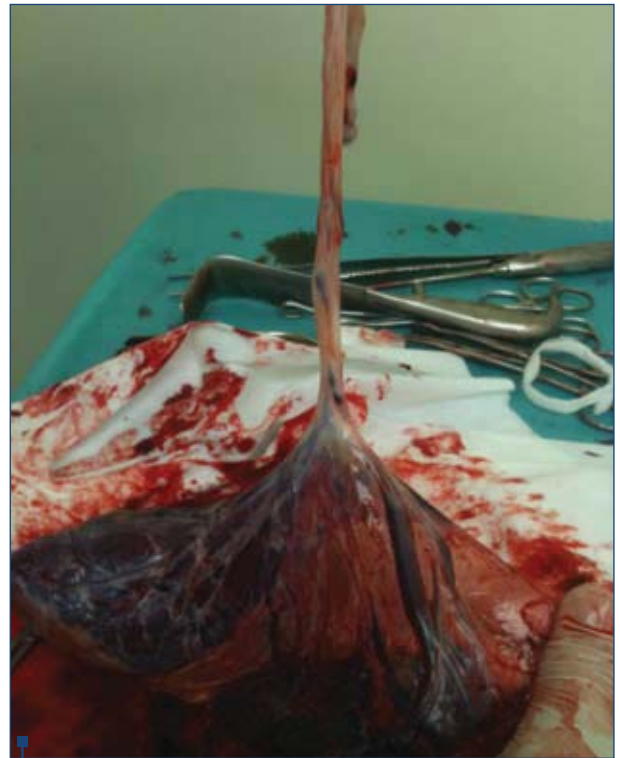


Figure 5. Postoperative umbilical cord inspection

Testing for fetal fibronectin in cervical secretion is useful for detecting premature labour onset, but does not exclude premature rupture of membranes, a possible scenario that cannot be ignored.

In hospital surveillance even in absence of uterine contraction is useful, because it offers the proximity of the theatre in case of premature rupture of membranes or vaginal bleeding. All medical staff must be informed about the presence of a patient with vasa previa, and instructed to react quickly if necessary.

IVF patients are at higher risk for this pathology, and since their number is increasing year by year, we could face vasa previa more often in the future.

## Conclusions

The assessment of the umbilical insertion is mandatory. In case of velamentous insertion of the umbilical cord, or bilobed placenta, vasa previa must be excluded.

For a patient under surveillance in a tertiary unit, the extraction of the baby can be delayed after 35 weeks of gestation. ■

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