Vasa Previa- An Avoidable Or An Unavoidable Obstetric Tragedy? - A Case Report

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Abstract

Vasa previa, a rare pathology seen in obstetrics may endanger the fetus's life because of its high likelihood of bleeding. Although the appearance of cord blood vessels is a very uncommon clinical condition, it is dangerous for the fetus or the infant since it is linked to a higher risk of perinatal death. To enhance the perinatal outcome, focused screening with ultrasound for vasa previa should be performed in women with high-risk factors. Ultrasound is the choice of investigation for the detection of vasa previa. We report a case of bleeding vasa previa at 37 weeks of gestation in a 29-year-old woman. This article aims to improve perinatal outcomes in these situations and to have a high index of suspicion for the diagnosis of vasa previa when presented with antepartum hemorrhage with a history of a low-lying placenta.

Keywords- Antepartum hemorrhage, Vasa previa, Ultrasound

INTRODUCTION

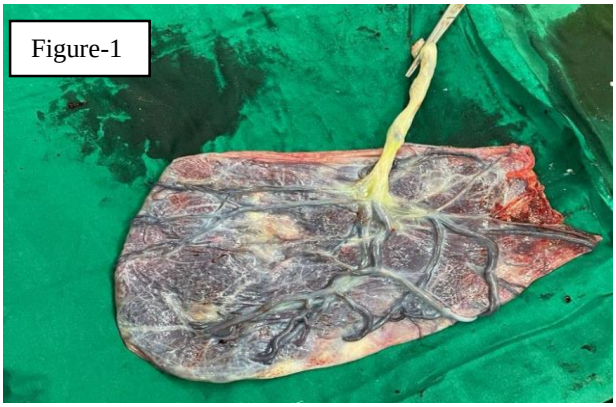
Vasa previa is a condition when the umbilical vessels pass through the lowest portion of the fetal membranes above the cervix without the support of the placental tissue or the umbilical cord. (1) Vasa previa is a rather uncommon condition, with a reported incidence of 0.6 per 1000 deliveries. (2)

Vasa previa can be detected in utero via ultrasound, MRI, amnioscopy, digital vaginal examination, palpation of the vessels, and intrapartum identification of fetal blood in vaginal blood. Additionally, the identification of placental type, placental location, and cord insertion is only possible when transabdominal and transvaginal ultrasonography are used in tandem. Only by employing the combination technique, it is possible to detect the presence of an amniotic layer harboring fetal vessels. (3)

CASE

A 29 years old Gravida 3 Para 1 Live 1 Abortion 1 presented with complaints of painless vaginal bleeding for 1 hour. At the time, of admission, her gestation age was 37 weeks.

On examination, vitals were within normal limits. The cardiorespiratory system was normal. Per abdominal examination uterus full term, cephalic, FHR 144beatsperminute, regular. Per speculum examination showed fresh bleeding. Per vaginal examination was avoided. Urgent ultrasound examination was done which revealed a single live intrauterine gestation of 37weeks, cephalic presentation, amniotic fluid index of 12cm, estimated fetal weight of 3kg, with a posterior low-lying placenta, bilobed suggestive of vasa previa with normal Doppler parameters. The decision to emergency lower segment cesarean section was made. Intraoperative findings show vasa previa and bilobed placenta with membranous cord anchorage (Figures 1 and 2). A healthy male baby was delivered with an Apgar score of 7/10 at one minute and 8/10 at 5 minutes. The Post-operative was uneventful.



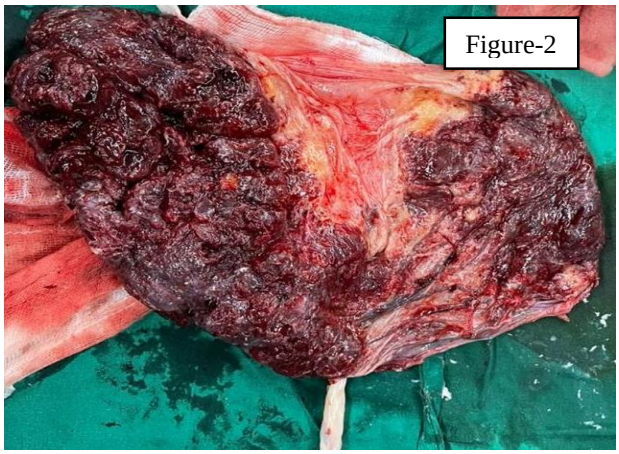


Figure 2: Specimen showing multi-segmented placenta (Bilobed Placenta) with membranous cord anchorage

DISCUSSION-

In 1801, Lobstein reported the first incidence of vasa previa rupture. Diagnosis of vasa previa was frequently diagnosed (too late) based on the triad of ruptured membranes, painless vaginal bleeding (fetal bleeding: Benckiser's hemorrhage), and fetal distress or demise until ultrasonography became widely used. Vasa previa was initially described by ultrasonography in 1987. [4,5]

Triad for diagnosis of vasa previa

i. Ruptured membranes
ii. Painless vaginal bleeding
iii. Fetal distress or demise

Similarly, even our patient presented to the emergency with painless vaginal bleeding which could have led to fetal distress or demise. But due to the timely identification of the condition and its management, it was possible to deliver a healthy baby, thus preventing the risk of perinatal morbidity and mortality.

The phrase "vasa previa" comes from the Latin words which mean “vessels in the way- before the baby.” The condition is characterized by the fetal membrane blood vessels being loose and unprotected by placental tissues or Wharton's jelly. [6]

Vasa previa has primarily 2 causes: velamentous insertions (when the cord inserts straight into the membranes, leaving unprotected vessels going to the placenta) (25–62%), and vessels crossing between placenta lobes, such as in succenturiate or bilobate placentas (33–75%). [6,7]. Similar to this, the placenta in our case was bilobed, which raised the risk of vasa previa.

The two types of vasa previa described in the literature are the first, in which the membrane-like blood vessels that emerge from the placenta as the umbilical cord vessels eventually develop into an umbilical cord, and the second, in which the membrane-like blood vessels that emerge from the main placenta travel to one or more additional segments of the placenta. Blood vessels surround the cervix in both instances or extend as far as the internal opening, which is 2 cm away. Because of the leading part of the fetus's ability to press against the fetal blood arteries and cause thrombosis during contractions, this condition puts the fetus in danger of developing a pathology like fetal hypoxia that could be fatal. [8]

Multiple risk factors have been identified for vasa previa (Table 1)

Table 1 Risk factors for vasa previa [8]

- Additional segments of the placenta (two or more)
- Membranous umbilical cord anchorage
- A low-lying placenta or placenta previa
- Multifetal pregnancy
- Assisted reproduction procedures

An ultrasonographic examination for placental cord insertion in every pregnancy is crucial. The possibility of a vasa previa is minimal when the cord insertion is central and there is no succenturiate lobe. Mainly the low-lying placenta cases should undergo a more thorough examination. The gold standard for diagnosing vasa previa is ultrasound examination. It is crucial to use ultrasonography to pinpoint the exact cord attachment placed in all pregnant women during the second trimester (18–20 weeks). In the event of vasa praevia, blood vessels will be visible above the internal cervical opening. When an abdominal ultrasound scan fails to reveal a cord attachment point, a transvaginal echoscope with color doplerometry 2D and 3D should be used. [9]

When vasa praevia is discovered prenatally, the pregnancy must be ended by a scheduled Caesarean operation in a tertiary hospital that offers the opportunity to do a fetal blood transfusion. If there are any clinical signs of antepartum hemorrhage including vasa previa, a pregnant woman shall be admitted immediately to the hospital. The fetal status must be monitored by a continuous fetal cardio-monitor. [8]
In absence of clinical signs, the patient must be advised for bed rest with intermittent fetal monitoring including nonstress test and fetal ultrasonography. [10]
When vasa previa was identified during pregnancy, the neonatal survival rate in the research group varied from 97 to 100%. [8]
The indications for terminating the pregnancy via the emergency Caesarean section are: preterm leakage of amniotic fluid, labor activity, unstable fetal condition – variable recurring decelerations recorded by a nonstress test, bleeding from the uterus, fetal tachycardia, sinusoidal type of fetal heart rate, fetal anemia confirmed by middle cerebral artery doppler. [10]

CONCLUSION

The prenatal ultrasound scan is the gold standard for diagnosing vasa previa. For these women, a prompt diagnosis is crucial. Early diagnosis, with serial targeted ultrasonography, and appropriate and timely management will improve perinatal outcomes.

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