Jurnal Kesehatan Reproduksi
Vol 8 No 3 – Desember 2021
ISSN 2302-836X (print), ISSN 2621-461X (online)
Tersedia online di https://jurnal.ugm.ac.id/jkr
DOI: 10.22146/jkr.65005

CASE REPORT

Early Findings of Vasa Previa: A Case Report

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Submisi: 29 Maret 2021; Revisi: 24 Maret 2022; Penerimaan: 24 Maret 2022

ABSTRAK

Vasa previa adalah keadaan keluarnya pembuluh darah janin yang tidak dilindungi oleh plasenta atau tali pusat, berada dalam selaput terletak di atas serviks dan di bawah bagian presentasi janin. Karena kondisi tersebut, risiko terkompresi atau pecahnya pembuluh darah dapat menyebabkan kematian janin. Etiologi pastinya masih belum diketahui, tetapi beberapa faktor risiko yang diketahui adalah plasenta letak rendah, plasenta previa, kehamilan ganda, plasenta multilobus maupun penyisipan tali pusat ke dalam plasenta (velamentous cord insertion), dan kehamilan buatan seperti fertilisasi invitro.

Saat ini kami melaporkan kasus seorang wanita 40 tahun, G3P1A1 dengan usia kehamilan 35 minggu dan riwayat operasi caesar karena preeklamsia dan presentasi bokong, riwayat kuretase karena blighted ovum. Diagnosis prenatal dini dengan pemeriksaan ultrasonografi dapat meningkatkan angka kelangsungan hidup janin jika diikuti dengan tindakan yang memadai setelah terdiagnosis. Kelahiran sesar adalah cara persalinan yang paling aman bahkan sebelum adanya tanda-tanda persalinan.

ABSTRACT

Vasa previa is referred to the condition of running of fetal vessels that are unprotected by placenta or umbilical cord, within the membranes over the cervix and under the presenting part of the fetus. Due to its membranous vessels, risk of being compressed or ruptures could lead to fetal demise, exsanguination or even death. Its exact etiology is still unknown but multiple risk factors are known, such as low-lying placenta, placenta previa, multiple pregnancies, multilobed placenta and velamentous umbilical cord anchorage, and assisted pregnancy like invitro fertilization.

In this report we report a case of 40 years old woman, G3P1A1 at 35 weeks of gestation and history of C-section due to preeclampsia and breech presentation and curettage due to blighted ovum. Early prenatal diagnosis using ultrasonography examination could increase the survival rate of the fetus if followed by sufficient measure after diagnosed. Cesarean birth is the safest mode of delivery even before the clinical signs or onset of labor occurred.

Keyword: vasa previa, pregnancy, antenatal bleeding, newborn outcomes

CASE REPORT

A 40-year-old woman, G3P1A1 at 35 weeks of gestation came to the Emergency Unit of Dr. Sardjito Hospital due to profuse spontaneous vaginal bleeding and irregular uterine contraction. No complaint nor sign of premature amniotic fluid leakage. She was admitted twice into different hospitals due to the same complaint at 32 and 34 weeks of gestation and received one set of dexamethasone injection. Ultrasonography examination was done at 34 weeks of gestation reported normal fetal anatomy with placental insertion at uterine corpus partly spread to inferior covered internal orifice of the uterus, blood vessels seemed on amniotic membrane. She was then referred to our outpatient clinic and originally planned for elective cesarean section at 36 weeks of gestation.

She had cesarean section on her first pregnancy due to preeclampsia and breech presentation. But she never showed sign of high blood pressure in her other pregnancies while routinely consumed acetylsalicylic acid. She used intrauterine device as her birth control after her first C-section for 2 years. She had a history of blighted ovum on her second pregnancy and had to receive curettage.

On admission, general examination showed sufficient general condition with no pallor and stable vitals sign. Blood pressure was 113/79 mmHg, pulse rate was 83 bpm and fetal heart rate was 138 bpm, regular. From Leopold maneuvers, we got singleton baby with cephalic presentation, fetal back on the left side, no palpable uterine contraction and fundal height was 26 cm. A nonstress fetal test was reactive. Digital vaginal examination was not done. Sonography examination with color doppler revealed confirmation of marginal placenta previa and blood vessel inserted into the lower margin of placenta suggestive of vasa previa.

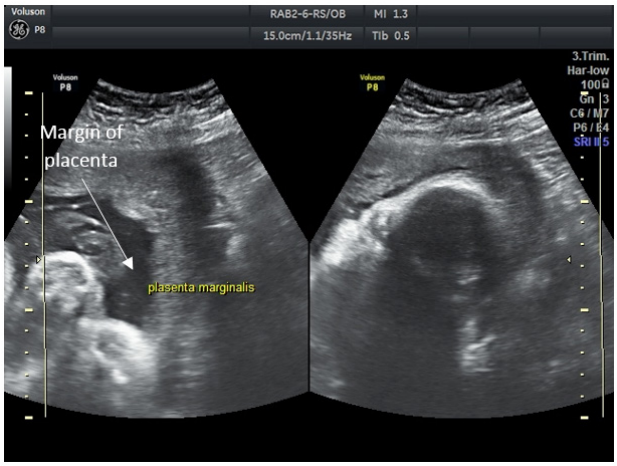

Figure 1. Marginal Placenta Previa on Ultrasonography Examination

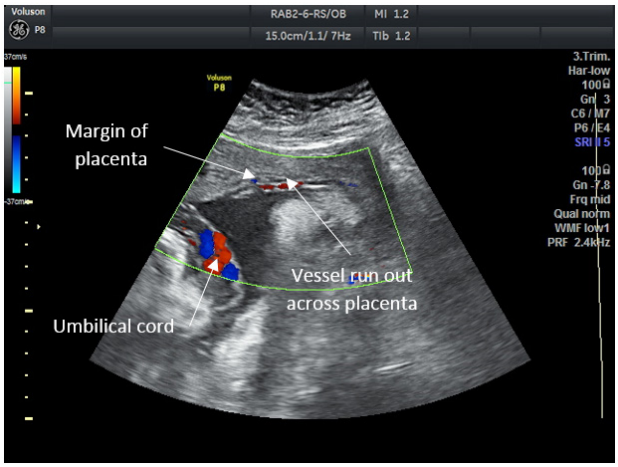

Figure 2. Color Doppler Confirmation of The Blood Vessel Inserted into The Lower Margin of Placenta

The following laboratory investigations were performed and showed tolerable results: routine blood test, ABO blood grouping, Rhesus blood grouping, blood chemistry, hemostasis, urinalysis, routine infection examination, and. Due to corona virus pandemic situation and stable fetal and mother condition, C-section was planned to be held after SARS-CoV-2 Qualitative PCR result came out negative.

Diagnosed with severe antepartum hemorrhage resulting from marginal placenta previa with vasa previa on premature pregnancy and mild anemia, the pregnant woman was admitted to Maternal IMP Unit of our hospital. The subject was administered bed rest and observed for the development of spontaneous labor activity, the fetal status was assessed by routine nonstress fetal test. Pregnancy care, investigation and treatment was designed. She received 1 oral tablet of 200 mgs ferrous sulfate every 24 hours, 1 oral tablet of 500 mgs calcium lactate every 24 hours, and intravenous injection of 500 mgs tranexamic acid every 8 hours until the day C-section was held. No further sign of labor activity nor vaginal bleeding were found during 2 days of inpatient care before C-section.

Intra operatively, no significant condition needed to be concerned. A single live male baby of weight 2100 grams and 49 cm tall was delivered, assessed with Apgar score 1 minute after birth 8 and 5 minutes after birth 9. The placenta was examined. It was 450 grams, removed manually. Central cord anchorage with blood vessels on the lower margin was observed.

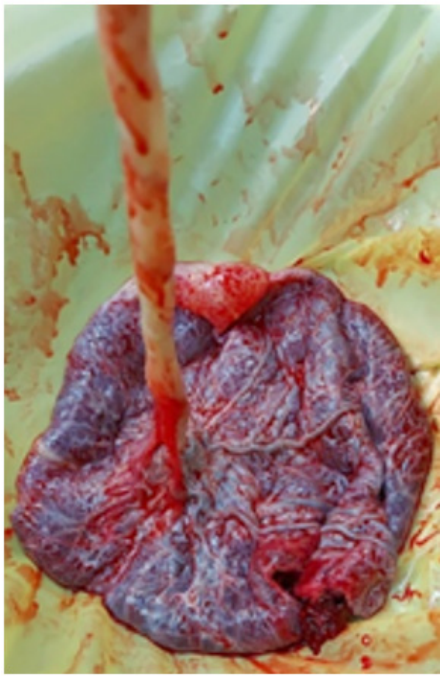

Figure 3. Gross Appearance of Placenta

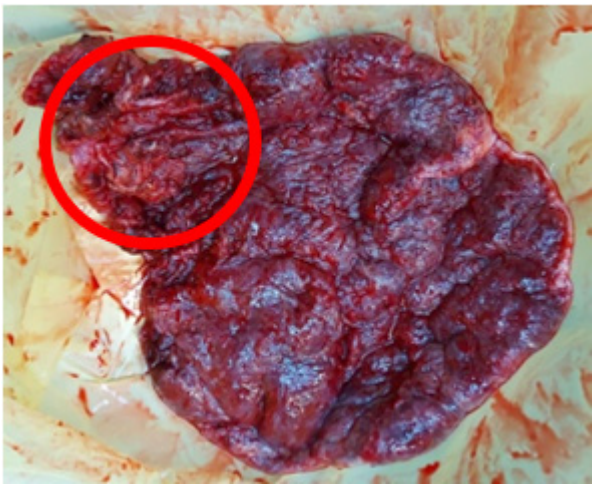

Figure 4. Gross Appearance of Placenta with Blood Vessels on The Lower Margin

Post operatively, her vitals were stable. BP was 119/72 mmHg, pulse rate 82 bpm, normal temperature. Hemoglobin level was down to 9.5 g/dL and she received the same drugs regime with before the C-section performed. She was discharged in a stable condition and with a healthy baby.

DISCUSSION

Vasa previa is one of a few important causes of bleeding in the second half of pregnancy and during labor. It is considered a rare case since it affects 0.46 cases every 1000 deliveries.1 This condition refers to running of fetal vessels that are unprotected by placenta or umbilical cord, within the membranes over the cervix and under the presenting part of the fetus.2,3 Due to its membranous vessels, the risk for being compressed are high, leading to fetal anoxia. Likewise, if membranes rupture, these vessels may rapture and causing fetal exsanguination or even death.4,5 Therefore, undiagnosed vasa previa could lead to fetal mortality rate of at least 60%, despite urgent C-section.6,7

Vasa previa was classified into two types. 25-62% vasa previa cases classified as type I which occurs when the vessel is connected to a velamentous umbilical cord insertion. The fetal vessels pass freely within the amniotic membranes over are near the cervix. Type I vasa previa are associated

with pregnancies with resolved placenta previa or low-lying placenta.[5,8] In vitro fertilization has been identified increase the risk of type I vasa previa to approximately 1 every 250 deliveries.[8] Type II occurs 33-76% of cases when it connects the placenta with a succenturiate lobe or bilobed placenta and it course over or near the cervix.[5,8]

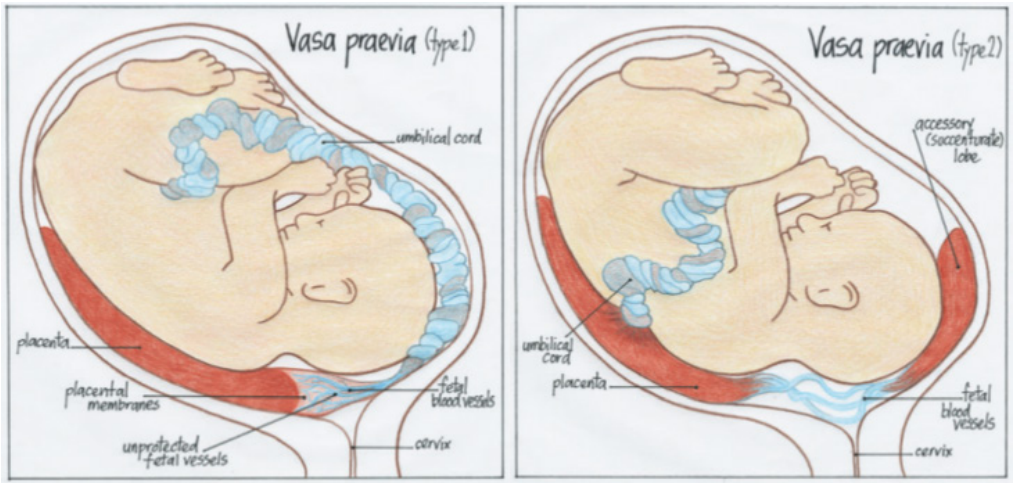

Figure 5. Illustration of Vasa Praevia Type 1 and Type 2 (9)

Its exact etiology is still unknown, but risk factors have been reported as conditions associated with vessels that pass through near the cervix such as low-lying placenta, placenta previa, multiple pregnancies, multilobed placenta and velamentous umbilical cord anchorage.[1,3,5,8] Other than that, placenta membranacea and although not yet understood, invitro fertilization, are also known as risk factors.[1,3,5,8] Prior C-section and curettage might take part in indirect occurrence of vasa previa as risk factor for placenta previa.[10]

The classic clinical symptoms are triad of ruptured membranes, painless vaginal bleeding which occurs from fetal bleeding, and fetal distress or demise.[5] Before the use of routine sonography examination, diagnosis was conducted by the clinical symptoms or digital vaginal examination where examiner palpate the pulsating fetal vessel. The Apt test or Kleihauer-Bettke test may assist in the diagnosis of vasa previa, although not in situation where acute profuse bleeding occurs with fetal distress in need of emergency delivery. The diagnosis is then confirmed on placenta inspection after delivery.[2,3] Thus, the outcome was mostly high in mortality of the fetus.[2,6]

At precent days, it has been known that early prenatal diagnosis could improve the survival rates by over 95%.[2,7] Since low maternal education level is still the main problem in under-developed and developing country, education to raise awareness of routine antenatal care is the first step to early detection.[11] Prenatal ultrasound scanning usually conducted at 18-28 weeks of gestation and 20% cases of placenta previa or low-lying placenta were often resolved but still associated with vasa previa.[5,12] During ultrasound on mid-trimester, the placental implantation and relationship between placenta and internal cervical orifice should be evaluated. For asymptomatic women who were diagnosed with placenta previa or low-lying placenta during that ultrasound scanning should get a follow up transvaginal ultrasonography with color and pulsed Doppler examination at 32 weeks of gestation. For bleeding women, transabdominal examination should precede to confirm suspicion of vasa previa and proceed to transvaginal ultrasonography if suspected so.[5] The diagnosis of vasa previa is confirmed if an arterial vessel with consistent rate of fetal heart rate is visualized over the cervix, either directly overlying the internal orifice or near it. It also should be noted that the typical image of vessel may

be similar to a umbilical cord loop, so the course of the vessel should be evaluated carefully to visualize it within the membranes and to exclude other possible causes of a vessel near the cervix, such as marginal vein, funic presentation, or venous sinus.[5,13]

Individually planned care should be designed based on each individual case to reach the goal of management of vasa previa, which is prolong pregnancy safely while avoiding potential complications related to membrane rupture or labor. For asymptomatic pregnant woman, bed rest should be recommended, and antenatal hospitalization may be considered from 30-34 weeks of gestation based on individual symptoms to closely ensure signs of labor and planned timely C-section.[5] Administration of antenatal corticosteroid for fetal lung maturation may be considered from 28-32 weeks of gestation in case of need for urgent preterm delivery.[14] C-section remains the mode of delivery of choice for known vasa previa. Planned cesarean birth for a prenatal diagnosis of vasa previa at 34-37 weeks of gestation is suggested. If sudden rupture of the membrane or vaginal bleeding combined with either sinusoidal fetal heart rate pattern or sudden fetal bradycardia developed, C-section should be conducted promptly. The cesarean birth should be conducted at a hospital with facility for neonatal blood transfusion.[5]

Early prenatal diagnosis of vasa previa has shown significant survival rates improvement especially by using ultrasonography examination on second and third trimester.[5,6,14] However, diagnosing using ultrasonography is also a challenging experience for even experience operators let alone for those with no proper facility in rural area and still no large-scale prospective studies are there to support a routine screening for vasa previa.[8]

CONCLUSIONS

Vasa previa is seemingly a rare medical condition. However, it could cause high mortality to the fetus or newborn. Early prenatal diagnosis using ultrasonography examination could increase the survival rate of the fetus if followed by sufficient measure after diagnosed. Cesarean birth is the safest mode of delivery even before the clinical signs or onset of labor occurred.

Competing Interest

The authors declare that they have no competing interest.

Funding

The authors declare that they have no funding source.

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