Pregnancy is a physiological phenomenon, but this phase is a critical period that can lead to complications and high-risk conditions. Placenta previa is one of the most common causes of antepartum hemorrhage, and here we report such a case with accompanying complications and preparation for the correct treatment management. This case study was carried out through anamnesis, physical examination, and laboratory assessment. The instrument in this study was used for screening pregnant women. The results of the study showed that a patient aged 35 years with gravida 6, para 4, abortion 1, 34-35 weeks gestation, 2 times history of caesarean section (CS), experienced painless spotting bleeding, Hb: 10.4 gr%, and HbsAg: positive, breech presentation, with a lateral placenta previa. The management that has been carried out is interprofessional collaboration for referrals to advanced health facilities for monitoring of placenta previa, planning for delivery, corticosteroid therapy for fetal lung maturation, HBsAg serologic examination, and provision of vaccines to prevent mother-to-child transmission (MTCT). The quality of antenatal care (ANC) can reduce the morbidity and mortality risk significantly, because adequate management preparation, interprofessional collaboration, the availability of blood transfusions, operative procedures, Intensive Unit Care (ICU), and adequate neonatal facilities can improve the prognosis of pregnancy’s complication cases.

Keywords: High risk pregnancy, preterm, placenta previa, hepatitis B virus (HBV)

INTRODUCTION

Pregnancy is a critical period in a woman’s life cycle because every woman has a very unique physical, psychological, and social health conditions (Mirzakhani et al., 2020). Pregnancy is a physiological phenomenon, but in some cases, it can lead to high-risk conditions that can endanger the mother and fetus. WHO reports that 15% of all pregnant women have the potential to experience complications during pregnancy (WHO, 2017). Globally, 200 million women have high-risk pregnancies and 800 cases of female mortality occur every day due to complications during the antenatal period (Yilmaz and Oskay, 2021).
80% of maternal deaths are caused by complications of hypertension (pre-eclampsia and eclampsia), bleeding, infection, and unsafe abortion (WHO, 2019). Co-morbidities suffered by pregnant women such as diabetes mellitus, cardiovascular disease, hepatitis, and tuberculosis also contribute to morbidity and mortality (Susiana, 2019).

In developing countries, high-risk pregnancies are the biggest contributor to maternal and neonatal mortality (Mirzae et al., 2021). Other factors that underlie the occurrence of high-risk pregnancies are pregnancy at a very young age or more than 35 years, malnutrition, the short interval between pregnancies, grand multipara, low-lying placenta, history of cesarean delivery, history of abortion, and chronic disease of the mother (Mirzae et al., 2021). Socio-economic and cultural conditions also undeniably affect the occurrence of high-risk pregnancies (Karrar and Hong, 2021). The results of Sakai's study (2020), in 538 cases of high-risk pregnancy, 48% showed that the high risk was related to economic problems (Sakai et al., 2020). These results are supported by research conducted by Kim (2018), which states that socioeconomic status, especially low economic status, is associated with several complications including: abortion, premature, pre-eclampsia, eclampsia, and gestational diabetes (Kim et al., 2018).

In antenatal care, determining risk stratification in pregnant women is very important, because the prognosis for pregnancy outcomes depends on the severity of a complication experienced (Yilmaz and Oskay, 2021). Early detection of complications, identification of the causes of complications, investigations and appropriate management of antenatal care (ANC) can help improve maternal and neonatal health outcomes. Accurate diagnosis, coordination and interprofessional collaboration in carrying out comprehensive case management for high-risk pregnant women will improve the prognosis of maternal and fetal health outcomes (Karrar and Hong, 2021). This case study aims to identify the causes of complications in pregnant women and determine management to improve maternal and neonatal health outcomes in cases of high-risk pregnant women.

CASE

A 35-year-old pregnant woman with married status, with high school last education, and work as a housewife, came to Puskesmas Pakis (Pakis Health Center) on March 2, 2021. The patient came with complaints of painless spotting bleeding 2 weeks ago. The first day of the mother's last menstrual period was July 11, 2020 with an expected date of delivery (EDD) was April 18, 2021 and at the time of examination, the mother's gestational age (GA) was 33-34 weeks. Mother has a marriage history of 1 time with a length of marriage of 8 years. This
case was the patient’s 6th pregnancy with an obstetric history listed in table 1. The mother has a history of 1 abortion, malpresentation of the breech position in her 4th pregnancy, and a history of twice CS. Mother said that she had never used natural, short-term, or long-term contraceptive methods on the grounds that her husband was not permitted to do so due to religious reasons. The results of the medical history showed that the mother had been infected with Hepatitis B Virus (HBV) since her 5th pregnancy, the mother had no history of hypertension, diabetes mellitus, cardiovascular disease, and sexually transmitted diseases.

Table 1. Obstetric History and Contraceptive Use

<table>
<thead>
<tr>
<th>Pregnancy Complication</th>
<th>Delivery</th>
<th>Attendant</th>
<th>BBL Condition</th>
<th>Child’s Age</th>
<th>Contraceptive Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Normal</td>
<td>Midwife</td>
<td>Female/2900 gram/healthy</td>
<td>7 Years Old</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2. Abortion</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3. Normal</td>
<td>Midwife</td>
<td>Male/3800 gram/healthy</td>
<td>5 Years Old</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>4. Breech Presentation</td>
<td>Caesarean Section</td>
<td>Doctor</td>
<td>Male/3600 gram kg/healthy</td>
<td>3 Years Old</td>
<td>-</td>
</tr>
<tr>
<td>5. CS History</td>
<td>Caesarean Section</td>
<td>Doctor</td>
<td>Female/3000 gram/healthy</td>
<td>19 Months</td>
<td>-</td>
</tr>
</tbody>
</table>

The results of the objective examination showed that the mother had blood pressure: 100/70 mmHg, temperature: 36.6°C, pulse: 88 x/minute, breathing: 19 x/minute, height: 160 cm, weight: 63 kg, and upper arm circumference: 26 cm. On physical examination, the appearance of sclera was yellow, there was no swollen lymph nodes and thyroid gland in the neck and no jugular vein swelling. The mother did not experience edema in the upper or lower extremities. On genital inspection, it was found that the mother had blood spots.

On obstetric examination, the results of the measurement of uterine fundal height were 27 cm and for examination of the fetal heart rate (FHR) using doppler it was 146 x/minute. On palpation, Leopold I found that the fundus was palpated hard, round, and bouncy with the impression of the head. On Leopold II examination, the back was palpable on the left side of the mother's abdomen and small parts were palpated on the right side of the mother's abdomen. Leopold III examination was round, soft, and not bouncy or palpable buttocks and the results of Leopold IV showed that the lowest part had not entered the pelvic inlet.
Investigation results showed blood type: A, Hb: 10.4 g%, random blood sugar levels: 131, albumin: negative, urine reduction: negative, HBsAg: reactive, HIV: non reactive, syphilis: non reactive. The results of the ultrasound examination carried out by the mother on March 1, 2021 showed the results of a breech presentation and lateral placenta previa.

Based on the history and examination, the obstetric diagnosis was gravida 6, para 4, and abortion 1, 33-34 weeks gestation with breech presentation, lateral placenta previa, and chronic HBV. The results of the identification of potential maternal problems are: antepartum bleeding and postpartum hemorrhage. Potential neonatal problems are: prematurity, asphyxia, respiratory distress syndrome (RDS), MTCT HBV transmission. The immediate need for the patient's condition is to immediately consult an obstetrics and gynecology specialist for referrals for observation of placenta previa, blood transfusion, fetal lung maturation, and follow-up HBV serology tests. Management according to the midwife's authority is: providing information to patients and families that referrals must be made to the hospital immediately, preparing prospective family members who will become blood donors for mothers, coordinating with the midwife at the Pakis Health Center in charge of the hepatitis immunization program to carry out further management of provision vaccines and screening other family members.

DISCUSSION

The results of the anamnesis showed that the patient was gravida six with complaints of bleeding in the form of spots without pain 2 weeks ago. Based on calculations using first day of last menstruation, the mother's gestational age is estimated at 33-34 weeks. The presence of complaints of bleeding without pain that occurs in the third trimester of pregnancy is a clinical manifestation that leads to cases of placenta previa (Merriam and D’Alton, 2017a). The diagnosis of placenta previa, in this case was confirmed by ultrasonography (USG). The results of an ultrasound examination conducted on March 1, 2021, showed that the mother had lateral placenta previa. Ultrasound examination is the main method recommended for detecting the location of abnormal placental implantation in the prenatal period, this examination is very important to make a proper diagnosis and determine the next management (Park and Cho, 2020). Speculum examination of digital vaginal examination is no longer recommended to diagnose placenta previa because it can cause massive bleeding (Merriam and D’Alton, 2017a).

Placenta previa is one of the biggest risk factors for antepartum bleeding that leads to maternal and neonatal morbidity and mortality (Ryu, Choi and Bae, 2019). The results of a
meta-analysis study reported that the prevalence of the incidence of placenta previa globally was 0.56% (IQR 0.39–1.24) (Jauniaux et al., 2019). The cause of placenta previa is not known for certain, but this incident has a relationship with the condition of endometrial damage and scar tissue in the uterus. The complex interaction between the endometrium and the embryo plays an important role in the implantation process (Jansen et al., 2020). Before the implantation, the blastocyst will orient and select the implantation site. The fundus is a good place for placental implantation because it has high blood flow so it is rich in oxygen. However, 94% of embryos will not migrate and implant in the fundus area if there has been a placental transplant in that area in a previous pregnancy (Woolcott and Stanger, 1998; Baba et al., 2000; Jansen et al., 2020). Women with multiparity and history of cesarean delivery are less likely to implant placenta in the fundus area, this causes women with gravida 5 and a history of cesarean section to be at risk for low-lying placental implantation (Jansen et al., 2020).

This is in accordance with the condition of the patient who is pregnant with her 6th child with 2 cesarean deliveries and has had 1 abortion history. The results of the anamnnesis showed that the mother did not arrange pregnancy because of the prohibition from her husband for religious reasons. The results of research conducted in Tanzania found that religious beliefs affect family planning literacy. Some religions forbid them to use contraception because it is considered to prevent the meeting of egg and sperm cells so that pregnancy does not occur, and this is against God's will (Kassim and Ndumbaro, 2022). The results of another study conducted in Nigeria by Ai, Odejimi O and Ad (2018) on 104,884 women of childbearing age-aged 15-45 years, stated that 84.5% of family planning decisions were influenced by the husband's acceptance of contraceptive methods. The results of the study by Senkoro et al., (2017) reported that grand multiparas had a 5-fold increased risk of developing placenta previa. The presence of degenerative changes in uterine blood vessels results in hypertrophy of placental tissue and low-lying implantation (Kiondo, Wandabwa and Doyle, 2008; Senkoro et al., 2017). Other risk factors that support the occurrence of placenta previa are maternal age, frequency of history of cesarean section, frequency of abortion, history of placenta previa, and unhealthy lifestyle patterns (Merriam and D’Alton, 2017b; Martinelli et al., 2018; Jing et al., 2018).

Screening for HBV infection in patients showed reactive results. The patient said he had known the disease since his 5th pregnancy, but the mother and family did not receive further intervention related to the disease. Several epidemiological studies have reported that there is an association between HBV in pregnancy and the incidence of abnormal placental
implantation (Huang et al., 2014). This can occur because the inflammation caused by HBV in pregnancy can cause trophoblast dysfunction which has an important role in the implantation process and placental development (Zhang et al., 2020). However, the association between HBV and the incidence of placenta previa was not significantly proven (aRR, 1.16; 95% CI, 0.35–3.84) (Bajema et al., 2018).

Saleh Gargari et al., (2016) conveyed that the risk factors for placenta previa should be investigated to predict the presence of co-morbidities. Placenta previa has been reported to be associated with poor fetomaternal health outcomes, namely fetal malpresentation, postpartum hemorrhage, antepartum hemorrhage, cesarean delivery, prematurity, low birth weight, and neonatal maternal death (Senkoro et al., 2017). From the results of Leopold’s examination, it was found that there was a malposition of the fetus, namely a breech position. The condition experienced by the patient is in line with the results of the study that 69% of mothers with parity >3 have the potential to experience breech position malpresentation (Sataloff et al., 2017). This case has the potential to cause massive bleeding during the antenatal, intranatal, and postnatal periods. Maternal age of 35 years and fetal malpresentation have been predicted to increase the incidence of massive postnatal bleeding (Lee et al., 2018).

Management carried out by midwives is to collaborate with obstetrics and gynecology specialists for referrals treatment. Based on the management guidelines for the management of placenta previa, optimization of the maternal condition should be prioritized. The results of the Hb examination in the patient were 10.4 g% which indicated the mother was in an anemia condition. The presence of spotting in cases of placenta previa without medical treatment can lead to anemia (Jain, Bos and Bujold, 2020). In some cases of placenta previa, blood transfusion is necessary to avoid damage to vascular access (Jain, Bos and Bujold, 2020). Conditions that are not treated immediately will worsen morbidity because anemia that occurs before delivery is a risk factor for intranatal bleeding (Gibbins et al., 2018).

Tocolytics are believed to prevent uterine contractions which can prevent the separation of the placenta. Administration of tocolytics in cases of placenta previa is no longer recommended to prolong gestational age. Based on the results of a randomized control trial (RCT) it was reported that there was no significant effect of giving nifedipine as a tocolytic to prolong gestation (Verspyck et al., 2017). The occurrence of antepartum bleeding is also a contraindication to tocolytic administration because it can cause hemodynamic instability (Jain, Bos and Bujold, 2020).

In the case of lateral placenta previa, termination of pregnancy should be carried out at 37-38 weeks, but the presence of signs of preterm labor, substantial bleeding, and findings of
vasa previa require termination at 34 weeks gestation (Jain, Bos and Bujold, 2020). The administration of corticosteroids in cases of placenta previa must be considered because inappropriate administration can result in poor neonatal health outcomes. Administration of corticosteroids in low-lying placenta previa without the urgency of termination has a negative impact on neonatal health outcomes (Skoll et al., 2018). Based on guidelines for the management of placenta previa, corticosteroids are only given when there is an urgency for termination of pregnancy within 7 days (Jain, Bos and Bujold, 2020). A history of 2 cesarean deliveries, lateral placenta previa, malpresentation, and the current maternal age indicate the mother for elective cesarean delivery (Jain, Bos and Bujold, 2020).

The need for HBsAg serological tests on patients is to determine the viral load that can affect viral propagation through MTCT. A high viral load in pregnant women with hepatitis B has a higher risk of transmission to the fetus (Kushner and Sarkar, 2018). 90% of babies born to mothers with chronic HBV can contract HBV vertically if there is no prevention effort (Mustika and Hasanah, 2018). As a preventive treatment, infants of mothers with chronic HBV should be given active-passive immunoprophylaxis with HBIG in the first 12 hours with a dose of 0.5 ml intramuscularly followed by 3 doses of HBV immunization in the first year of life. The process of evaluating anti-HBS levels is carried out at the age of 9 to 18 months if the anti-HBS level is less than 10 mIU/ml, the body's immunity is considered lacking and must go through a 3 dose procedure of giving the vaccine again (Mustika and Hasanah, 2018). In this case, the patient was referred to get referral action at an advanced health facility. Interprofessional coordination and collaboration in managing high-risk pregnancies can increase the chances of maternal and neonatal health outcomes.

CONCLUSION

Risk factors and medical history of pregnant women with high risk are important for investigation. History, physical examination, and supporting examinations are the cornerstones of establishing a diagnosis to be able to determine appropriate management. Adequate management preparation, interprofessional collaboration, referral process, availability of blood transfusions, operative procedures, ICU, and adequate neonatal facilities can improve the prognosis of high-risk pregnancies.
ABBREVIATIONS

CS, Caesarean Section; MTCT, Mother to Child Transmission; ANC, Antenatal Care; ICU, Intensive Unit Care; EDD, Expected Date of Delivery; GA, Gestational Age; HBV, Hepatitis B Virus; FHR, Fetal Heart Rate; RDS, Respiratory Distress Syndrome; USG, Ultrasonography.

COMPETING INTEREST

The authors report no conflict of interest.

AUTHORS’ CONTRIBUTION

The first author performed corrected the result of this research and the corresponding author was the collector of the research data.

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REFERENCES


Jing, L. et al. (2018) ‘Effect of site of placentation on pregnancy outcomes in patients with...


Sataloff, R. T., Johns, M. M. and Kost, K. M. (no date) ‘The Relationship of Parity and


