



Total Placenta Previa with High-risk MAP and Transverse Lie Fetal Position

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ABSTRACT

Placenta accreta is one of the emergency conditions and has resulted in increased mortality and morbidity of pregnant women due to the massive obstetric hemorrhage. Placenta accreta can lead to secondary complications including coagulopathy, multisystem organ failure, acute respiratory distress syndrome, need for repeat surgery, and death. Assessment by anesthesia should be carried out as early as possible before surgery to reduce or even eliminate morbidity and mortality. In this report, we present the case of a patient with total placenta previa and high-risk MAP score with a transverse lie fetal position. The various anesthetic treatments and transfusion strategies are discussed with a multidisciplinary approach to delivery.

Keywords. Placenta Accrete, Caesarean Section, General Anesthesia, Obstetric Hemorrhage



Introduction

Placenta accreta is the failure to separate the placenta from the uterine wall after delivery. This condition is experienced with invasive placentation associated with catastrophic bleeding.¹ Placenta accreta occurs when the chorionic villi abnormally invade the myometrium. Placenta accreta, increta, or percreta are associated with major pregnancies, including life-threatening maternal bleeding, large volume blood transfusions, and peripartum hysterectomy.²

Over the past 30 years, the incidence of placenta accreta has increased ten-fold. The main risk associated with any form of placenta accreta is massive obstetric hemorrhage, leading to secondary complications including coagulopathy, multisystem organ failure, acute respiratory distress syndrome, need for repeat surgery, and death in which 55% of women require transfusion and 21% of patients require more than 5 units of blood.³⁻⁵

The risk of peripartum hemorrhage and placenta accreta cases need to be managed in a multidisciplinary manner. Assessment by anesthesia should be carried out as early as possible before surgery. Accurate prenatal diagnosis, careful planning, and close communication are essential, including the formation of a specialized surgical team to implement a safe treatment plan for patients with placenta accreta and to improve maternal and neonatal outcomes.^{5,6}

Case History

A 37-year-old woman (gravida 2, para 1) was pregnant at 37 weeks' gestation. The patient felt bleeding from the birth canal. The patient still could feel the fetal movements, the amniotic fluid had not been felt yet, the regular speed has not been felt. Complaints of headache, blurred vision and heartburn were denied. Patient did ante natal care visit every month to an obstetrician. The patient had a history of uncontrolled hypertension. Patient had caesarean section in the first pregnancy in 2013 for severe preeclampsia and FAM excision in 2008. Abdomen examination indicating a transverse lie fetal position. Blood test results were hemoglobin pf 10.1 g/dL, leukocytes pf 11.2 thousand/uL, albumin of 3.4 g/dL, potassium of 2.7 mmol/L, prothrombin time (PT) of 12.3 seconds, activated partial thromboplastin. time (APTT) of 26.7 seconds, and INR of 0.930.

Ultrasound examination showed lacunae, placenta previa insertion in the lower uterine segment that expanded and covered the internal orifice of the uterus with the impression of total placenta previa. The morbidly adherent placenta (MAP) assessment score based on six criteria (Table



1) is 8 which indicated a high-risk MAP score. The placenta accreta index score (Table 2) showed a score of 4. The patient was then planned to undergo an emergency trans-peritoneal transperitoneal cesarean resection operation based on the indication of a transverse lie fetal position and total placenta previa high risk MAP with physical status of ASA II.

Table 1. Morbidly Adherent Placenta (MAP) Score in Patient

Parameter	Value	Score
Previous caesarean delivery	1	1
Location of placenta	Placenta previa	2
Number of lacuna	> 2	2
Lacuna maximum dimension	> 2 cm	2
Obliteration of uteroplacental demarcation	No	0
Doppler assessment	Bridging vessel	1
MAP Score		8 (high risk)

Table 2. Placenta Accreta Index (PAI) Score in Patient

Parameter	Value	Score
Previous caesarean delivery	1	1
Lacuna	Grade 2	1
<i>Miomtrium thickness</i>	< 1 mm	1
Anterior plasenta previa	Yes	1
<i>Bridging vessel</i>	Yes	1
PAI Score		4 (51%)

In the operating room, the patient is fitted with an ECG monitor, pulse oxymetry and blood pressure. Hemodynamic status was recorded before induction, blood pressure (BP) was 153/84 mmHg, pulse (N) was 105 beats per minute, breath rate (RR) was 20 times per minute, body temperature was 36.8°C, oxygen saturation was 98% of room air.

Anesthesia was inducted at 09.00 with general anesthesia rapid sequence intubation 7P using propofol 80 mg and rocurax 50 mg intravenously. The 7.0, 19 cm endotracheal tube (ET) was used. The operation lasted approximately 6 hours until 15.30, bleeding during the operation was \pm 4500 cc and the fluid balance was \pm 770 cc. During the operation, the hemodynamics of systolic blood pressure was \pm 90 \pm 50 mmHg and diastole was \pm 70 \pm 40 mmHg, pulse was 90-110 beats per minute, oxygen saturation was 95-100%. Patients received 2500 cc (5 x 500 cc) of crystalloid, 1500 cc (3 x 500 cc) of colloids, 350 cc of whole blood (WB), and 920 cc (4 x 230 cc) of packed red cells (PRC). The total fluid support administrated was 5270 cc.

The baby was born male with APGAR score of 4-5-6 and birth weight of 2350 grams. After the baby and the placenta were born, uterine tampons were placed in 7 pieces. After the operation was completed, the patient was admitted to the intensive care unit (ICU).



Patients were treated in the ICU with a Synchronous Intermittent Mandatory Ventilation (SIMV) ventilator breathing apparatus, urinary catheter attached, and nasogastric tube attached with green product on day 0, 1, and 2 post surgery. A drain was attached to the surgical scar with a reddish black product on day 0, 1, and 2 post surgery. Postoperative day 1, blood gas analysis revealed an incomplete compensated respiratory alkalosis. The patient was in stable condition on the day 3 post surgery. The tampon and NGT were removed on day 3 post surgery. The urinary catheter was maintained for up to 2 weeks.

Discussion

Placenta accreta is one of the emergency conditions and has resulted in increased mortality and morbidity of pregnant women in Indonesia which is mainly due to massive bleeding due to the formation of blood vessels from the organs around the uterus and other organ invasion.^{7,8} In addition, morbidly adherent placenta (MAP) is one of a number of risk factors associated with maternal mortality. MAP causes as many as 15% of all obstetric hemorrhage cases requiring blood transfusion and is associated with severe morbidity, in addition to the increased likelihood of using invasive procedures such as hysterectomy (78%), profuse blood loss of more than 3000 ml (65%), and massive blood transfusions with ≥ 10 units of packed red cells and/or ≥ 10 units of fresh frozen plasma (74%).^{9,10}

Special strategies are needed to reduce or even eliminate morbidity and mortality due to placenta accreta. Anesthesia management plays an important role in ensuring the safety of patients with placenta accreta. Factors that contribute to an abnormally invasive placenta must be identified prior to medical intervention. The anesthetist should consider these risk factors and work closely with other health professionals to assist in planning the most appropriate anesthetic plan.^{11,12}

Transperitoneal caesarean section in placenta accreta cases is an emergency surgery. A careful history, physical examination and support must be carried out. In placenta accreta patients with hypovolemic shock, preoperative assessments are performed for maintenance of fluid requirements/fluid balance, hemodynamic control, adequate oxygenation, and laboratory tests including routine blood, coagulation factors, and electrolytes.^{11,13}

The patient was aware condition with active vaginal bleeding. On physical examination, blood pressure was 153/84 mmHg, pulse of 105 beats per minute, and RR of 20 beats per minute. The patient had ± 1000 cc of vaginal bleeding. Blood test showed anemia, leucytosis, mild hypoalbumin, mild hypokalemia, and coagulation function within normal range. To keep the patient's condition stable, the patient was administered with ± 1750 cc of crystalloid infusion attached urinary catheter to assess fluid adequacy.



Prior to the caesarean section procedure, the family and patient should be informed about the plan needed to be carried out, anesthetic and surgical procedures and possible things that can happen during the procedure. Patients and families need to understand the risk of death for mother and the baby. The possibility of blood transfusion and hysterectomy needs to be discussed and consent must be taken before surgery.^{11,13}

In this case, an emergency transperitoneal caesarean resection was performed with the RSI 7P general anesthesia and endotracheal tube. Hemodynamic status was monitored with ECG monitor, pulse oxymetry, blood pressure and pulse. During the operation, hemodynamic was unstable, the patient received 2500 cc of crystalloid, 1500 cc of colloids, 350 cc of WB, and 920 cc of PRC.

Regional or general anesthesia may be used depending on the amount of the estimated blood loss and the extent of the accreta or percreta area and the duration of the procedure. Regional anesthesia can provide better postoperative pain control, reduce the risk of aspiration, reduce bleeding, allow better mother-infant bonding, and decrease fetal exposure to medications. However, it has the risk of hemodynamic instability and the risk of difficult airway during the operation. General anesthesia allows better ventilation control as well as better hemodynamic stability in the event of massive bleeding. Immediate access to blood products in the operating room is essential when performing a caesarean section in a patient with such condition.^{11,14}

The implementation of a massive transfusion protocol must require the continuous availability of blood products until the bleeding can be controlled and can save lives in cases of severe bleeding. Patients with caesarean section for placenta accreta have the potential for ICU admission and postoperative ventilation if excessive bleeding occurs leading to hemorrhagic shock or the need for massive transfusions.^{1,15}

Conclusion

A 37-year-old woman (gravida 2, para 1) with 37 weeks gestation and a transverse lie fetal location. The patient had a cesarean section in 2013 for the indication of severe preeclampsia. The patient was diagnosed with placenta previa totalis high risk MAP in the second pregnancy with a pregnancy at term not yet in labor. The patient was treated for emergency transperitoneal caesarian resection with general anesthesia. The operation lasted 6 hours. During surgery the hemodynamics was unstable and the patient was administered with crystalloid fluids and blood component transfusions. Postoperatively the patient was admitted to the ICU with mechanical ventilation.



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