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Case report

Massive obstetric haemorrhage on post caesarean subtotal hysterectomy due to late detection of occult placenta percreta: A case report

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ABSTRACT

Introduction: Placenta accreta syndrome is a significant cause of maternal mortality and morbidity. Therefore, a multidiscipline approach is essential to overcome this life-threatening disorder for the mother and fetus.
Presentation of case: A 32-year-old women gravida 3 parity 2, 34 weeks gestation come due to recurrent antepartum haemorrhage. She had twice prior caesarean section. Ultrasound assessment suggests total placenta previa and elevating suspicion to placenta accreta. However, intraoperatively its sign is unavailable. Although we have done subtotal hysterectomy, massive bleeding still occurring. Therefore, we present management of unexpected placenta percreta.
Discussion: Management of unexpected placenta percreta involves prenatal diagnosis, haemoglobin optimization, surgical management anticipating haemorrhage, dedicated maternal ICU, blood bank providing massive transfusion and blood component.
Conclusion: Close monitoring is important in catastrophe management of Placenta Accreta Syndrome.

1. Introduction

Placenta Accreta Spectrum (PAS) can cause massive haemorrhage and lead to multisystem organ failure, disseminated intravascular coagulation (DIC), need for admission to an intensive care unit (ICU), hysterectomy, and death. The incidence is rising through year 1 in 533 births and associated with prior caesarean section [1].

PAS disorder comprised placenta accreta, increta, and percreta based on histopathology examination. The multidiscipline approach is important in treating PAS. Despite this, an experienced sonographer and surgeon can predict PAS prenatally and intraoperatively at a tertiary hospital. The distinction between prenatal and intraoperative findings can lead to massive bleeding. Therefore, we demonstrated a multidiscipline approach in catastrophe management of PAS [2]. This case report has been reported in line with the SCARE 2020 criteria [3].

2. Presentation of case

Mrs 31 years old came with recurrent antepartum haemorrhage due to total placenta previa on gravida 3 Parity 2, 34 weeks gestational, singleton live head presentation, previous caesarean section 2 times. Her last menstrual period and all ultrasound examinations were equivalent to 34 weeks gestation. She performed antenatal care in primary health care and secondary public hospital. She complained vaginal bleeding 3 h before admission extending to the whole underpad. The patient had been admitted to our hospital previously, and it had given lung maturation. The patient had no significant history of illness. In addition, the doctor had performed a caesarean section prior 12 years and three years due to breech presentation and previous caesarean section. She was a housewife, and her husband was security.

Physical examination showed her vital sign was fully alert, blood pressure 105/55 mmHg, heart rate 98×/min, respiration rate 20×/min, and temperature 36.5 °C, BMI pre-pregnancy was 26.7. General status presented no significant disorder. Obstetrical examination found fundal height 27 cm, irregular contraction, fetal heart rate 144 beats per minute, estimated fetal weight 2480 g. inspection showed smooth portion, closed ostium uterine external, unactive bleeding, blood clot in the vagina, and undone vaginal touché.

Ultrasound revealed singleton live head presentation. Her estimated fetal weight was 2400 g, artery umbilical systolic diastolic 2.98 and

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amniotic fluid index 16, placenta implanted to anterior uterine corpus extending to cover ostium uterine internal. Placenta Accreta Index (PAI) score was 5.5 equivalent 69% probability invasion (Fig. 1).

Supporting examinations suggested anaemia due to blood loss. First, complete blood count (CBC) showed haemoglobin level 8.3 g/dL, hematocrit 26.1%, leukocyte 11,800/μL, and thrombocyte count 351.000/μL. Secondly, Liver enzyme and kidney function showed a standard range of AST 14 U/L and ALT 12 U/L, urea 12 mg/dL and creatinine 0.6 mg/dL. Finally, covid-19 screening concluded that a non-reactive of rapid test IgM/IgG SARS CoV-2, a typical image of pulmonary and cardiology, neutrophil-lymphocyte ratio (NLR) 6.32, C-reactive Protein (CRP) quantitative 3.3 mg/dL and procalcitonin 0.05 ng/dL

We found no sign of PAS at the anterior corpus (Fig. 2a) at the first surgery. Therefore, we performed an incision at the lower segment uterine (LUS) born baby girl weighed 2.6 kg, length 47 cm, Apgar scores 8/9 and clear amniotic fluid. As a result, the placenta was delivered entirely without any obstacle, and we did tubectomy. However, during observation at the recovery room, profuse vaginal bleeding due to inadequate contraction occurred. Simultaneously, we were administering uterotonics and tamponade balloons. However, hemodynamic was unstable during observation at ICU.

Moreover, we were administering Packed Red Cell (PRC) 1000 cm^3 (4 U) and Fresh Frozen Plasma (FFP) 380 cm^3. Palpation of fundal height showed uterus enlargement until five fingers above umbilical, and haemoglobin level was 2.6 g/dL. In addition, signs established postpartum haemorrhage due to uterine atony. Therefore, emergency laparotomy was mandatory.

Intraoperative finding on second surgery was poor uterine tone contraction. We decided subtotal hysterectomy. Both round ligaments were clamped, transected and sutured, windowing of broad ligament, both tube and ovary proper ligaments were attached, cut and sutured. We transected the uterus at the level LUS, and we applied haemostatic sutured. During intraoperative and observation at ICU, we administered PRC 1000 cm^3 (4 U), FFP 500 cm^3, Thrombocyte Concentrate (TC) 300 cm^3, and Cryoprecipitate 30 cm^3. However, following surgery completed, vaginal bleeding emerged. Subsequently, we inserted vaginal tamponade. During observation postoperative in ICU stable hemodynamic never achieved and haemoglobin level was 5 g/dL. Additionally, an ultrasound examination found free fluid at a liver level. Therefore, we decided to do more laparotomy exploration.

During the third surgery, it found blood filling the whole abdomen. Moreover, after dissection of the uterovesica fold, it revealed a bluish bulging mass on the right part of the uterine stump until lateral of the cervix (Fig. 3). Therefore, the surgeon decided on trachelectomy and hypogastric artery ligation. During observation at ICU, it achieved stable hemodynamically, and haemoglobin level was 8.3 g/dL.

2.1. Follow up

Fig. 4a–f showed invasion of trophoblast until vagina. Additionally, histopathology examination showed loss of serous layer part. These data presented placenta percreta.

3. Discussion

The risk factor for PAS was placenta previa and prior caesarean section. Placenta previa alone and twice previous caesarean section had 3% and 6.74% risk associated PAS. Combination of both increased significant risk into 11% [4]. Defects of the endometrial-myometrial leading to a failure of normal decidualization could cause PAS. This event implicated deep placental anchoring villi and trophoblast infiltration [5].

Caesarean birth was indicated for emergency purposes especially saving mother and baby lives. The rate was increasing in every country. Currently, WHO had strived to reduce caesarean birth. Similarly, ACOG had issued a consensus to decrease it. The statement emphasized safe prevention and indication for primary caesarean delivery. This statement would compress following caesarean birth. Consequently, it would decrease the PAS rate [6].

The ultrasound predicted PAS. The findings were the loss of the normal myometrium, placental lacunae, abnormality of the uterine serosa-bladder interface, and increased placental vascularity colour Doppler [5]. A study had developed Placenta Accreta Index (PAI) for a high-risk patient. PAI score included previous c section 2×, lacuna grade, myometrial thickness, placenta previa, and bridging vessels resulting in a total score 5.5. This correlated to sensitivity 52%, specificity 92%, positive predictive value 75% and negative predictive value 79% [4].

Elective surgery was conducted at 34 weeks gestation due to recurrent antepartum haemorrhage. Hence, we administered corticosteroids for lung maturation. Currently, there are no guidelines stated for optimal delivery in PAS. However, Many centres suggested the appropriate time for delivery was between 35 and 37 weeks gestation. Furthermore, the standardized protocol for optimal haemoglobin for obstetric surgery was 8 g/dL. ICU and NICU also have been prepared. The advantage of elective surgery for PAS was optimal management for the maternal and fetal preoperatively [7].

We conducted subtotal hysterectomy, trachelectomy and hypogastric artery ligation at multiple surgeries. The second surgery aimed to remove the uterus fundal and corpus. This procedure could stop bleeding caused by inadequate contraction (Fig. 2b). However, the vaginal and intraabdominal bleeding led to unstable hemodynamic. Therefore, in the third surgery, we conducted exploration for bleeding sources and originated from the lower part of the uterus. Subsequently, We conducted trachelectomy and hypogastric artery ligation. This late

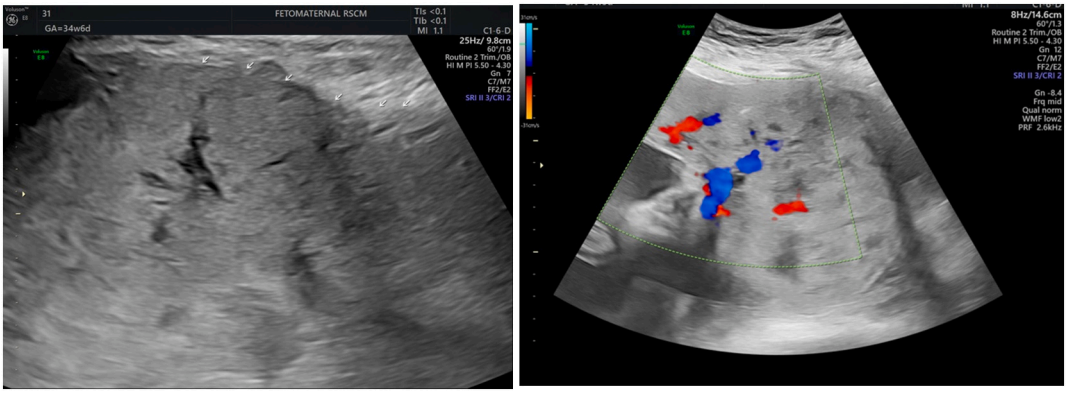

Fig. 1. PAI score consisted previous caesarean section 2 x (3), lacuna grade grade II (1), myometrial thickness < 1 mm (0.5), anterior placenta previa (1), bridging vessels (0), total score 5.5.

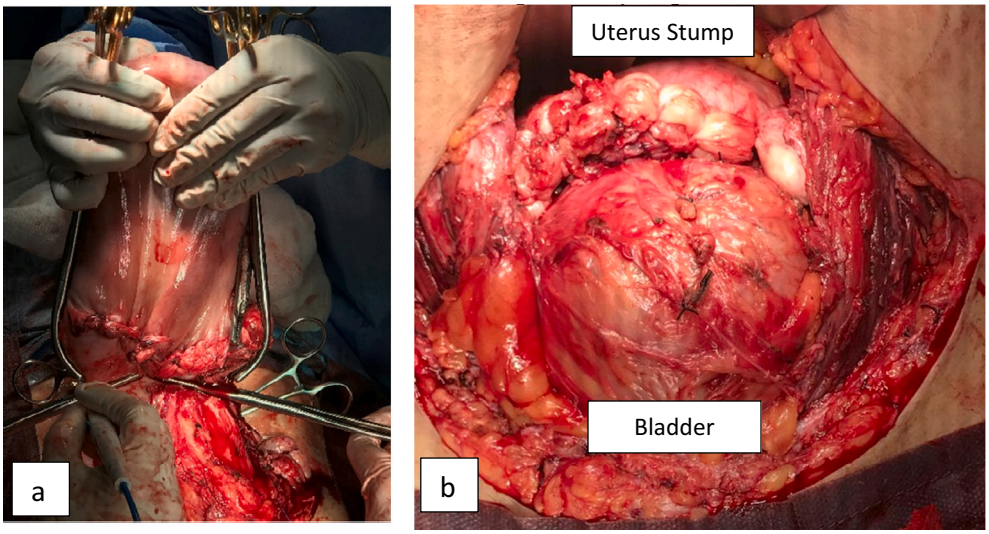

Fig. 2. a Clear uterus without any bulging mass covered lower segment uterus. b Final view of subtotal Hysterectomy procedure on second emergency laparotomy.

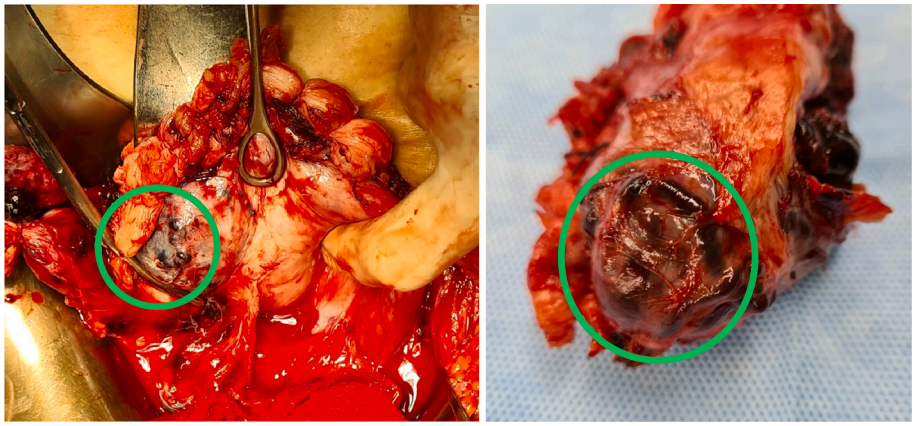

Fig. 3. Occult placenta accreta under uterus stump after dissection of uterovesical fold (green circle). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

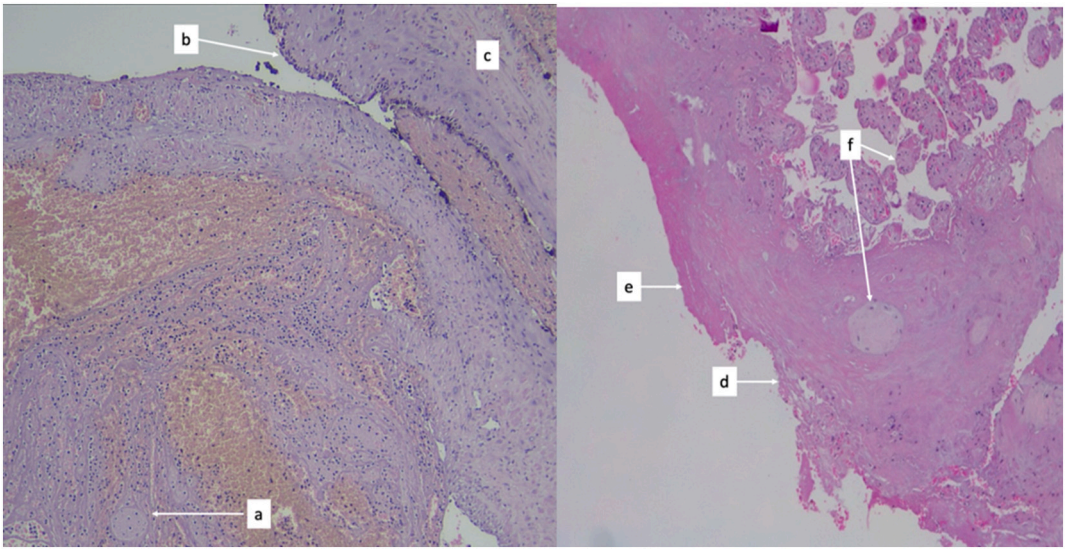

Fig. 4. a. Ghost villi or necrotic villi, b vagina epithelial squamous, c decidua reaction at vagina, d placenta erosion into serous layer, e serous layer of uterus, f villous chorion.

detection might associate with a lack of experience in identifying occult placenta percreta. According to FIGO, the standard treatment for placenta accreta was a subtotal hysterectomy. This standard could reduce blood loss, blood transfusion, perioperative complication, and shorter operating times. Moreover, placenta increta and percreta standard treatment were total hysterectomies [8]. Although there were some controversies about ligation of the hypogastric artery, this ligation could decrease the blood flow to the pelvic area in theory [9]. Finally, the last procedure achieved stability hemodynamically.

During observation at ICU postoperatively, nosocomial infection rose due to the application of the ventilator. The culture showed *Burkholderia cepacia*, *Klebsiella pneumonia*, and *Candida sp*. We were administering antibiotics and antifungals. Although massive haemorrhage occurred, complications did not develop into DIC, gastrointestinal tract and urinary tract injury. In summary, the patient's length of stay was 10 days, estimated blood loss was 3000 cm^3, and PRC transfusion were 13 units (1 unit equivalent to 250 cm^3). Delaying diagnosis of placenta percreta lead to increased massive haemorrhage, transfusion, infection and ICU admission [10]. The benefit of occult placenta percreta management at the tertiary hospital was a multi-discipline approach, dedicated maternal ICU for closed observation and supply for massive blood transfusions at the blood bank [11].

Placenta percreta was a histopathology diagnosis. This classification demonstrated trophoblast invading extra uterine such as bladder and colon. In this case, the placenta invaded the vagina, which causes massive haemorrhage [12].

4. Conclusion

The standard treatment of placenta percreta is total hysterectomy. However, the late detection of occult placenta percreta can lead to a catastrophe event. Therefore, close monitoring and the multidiscipline approach may be significant contributors to prevent maternal mortality.

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None.

Ethical approval

None.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by Editor-in-Chief of this journal on request.

Author contribution

Gatot Purwoto: operator, data analysis, revising, final approval.
Ilham Utama Surya: operator, data collection, data analysis, writing.
Yudianto Budi Saroyo: operator, data analysis, final approval.
Primariadewi Rustamadji: data collection, data analysis.
Achmad Kemal Harzif: operator, drafting, revising.

Registration of research studies

N/A.

Guarantor

Ilham Utama Surya.

Declaration of competing interest

None declared.

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