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Retained Placenta Causing Postpartum Hemorrhagic Shock and Severe Anemia in Rural East Nusa Tenggara, Indonesia: A Case Report

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ABSTRACT

Background: Postpartum hemorrhage remains a leading cause of maternal morbidity and mortality, particularly in resource-limited rural settings. Retained placenta is the second most common etiology, associated with previous cesarean section, curettage, and placenta previa. Limited capacity at primary health centers challenges timely recognition and management of high-risk obstetric emergencies in Indonesia.

Case Presentation: A 42-year-old woman came to Manufui Primary Health Centre with complaints of non-stop bleeding from the birth canal after giving birth with a shaman. Estimated blood loss was around 950 ml and signs of shock were visible on arrival. Management of shock and post-partum hemorrhage were done simultaneously with fluid resuscitation, uterotonics, and finally manual removal of the placenta (MROP) was performed to help control the bleeding. MROP was done without anesthesia because of the limited resource at the facility. Tranexamic acid was not given because it was unavailable at the facility. When the bleeding was controlled and the patients were stable enough for transfer, she was referred to Soe district general hospital for further management with latest hemoglobin level of 5 gr/dl. At the hospital the patient received 3 bags of packed red cells transfusion because there's no blood bank in the area and tubal ligation as long-term contraception.

Conclusion: Post-partum hemorrhage is the leading cause of maternal deaths worldwide, with retained placenta as one of the most common etiologies. Good management and cooperation between health care workers, the community, and various sectors are needed for the best outcomes.

Keywords: Postpartum hemorrhage, retained placenta, anemia, rural, case report

INTRODUCTION

Postpartum hemorrhage is defined as blood loss that exceeds 500 ml after vaginal delivery or 1000 ml after section-caesarean delivery or blood loss accompanied by signs and symptoms of hypovolemia after the 3rd stage of labor.[1] Postpartum hemorrhage further divided into early postpartum hemorrhage which occurs within 24 hours postpartum, and late postpartum hemorrhage which occurs after 24 hours up to 12 weeks postpartum.[2] Uterine atony, retained placenta, genital tract trauma, and coagulopathy are the 4 common etiology for postpartum hemorrhage.[3]

Primary health centers (hereafter referred to as Puskesmas) is a first point of contact with basic healthcare in Indonesia that provide very basic healthcare services like routine antenatal care, assistance of uncomplicated births and basic laboratory services with resources varied depending on the area where the more rural the location the more limited the resources available. The Puskesmas then refer more complicated case that needs further management to a more advanced healthcare facilities like hospitals.[4,5]

Retained placenta is considered the second leading cause of post-partum hemorrhage.[6] Risk factors includes previous history of retained placenta, multiparity, advanced maternal age, placenta previa diagnosed during pregnancy, and prior uterine scar (history of cesarean delivery or curettage).[1,7] Morbidity and mortality from retained placenta are higher in developing and underdeveloped countries with inadequate facilities to handle high risk cases. In this report, we present a case of retained placenta with its management in rural part of Indonesia.

CASE PRESENTATION

A 42-year-old woman came to Manufui Primary Health Center, South Timor Tengah accompanied by her family with complaints of bleeding continuously after giving birth at home delivered by a shaman 4 hours before admitted. The family said after the baby was delivered the placenta had not come out. This woman was previously referred to the hospital with a diagnosis of G4P3A0 with advanced maternal age and moderate anemia (hemoglobin 8 gr/dl). But the patient and her family refused to be referred and preferred to deliver the baby at home with a shaman. On examination, the state of consciousness was somnolent and general condition seemed seriously ill. Blood pressure was 60/30 mmHg, pulse 135 beats per minute (bpm), breathing 27 bpm, temperature 36.8°C, and SpO2 96% room air. Both eye conjunctiva was anemic, lips were pale, obstetric examination revealed palpable uterus with adequate contraction, active vaginal bleeding, cold acral, and capillary refill time > 2 seconds, and total blood loss around 950 ml (measured from 7 cloths used by the family to collect blood). The initial management of shock and postpartum hemorrhage was given immediately. Reposition (Trendelenburg position) and insertion of two large bore intravenous line with Ringer Lactate (RL) that drops quickly, Oxygen 4 liter per minute with nasal canula, and Foley catheter was done simultaneously.

After seeing improvement in patient's vital sign and general condition, active management of the 3rd stage of labor was carried out and because retained placenta appeared to be the main cause of continued heavy bleeding, manual removal of placenta (MROP) was performed immediately to control the bleeding with additional oxytocin 20 international unit (IU) in RL administered intravenously. Anesthesia nor analgesia cannot be administered because of limited resources at the facility. Two grams of ampicillin was also injected intravenously for prophylaxis. Upon manual extraction it was found that half of the placenta was removed but the other half still adhered strongly to the fundus. This was made difficult because the cervix was already half closed. After the placenta was successfully expelled, the bleeding stops, and observation continues until the patient is stable enough to be referred to the hospital 5 hours away. Tranexamic acid was not administered because it was unavailable at the facility. Latest Hb examination using the Sahli method as the only examination tool available at the facility showed the result of 5 mg/dl before the patient was referred.

Table 1. The Patient Lab Result on Arrival at The Hospital

Parameters	Result	Reference Value
Hemoglobin	5.3 g/dL	11.7–16.2 g/dL
Hematocrit	15 %	35–45 %
Leukocytes	22.7 × 10^3/µL	4.5–11 × 10^3/µL
Platelets	62 × 10^3/µL	150–450 × 10^3/µL
Erythrocytes	1.9 × 10^6/µL	4.1–5.1 × 10^6/µL
MCV	81 µm³	80–96 µm³
MCH	28 pg	28–33 pg
MCHC	35 g/dL	33–36 g/dL
Neutrophils	80 %	55–80 %
Lymphocytes	15 %	22–44 %
Monocytes	5 %	0–7 %
Eosinophils	0 %	0–4 %
Basophils	0 %	0–2 %

On arrival at the hospital, the physical examination revealed stable vital signs without vaginal bleeding with a half-closed cervix. Blood tests revealed the following result: hemoglobin (Hb) 5.3 g/dL, platelet count 62.000/µL, white blood count 22.700/µL, and a normal coagulation profile. The patient received 3 bags of packed red cells by family donors because there's no blood bank in the area for massive transfusion protocols, 1 gram of ampicillin every 6 hours for infection prophylaxis, and finally tubal ligation as long-term contraception. The patient was discharged with a stable condition with a final Hb of 8.2 g/dL, platelet count 261.000/µL, and white blood count 18.900/µL with oral antibiotics.

Table 2. The Patient Lab Result on Discharge

Parameters	Result	Reference Value
Hemoglobin	8.2 g/dL	11.7–16.2 g/dL
Hematocrit	24 %	35–45 %
Leukocytes	18.9 × 10^3/µL	4.5–11 × 10^3/µL
Platelets	261 × 10^3/µL	150–450 × 10^3/µL
Erythrocytes	3.0 × 10^6/µL	4.1–5.1 × 10^6/µL
MCV	81 µm³	80–96 µm³
MCH	28 pg	28–33 pg
MCHC	34 g/dL	33–36 g/dL
Neutrophils	87 %	55–80 %
Lymphocytes	11 %	22–44 %
Monocytes	2 %	0–7 %
Eosinophils	0 %	0–4 %
Basophils	0 %	0–2 %

DISCUSSION

Retained placenta was diagnosed clinically when the placenta was not expelled spontaneously within 30 minutes after delivering the baby.[1,8] Risk factors include poor uterine contraction (high parity or prolonged used of oxytocin), Abnormal placentation (history of uterine surgery or IVF conception or placenta previa diagnosed during pregnancy), preterm delivery, congenital uterine anomaly, prior history of retained placenta, and advanced maternal age. Third stage labor longer than 18 minutes also associated with greater risk of postpartum haemorrhage.[6,9] The risk factor found in this case was advanced maternal age (42 years old) and prolonged 3rd stage labor (4 hours). In women with advanced maternal age, there is a progressive decrease in the endometrium cells, thus to be able to meet the fetus nutritional need, the placenta will expand its implantation which then result in a more adhesive placenta which called placenta

accrete spectrum (PAS).[1,7] Research done by Alessandro Favilli showed the relationship between old age, high parity, and retained placenta can be explained by the substitution of myometrial fibers by fibrous tissue which then predisposing to uterine atony.[7] Prolonged 3rd stage labor without an active management done to the patient and the possibility of wrong kind of traction done by the shaman caused the uncontrolled bleeding occurring

Retained placenta has 3 probable pathophysiology, which are : an atonic uterus that prevent normal separation and expulsion of the placenta, an abnormally adherent placenta (placenta accrete spectrum), and a trapped placenta due to closure of the cervix prior to delivery of placenta or full bladder.[10,11] Abnormally adherent placenta cause by placenta accrete spectrum seems to be the pathophysiology in this case due to the patient's advanced maternal age. But to be able to really establish the diagnosis of abnormally adherent placenta, it requires further examination in an adequate facility. And also manual removal that's been done to the patient, can extorts the evidence significantly.[1,8,12–14]

The initial management of PPH was prompt diagnosis of the underlying cause(s) and rapid resuscitation of blood loss volume with shock index as an accurate indicator of hypovolemia. [1,15,16] With normal score os 0.5 to 0.7 and values greater than 0.9 are considered critical and get higher risk of mortality.[17] In this case the patient shock index was 1.8 on arrival and was resuscitated immediately with crystalloid solution, oxygen, and catheter to monitor organ perfusion and emptied the bladder for a possible cause of the placenta not coming out because the bladder is full. After the shock was resolved and there was improvement on general condition, active management of 3rd stage labor was given. Full exploration of the birth canal was done simultaneously to look for the etiology. Adequate fundal contraction and no laceration on exploration exclude uterine atony nor trauma as the etiology. Thus, MROP was done because there's still ongoing bleeding with the placenta still has not come out even after additional 20 IU oxytocin was given. MROP has been recommended for managing RP regardless of hemorrhage or retention etiology, and it is the first recommended action for retained placenta associated with PPH.[18] On manual removal, half separated placenta seemed to be the cause of heavy bleeding in the patient because the other half of the placenta was still strongly adhered to the fundus and it was complicated by the cervix being half closed. MROP is an invasive procedure and requires adequate anesthesia and analgesia for sedation and pain control.[19] In this case both anesthesia nor analgesia can't be administered because it was unavailable at primary facility like Puskesmas especially in rural areas. After MROP successfully done the bleeding stop altogether. Oxytocin was still given continuously after the placenta is removed.[6,15] Antibiotics were given during MROP to prevent infection, thus two grams of ampicillin was administered afterward.[6,15] When the patient was stable enough she was transferred to the hospital for further management.

Placenta complications like placenta previa and post-partum hemorrhage are the indications for transfusion in obstetrics especially for those who has Hb concentration below 7 g/dl and several trials showed the benefit for severe ill patients with septic shock and hypovolemic shock.[20] Massive transfusion protocols are commonly describe as large volume of blood products over a brief period to a patient with uncontrolled or severe hemorrhage, transfusion more than 10 RBC units within 24 hours, transfusion more than 4 RBC units in 1 hour with anticipation of continued need for blood, replacement of more than 50% of total blood products within 3 hours. In this case, the lab result on arrival showed gravis anemia in the patient with Hb of 5gr/dl but major protocol transfusion cannot be done due to limited blood availability in the area. Normal

coagulation profile rules out coagulation disorders as the cause nor effect of PPH. Thus this patient only got 3 bags of packed red cells given by family donation with continuous ampicillin injection as infection prophylaxis, and finally a tubal ligation since the patient showed no desire to preserve fertility.[20]

CONCLUSION

Post-partum hemorrhage is still the main cause of maternal death with retained placenta being one of the most common etiologies of post-partum hemorrhage. For this reason, better prevention, management, and good cooperation from various sectors are seriously needed to be able to reduce the number of incidents, especially in areas that have limited facilities.

Declaration by Authors

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