

Case Report

Multidisciplinary Management of Placenta Accreta Spectrum in a Rural Indonesian Hospital

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Abstract

Objective: To present a case of Placenta Accreta Spectrum (PAS) managed in a rural setting and discuss the challenges associated with diagnosis, multidisciplinary management, and limited access to specialized referral services.

Methods: Case report. We report a case of PAS managed in a resource-limited rural hospital at Siloam Hospitals Labuan Bajo, West Manggarai, Indonesia.

Results: A 34-year-old multigravida with no antenatal care was diagnosed at 34 weeks' gestation with placenta previa accreta and a singleton pregnancy. She had a history of one previous cesarean section and was admitted with antepartum hemorrhage. A planned referral to a specialized PAS center in Surabaya was interrupted by recurrent bleeding leading to hemorrhagic shock. An emergency cesarean section followed by hysterectomy was performed by a coordinated multidisciplinary team involving obstetrics-gynecology, surgery, urology, and anesthesiology-intensive care. The estimated blood loss was approximately 2000 mL. Both maternal and neonatal outcomes were favorable, with postoperative stabilization and no immediate complications. Histopathological confirmation was not performed due to limited facilities.

Conclusion: Management of PAS in rural areas remains challenging because of limited access to early diagnosis, specialized referral centers, multidisciplinary teams, and blood bank services. This case highlights the importance of early recognition and multidisciplinary readiness to achieve favorable outcomes in low-resource settings.

Keywords: antepartum hemorrhage, case report, multidisciplinary management, placenta accreta spectrum, rural settings.

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INTRODUCTION

Placenta Accreta Spectrum (PAS) disorder refers to a group of abnormal placentation conditions in which trophoblastic tissue invades a defective area of the uterine myometrium.¹ Based on the depth of villous invasion on pathological examination, PAS is classified into placenta accreta, increta, and percreta. The incidence of PAS has increased worldwide in parallel with rising cesarean section rates. A 20-year study

conducted by Wu et al. in the United States reported an incidence of placenta accreta of 1 in 533 deliveries.^{2,3} In Indonesia, a study conducted in Surabaya from January 2013 to October 2018 identified 156 cases of PAS, accounting for approximately 4% of total deliveries.⁴ In addition to previous cesarean delivery, other risk factors for PAS include dilation and curettage, hysteroscopy, and other uterine procedures that result in scarring of the lower uterine segment. When PAS is not diagnosed antenatally, abnormal placental

attachment may lead to massive obstetric hemorrhage and complex surgical procedures requiring a multidisciplinary team, with significant maternal morbidity and mortality.⁵⁻⁷

Accurate antenatal assessment and timely diagnosis of PAS, combined with effective coordination of a multidisciplinary team, can improve maternal and neonatal outcomes. This is particularly important in rural areas, where access to subspecialists and 24-hour blood bank services is often limited.⁸ This case report describes the diagnostic and surgical challenges of managing Placenta Accreta Spectrum in a rural hospital setting. The patient was diagnosed upon admission due to antepartum hemorrhage without prior antenatal care and was successfully managed despite limited resources, highlighting the importance of early recognition and multidisciplinary readiness in low-resource settings.

CASE

A 34-year-old multigravida (G4P2A1) at an estimated gestational age of 32–33 weeks from a rural area presented to the Emergency Department of Siloam Hospitals Labuan Bajo with vaginal bleeding that began four hours prior to admission. She reported no uterine contractions, rupture of membranes, or abdominal pain. Her obstetric history included one emergency cesarean section during her third pregnancy due to fetal distress two years earlier. The patient had not received antenatal care during the current pregnancy.

On admission, the patient was hemodynamically stable. Obstetric examination revealed a fundal height of 23 cm, with the fetus in transverse lie and a normal fetal heart rate. Residual vaginal bleeding was noted without active hemorrhage. Initial laboratory findings are summarized in Table 1. Ultrasonography demonstrated a single live intrauterine fetus with appropriate growth and adequate amniotic fluid. The placenta completely covered the cervical os and showed features suggestive of Placenta Accreta Spectrum (PAS), including thinning of the lower uterine segment myometrium, multiple placental lacunae, and bridging vessels toward the urinary bladder (Figure 1).

After stabilization of the initial bleeding episode, a decision was made to refer the patient to a PAS referral center in Surabaya. While preparing for referral, conservative management was initiated, including antenatal corticosteroids for fetal lung maturation, tocolytic therapy, prophylactic antibiotics, and antifibrinolytic therapy. Details of medications and dosing are provided in Table 1.

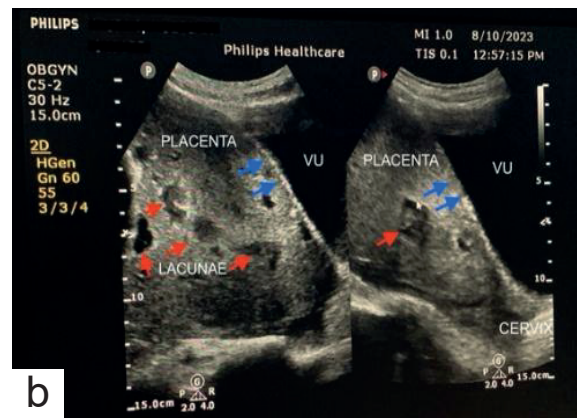
Approximately 10 hours after admission, the patient experienced sudden recurrent massive vaginal bleeding and rapidly developed hemorrhagic shock. Emergency cesarean section was performed immediately by a multidisciplinary team consisting of an obstetrician, general surgeon, urologist, and anesthesiologist-intensivist. Preoperative laboratory deterioration and transfusion requirements are outlined in Table 1.

Under general anesthesia, a transverse fundal uterine incision was made, and a live female neonate was delivered and admitted to the neonatal intensive care unit for prematurity observation. The placenta failed to separate spontaneously and was left in situ after clamping of the umbilical cord (Figure 2). Dense adhesions between the lower uterine segment and urinary bladder were identified and carefully dissected before proceeding with peripartum hysterectomy. Intraoperative blood loss and transfusion details are summarized in Table 1.

Postoperatively, the patient was managed in the intensive care unit for four days until hemodynamic stabilization and was subsequently transferred to the general ward. Due to limited facilities, histopathological examination was not performed. The patient was discharged on postoperative day six in good condition. Written informed consent for publication was obtained from the patient and her family.

Table 1. Timeline of Clinical Course, Management, and Outcomes

Time Point	Clinical Findings	Investigations	Management / Intervention	Outcome
Admission (0 h)	Vaginal bleeding (~1 cup), no contractions, vital signs stable	Hb 11.3 g/dL; Hct 33.6%; WBC 9,610/mm ³ ; platelets 278,000/mm ³ ; PT 9.7 s; INR 0.93; aPTT 24.8 s	Observation and stabilization	Bleeding controlled
Initial assessment	Fetus in transverse lie; FHR 156 beats/min	Ultrasound: placenta previa with thin myometrium, multiple lacunae, bridging vessels	Diagnosis of placenta previa accreta	Planned referral
Pre-referral period	Controlled antepartum hemorrhage	-	Dexamethasone 6 mg IM every 12 h; nifedipine 10 mg orally every 8 h; cefotaxime 1 g IV every 8 h; tranexamic acid 500 mg IV every 8 h	Maternal and fetal condition stable
10 h after admission	Recurrent massive bleeding; hemorrhagic shock (BP 40/20 mmHg, HR 145 beats/min)	Estimated blood loss ~1,000 mL; Hb 7.8 g/dL	Decision for emergency surgery	Hemodynamic instability
Intraoperative	Placenta failed to separate; adhesion to urinary bladder	-	Emergency cesarean section via fundal incision; placenta left in situ; peripartum hysterectomy; adhesiolysis	Intraoperative blood loss ~1,000 mL
Transfusion	Significant blood loss	-	2 units PRC intraoperatively; 2 units PRC postoperatively	Hemodynamic stabilization
Neonatal outcome	Female neonate, birth weight 2,187 g	Apgar score 4/9 (1/5 min)	NICU admission for prematurity observation	Good clinical progress
Postoperative period	ICU stay for 4 days	Hb 14 g/dL; Hct 40.3%; WBC 23,740/mm ³ ; platelets 213,000/mm ³	Monitoring and supportive care	Stable condition
Discharge	No complications	-	Discharged on postoperative day 6	Favorable maternal outcome



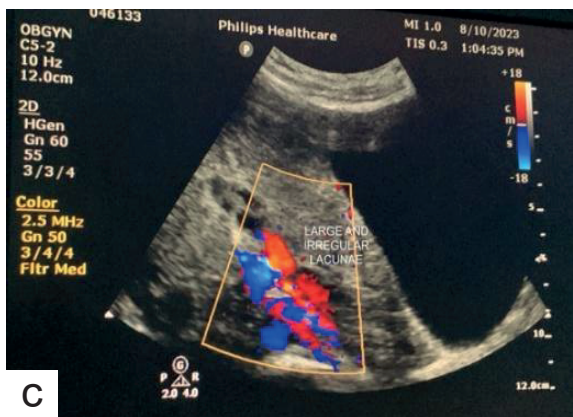


Figure 1. Ultrasound examination showed placenta previa accreta. (a) Appropriate fetal biometrics for 34-35 WGA, (b) Multiple placental lacunae [red arrows], thin and irregular uterine wall, and loss of the retroplacental zone [blue arrows], (c) Large and irregular lacunae shown in color Doppler ultrasound view

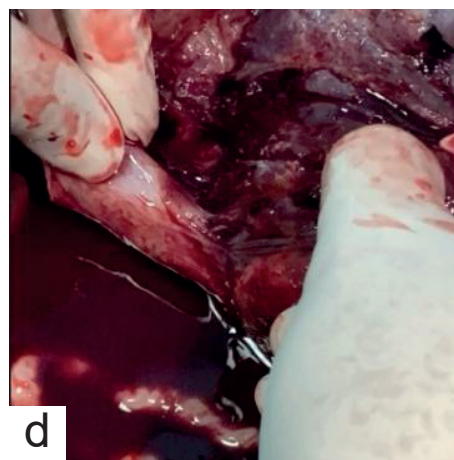
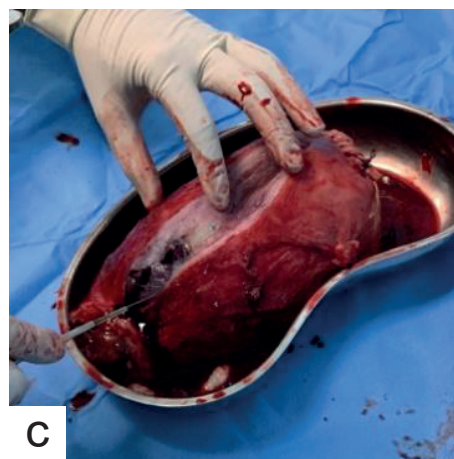
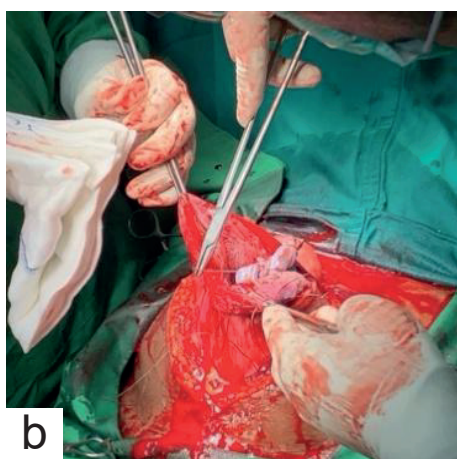
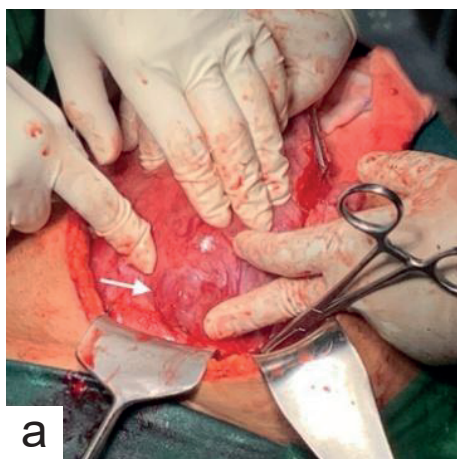


Figure 2. Postoperative findings. (a) The lower segment of the uterus showed a bluish protrusion accompanied by fine neovascularization near the bladder. (b) The placenta was left in situ then the incision was closed (c) Macroscopic view of the uterus post hysterectomy (d) The adherent placenta inside the uterine wall.



DISCUSSION

Placenta Accreta Spectrum (PAS) is an increasingly encountered obstetric condition, largely driven by the rising global rate of cesarean deliveries.^{5,9} While PAS has been extensively reported from tertiary referral centers in Indonesia, published data from rural eastern regions remain limited. To our knowledge, no previous PAS case reports from East Nusa Tenggara have been identified in the literature. This case therefore provides important clinical insight into the diagnostic and management challenges of PAS in a geographically remote setting with limited access to subspecialty care. Currently, Indonesia has only two designated PAS referral centers, located in Jakarta and Surabaya, making timely referral from distant provinces logistically challenging.^{3,4,10}

Early antenatal identification of PAS is essential to reduce maternal morbidity and mortality. Ultrasonography remains the primary diagnostic modality, particularly in patients with known risk factors such as prior cesarean delivery.^{3,11-13} In the present case, PAS was suspected upon admission based on characteristic sonographic findings despite the absence of antenatal care. The ultrasound examination demonstrated grade 3 placental lacunae, marked thinning of the myometrium of the lower uterine segment (< 1 mm), loss of the retroplacental clear zone, and bridging vessels extending toward the urinary bladder. These findings, together with the patient's obstetric history, resulted in a Placenta Accreta Index score of 6, corresponding to an estimated 83% probability of placental invasion. This objective risk stratification was instrumental in raising early suspicion of PAS and guiding surgical preparedness when referral became unfeasible.^{3,10,12,14-18}

Massive obstetric hemorrhage remains the principal cause of maternal morbidity and mortality in PAS.^{19,20} When severe bleeding occurs, peripartum hysterectomy is widely accepted as the definitive and life-saving management. In this case, recurrent antepartum hemorrhage rapidly progressed to hemorrhagic shock, necessitating immediate surgical intervention. The involvement of a multidisciplinary team including obstetrics and gynecology, general surgery, urology, anesthesiology, and intensive care was critical to achieving a favorable maternal and neonatal outcome.^{5,21-23} Similar findings have been reported in low- and middle-income countries, where unexpectedly diagnosed PAS is associated with increased blood loss, higher rates of emergency hysterectomy, and greater maternal morbidity, underscoring the importance of multidisciplinary readiness when transfer to a specialized center is not possible.^{3,8,10}

Although conservative, uterine-sparing approaches may be considered in selected patients with stable hemodynamic status and a strong desire for fertility preservation, such strategies were inappropriate in this case. Hemodynamic instability, placenta previa, and extensive placental invasion necessitated a definitive surgical approach. The decision to perform a fundal uterine incision, avoid placental removal, and proceed directly to hysterectomy is consistent with current international recommendations aimed at minimizing catastrophic hemorrhage in PAS.^{10,23,24}

This case also highlights systemic limitations commonly encountered in rural healthcare settings, including the absence of interventional radiology services, limited blood bank capacity, lack of neonatology subspecialty support, and unavailability of histopathological confirmation. These constraints mirror challenges reported in other low-resource settings, where delayed diagnosis and limited infrastructure contribute to adverse maternal outcomes.¹⁰ Strengthening antenatal screening, improving blood bank preparedness, expanding teleconsultation with PAS referral centers, and establishing regional PAS data registries may improve future outcomes for patients in rural Indonesia.

CONCLUSION

This case demonstrates that timely, coordinated multidisciplinary management can achieve favorable maternal and neonatal outcomes in PAS, even in a rural hospital with limited resources. Diagnostic challenges, delayed presentation, and the absence of subspecialty services required rapid clinical decision-making and surgical readiness. Early ultrasound-based risk stratification and strengthened referral networks are essential to reduce morbidity and mortality from PAS in resource-limited regions.

CONFLICT of INTEREST

All authors declares no conflict of interest.

ACKNOWLEDGEMENT

We would like to express our gratitude to the medical team and staff at the healthcare facility in East Nusa Tenggara for their unwavering dedication and support throughout this case. Special thanks to the obstetrician-gynecologists who managed the patient's care despite the limited resources available in this rural setting. We also acknowledge the efforts of the multidisciplinary team, including the general surgeons, urologists, anesthesiologists-intensivists, and pediatricians, who contributed to the successful management of this case. Finally, we would like to thank the patient and her family for their cooperation and trust during this challenging time. Their resilience and strength were vital to the successful outcome of this case.

FUNDING SOURCES

None.

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