CASE REPORT

Maternal outcome in accreta cases. Conservative surgery and hysterectomy in Cipto Mangunkusumo Hospital, Jakarta, Indonesia, from January 2017 to January 2018

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ABSTRACT

Objectives: To report maternal outcome based on surgical technique on the management of accreta. The study was conducted in Cipto Mangunkusumo Hospital, Jakarta, Indonesia from January 2017 to January 2018.

Case Report: There were 1609 cases of pregnant women delivered during the study period. From these, the prevalence of previous caesarean section was 73 cases, including 20 cases of accreta. Total maternal mortality for 1 year in Cipto Mangunkusumo Hospital, Jakarta, Indonesia, was 11, and accreta contributed 3 cases. We reported 20 cases of accreta in pregnancy The maternal outcomes, including bladder injury, duration of operation, intraoperative bleeding, length of hospitalization, and mortality, were evaluated. From 20 cases, 8 patients had one previous caesarean history, 11 had second previous caesarean section, while 2 patient had third previous caesarean section history. Of women with placenta accreta, about 7 patients (35%) had delivery in fullterm pregnancies, while 13 (65%) had delivery in preterm pregnancy. Surgical technique in accreta management mostly was hysterectomy to override bleeding complication along the delivery. From 20 cases, 16 caesarean sections were followed-up with hysterectomy. Four cases were with conservative management. From all the hysterectomy performed, four were complicated with bladder injury. The mean intraoperative bleeding was 600 - 5500 cc of blood, while the mean of post-operative transfusion was 1000 -3000 cc. There were 2 maternal deaths in this study. Thirteen patients were admitted to the ICU after the procedure.

Conclusion: Accreta increases morbidity due to massive bleeding. It is important to have algorithm for managing abnormal implantation of the placenta. Our cases revealed no significant results of maternal outcome between conservative surgery and conventional hysterectomy in managing accreta cases in Cipto Mangunkusumo Hospital, Jakarta, Indonesia.

Keywords: accreta; maternal outcome; conservative management; surgery in accreta; maternal health

ABSTRAK

Tujuan: Melaporkan luaran maternal berdasarkan teknik pembedahan pada manajemen akreta. Penelitian dilakukan di Rumah Sakit Cipto Mangunkusumo, Jakarta, Indonesia, dari Januari 2017 hingga Januari 2018.

Laporan Kasus: Terdapat 1609 kasus ibu hamil yang melahirkan selama masa penelitian. Dari jumlah tersebut, prevalensi C-section sebelumnya adalah 73 kasus, termasuk 20 kasus akreta. Total kematian ibu selama 1 tahun di RS Cipto Mangunkusumo adalah 11, dan akreta menyumbang 3 kasus. Kami melaporkan 20 kasus akreta pada kehamilan dan mengevaluasi hasil ibu, termasuk cedera kandung kemih, durasi operasi, perdarahan intraoperatif, lama rawat inap, dan kematian. Dari 20 kasus, 8 pasien memiliki riwayat operasi caesar sebelumnya, 11 pasien memiliki riwayat operasi caesar kedua, sedangkan 2 pasien memiliki riwayat operasi caesar ketiga sebelumnya. Dari ibu dengan plasenta akreta, sekitar 7 pasien (35%) melahirkan pada kehamilan penuh, sementara 13 (65%) melahirkan pada kehamilan prematur. Teknik pembedahan dalam manajemen akreta sebagian besar adalah histerektomi untuk mengesampingkan komplikasi perdarahan selama persalinan. Dari 20 kasus, 16 operasi caesar dilanjutkan dengan histerektomi, dan empat kasus dengan manajemen konservatif. Dari semua histerektomi yang dilakukan, empat di antaranya dengan komplikasi cedera kandung kemih. Rerata perdarahan intraoperatif adalah 600 - 5500 cc darah, sedangkan rerata transfusi pascaoperasi adalah 1000 - 3000 cc. Terdapat 2 kematian ibu dalam penelitian ini. Tiga belas pasien dirawat di ICU setelah prosedur.

Simpulan: Akreta meningkatkan morbiditas akibat perdarahan masif. Algoritma untuk mengelola implantasi abnormal plasenta penting untuk dimiliki. Kasus ini tidak menunjukan hasil maternal yang signifikan antara operasi konservatif dan histerektomi konvensional dalam penanganan kasus akreta di Rumah Sakit Cipto Mangunkusumo, Jakarta, Indonesia.

Kata kunci: akreta; hasil ibu; manajemen konservatif; operasi accreta; kesehatan ibu

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INTRODUCTION

The incidence of placenta accreta has increased and seems to parallel the increasing cesarean delivery rate. A morbidly adherent placenta includes placenta accreta, increta and percreta as it penetrates through the basal decidua into and then through the myometrium.[1] Although placenta accreta is uncommon (0.004%) in women with a normally situated placenta, it occurred in 9.3% of women with placenta praevia according to data from many studies. It was estimated that by 2020 ceserean delivery rate in US may approach 56.2%, resulting annually in an additional 6236 placenta previas, 4504 placenta accretes, 130 maternal deaths.[1]

Advance planning should be made for management of delivery. Delivery of the baby by caesarean section in the presence of a suspected placenta praevia-accreta should be considered by opening the uterus at a site away from the placenta, and delivering the baby without disturbing the implantation site, in order to enable conservative management of the placenta or elective hysterectomy. Entering the uterus through the placenta in order to achieve delivery is associated with more bleeding and a high chance of hysterectomy. Some studies have described successful conservative management of placenta accreta that can preserve fertility. If the placenta separates, the placenta needs to be delivered if it begins to separate.[1] Any haemorrhage that follows needs to be managed in the normal way. If the placenta partially separates, the separated portion(s) should be delivered and any haemorrhage that occurs should be dealt with. Adherent segments can be left in place, but blood loss in such circumstances can be large and the management of massive haemorrhage should follow without delay. The woman should be warned of the risks of bleeding and infection postoperatively and monitored, even until admission to ICU room after procedure should be mentioned to the patient before operation. Prophylactic antibiotics may be useful in the immediate postpartum period to reduce this risk.[1-5]

CASE REPORT

We presented 20 cases of accreta in pregnancy in Cipto Mangunkusumo Hospital, Jakarta, Indonesia, with either conservative or hysterectomy management that correlated to maternal outcome as can be seen in Table 1.

Table 1 shows early morbidity for women with antenatally suspected placenta accreta according to various management strategies. Although composite morbidity did not differ between women undergoing conservative and hysterectomy procedure, there were differences in >3000 cc volume of intraoperative bleeding (0% versus 25%), bladder injury (0 versus 25%), length of surgery of > 3 hours (0 versus 31.2%), ICU admission (15% versus 50%), and maternal mortality (0 versus 12.5%). Prophylactic hypogastric artery ligation did not reduce the mean blood loss or the need for large volume of blood transfusion, between women who did and did not undergo the procedure on the conservative management.

Table 2. Patients' characteristics

Characteristics	N	%
Previous c-section		
1x	9	45%
2x	9	45%
3x	3	15%
PAI		
>6	4	20%
≤5	3	15%
Time of delivery		
Elective	14	70%
Emergency	6	30%
Surgical techniques		
Conservative	3	15%
Hysterectomy	17	85%

From 20 cases we had, about 8 patients had one previous caesarean history, 11 had second previous caesarean section, while 2 patients had third previous caesarean section history. Of women with placenta accreta, about 7 patients (35%) had delivery in fullterm pregnancies, while 13 patients (65%) had delivery in preterm pregnancy.

Surgical technique in the management of accreta cases is mostly by hysterectomy to override bleeding complication along the delivery. From 20 cases, there were 16 caesarean sections that continued with hysterectomy, and four cases with conservative management. From all hysterectomy performed, four cases were complicated with bladder injury. The mean of intraoperative bleeding was 600 - 8000 cc of blood. There were 2 maternal deaths in this study and 13 patients were admitted to ICU after procedure.

Table 1. Early morbidity in women with antenatal suspected placenta accreta according to various management strategies

No	PAI	Obstetric status	Prior C-section	Surgical techniques	Intraoperative bleeding (cc)	Complications	Uterine hemostasis	Length of operation and stay	ICU admission
1	2.5	G4P2A1 36 wga	1x	Hysterectomy	1000	-	-	2 hours, 3 days	Ward
2	3.5	G3P1A1 35wga	1x	Hysterectomy	1500	-	-	2 hours, 3 days	Ward
3	7	G3P2 38 wga	2x	Hysterectomy	1000	-	-	2 hours, 3 days	Ward
4	6.5	G4P3 27 wga	3x	SC+ uterine incision	1800	-	Hypogastric artery ligation	2.5 hours,4 days	HCU
5	3.5	G8P5A2 33 wga	1x	Hysterectomy	2200	-	Hypogastric artery ligation	2 hours, 4 days	ICU
6	2.5	G2P1 38 wga	1x	SC+ uterine incision	1000	-	Hypogastric artery ligation	3 hours, 4 days	HCU
7	5.25	G3P2 33 wga	1x	Hysterectomy	5000	Died	Torniquet	4 hours, 2 days	ICU
8	6.5	G3P2 26-27 wga	2x	Hysterectomy	2500	Bladder injury	Local pressure	5 hours,6 days	ICU
9	5	G3P1A1 38 wga	1x	Hysterectomy	3500	-	Hypogastric artery ligation	3 hours,5 days	ICU
10	8.5	G3P2 36-37 wga	2x	Hysterectomy	5500	Bladder injury	Hypogastric artery ligation	5 hours,7 days	ICU
11	6.5	G3P2 37-38 wga	2x	Hysteroography+ hypogastric artery ligation	1000	-	Hypogastric artery ligation	2 hours,4 days	HCU
12	9	G4P2A1 34 wga	2x	Hysterectomy	1000	-	-	2 hours,3 days	Ward
13	9	P2 post SC	1x	Hysterectomy	1000	-	-	2 hours, 5 days	ICU
14	9	G3P2 36 wga	2x	Hysterectomy	1800	Bladder injury	-	4 hours, 8 days	ICU
15	4.5	G3P2 37 wga	2x	Hysterectomy	1000		-	3 hours, 4 days	HCU
16	6.5	G3P2 29-30 wga	2x	Hysterectomy	8000	Bladder injury Died	Hypogastric artery ligation	5 hours, 1 day	ICU
17	5.5	G3P2 32 wga	1x	Hysterectomy	1100	-	-	3 hours, 4 days	ICU
18	5.5	G3P2 24 wga	2x	Hysterectomy Methotrexate	600	-	Baloon tampon	2 hours, 3 days	Ward
19	4.5	G4P3 37 wga	3x	Hysterectomy	1200	-	-	2 hours, 3 days	Ward
20	2.5	G2P1 37 wga	1x	Hysterectomy	950		Torniquet	2 hours, 3 days	Ward

From this data it was apparent that the prevalence of pregnant women with previous C-section with accreta in this study was 0.012% and total number of the pregnant mothers who came with previous history within this period was 73 cases and the prevalence of pregnant women with accreta in this study was 0.27%.

Conservative management of the accreta cases

Figure 1. Both hypogastric arteries were identified, sutured and ligated. The placenta was put back into the uterine cavity, and the incision was sutured. One hour after the baby was born, uterine contraction was fine, and the mother was had stable hemodynamic. The suture was reopened, and the placenta was born completely. Uerine resection was performed in the haematoma area of 1 x 4 cm.

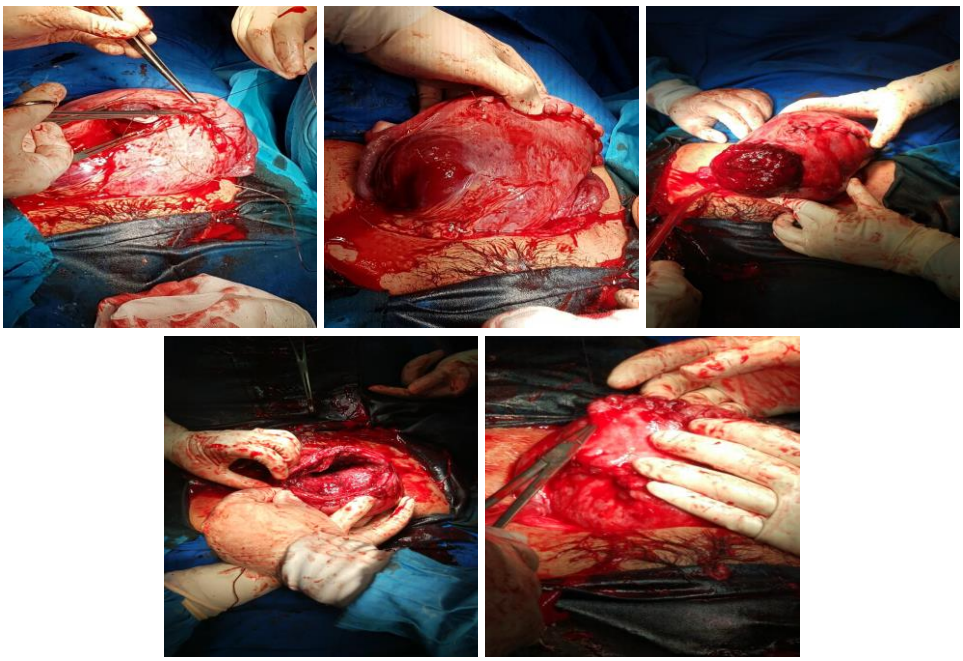

Figure 2. The umbilical cord was clamped. The placenta was put back into the uterine cavity, and the uterotonics was given. Uterine incision was hemostatic sutured using Chromic no 1, and the placenta was waited to detach spontaneously. During observation, uterine contraction was good. Uterine wall was ruptured spontaneously at the site of the placenta. Hysterorhaphy was performed on ruptured uterine wall and cesarean incision using PGA no 1.

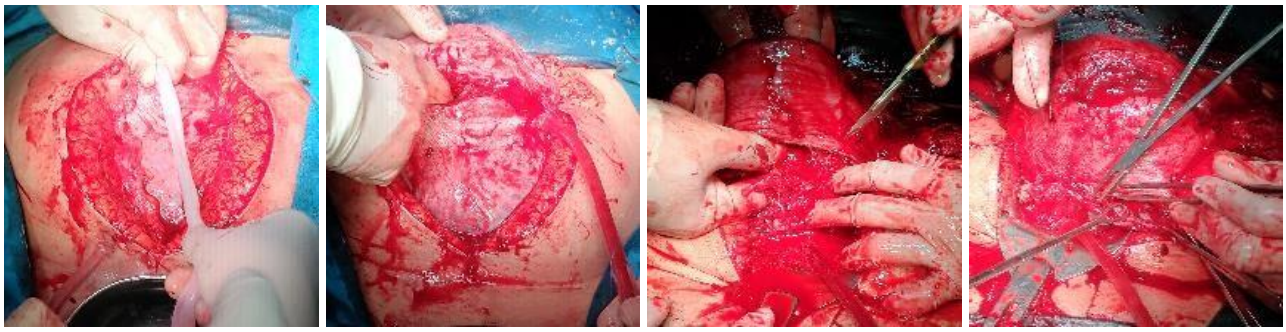

Figure 3. The umbilical cord was clamped. The placenta was left with minimal handling. Uterine incision was sutured with Chromic no. 1, and both hypogastric arteries were identified and suture-ligated. The uterine incision was re-opened. By gentle cord traction, the placenta was born partially. Resection was performed on the suspected accreta site. Hemostasis was achieved and histeroraphy was performed.

Figure 4. The placenta was born by manual extraction. Some parts of the placenta were adhered (2 x 1 cm). The balloon catheter was placed in the cave, and suturing was performed at the incision. The patient was given with methotrexate at the outpatient clinic.

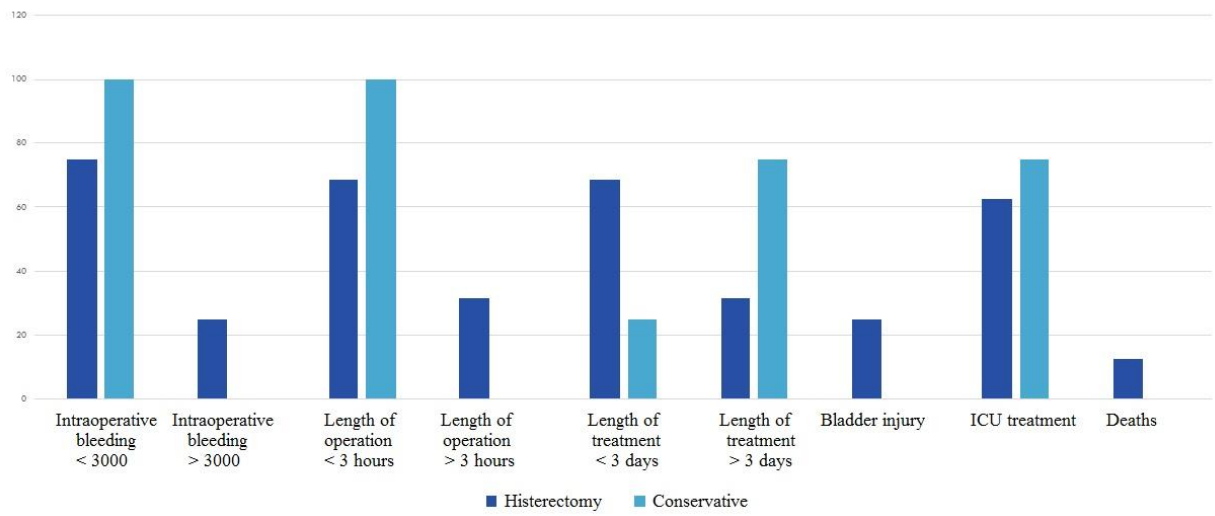

Figure 5. The outcome of the placenta accreta cases.

DISCUSSION

Placenta accreta is associated with considerable maternal morbidity including large volume of blood transfusion, peripartum hysterectomy, cystotomy, intensive care unit (ICU) admission, infection, and prolonged hospitalisation. Major risk factors include placenta praevia and prior caesarean delivery.[5,6]

Among women who were already hospitalised at the time of emergency delivery for vaginal bleeding, 41% experienced early morbidity. In contrast, among women who presented to the hospital with bleeding severe enough to prompt emergency delivery, 60% experienced early morbidity. Although not statistically significant because of small sample size, the results of this study suggested that inpatient management might be protective in some cases for women with suspected placental accreta.[6,7]

Delivery planning (the value of ultrasound)

Delivery planning may involve an anesthesiologist, obstetrician, pelvic surgeon such as a gynecologic oncologist, intensivist, maternal fetal medicine specialist, neonatologist, urologist, hematologist, and interventional radiologist to optimize the patient's outcome. Because of the risk of massive blood loss, attention should be paid to maternal hemoglobin levels in advance of surgery, if possible.[6-8]

The timing of delivery in cases of suspected placenta accreta must be individualized. This decision should be made jointly with the patient, obstetrician, and neonatologist. Patient counseling should include discussion of the potential need for hysterectomy, the risks of profuse hemorrhage, and possible maternal death.[9-11] A guiding principle in the management is to achieve a planned delivery because data suggest greater blood loss and complications in emergent cesarean hysterectomy versus planned cesarean hysterectomy. Although a planned delivery is the goal, a contingency plan for emergency delivery should be developed for each patient, which may include following an institutional protocol for maternal hemorrhage management.[12,13]

Surgical approach or methotrexate

Whereas hysterectomy is performed in the usual fashion, dissection of the bladder flap may be performed relatively late, after vascular control of the uterine arteries is achieved, in cases of anterior accreta, depending on intraoperative findings. Occasionally, a subtotal hysterectomy can be safely performed, but persistent bleeding from the cervix may preclude this approach and make total hysterectomy necessary. For conservative management with part of the placenta remains in the uetrus, we can consider to use methotrexate therapy.[14,15]

CONCLUSION

Accreta causes severe bleeding, which worsens morbidity. It is critical to have a plan in place for dealing with faulty placenta implantation. In our cases at Cipto Mangunkusumo Hospital in Jakarta, Indonesia, there were no significant differences in maternal outcomes between conservative surgery and standard hysterectomy in the management of accreta patients.

REFERENCES

1. Arias F, Bhide A, Arulkumaran S, et al. Arias' Practical Guide to High-Risk Pregnancy and Delivery. A South Asian perspective. Chapter 10. 5th edition. Elsevier India; 2019. p. 158.
2. Soyer P, Morel O, Fargeaudou Y, et al. Value of pelvic embolization in the management of severe postpartum hemorrhage due to placenta accreta, increta or percreta. Eur J Radiol. 2011;80(3):729-35. doi: 10.1016/j.ejrad.2010.07.018. Epub 2010 Aug 12. PMID: 20708361.
3. Grace Tan SE, Jobling TW, Wallace EM, et al. Surgical management of placenta accreta: a 10-year experience. Acta Obstet Gynecol Scand. 2013;92(4):445-50. doi: 10.1111/aogs.12075. Epub 2013 Jan 24. PMID: 23311505.
4. Fitzpatrick KE, Sellers S, Spark P, et al. The management and outcomes of placenta accrete, increta and percreta in the UK: a population-based descriptive study. BJOG 2014;121:62–71.
5. Wortman AC, Alexander JM. Placenta accreta, increta, and percreta. Obstet Gynecol Clin North Am. 2013;40(1):137-54. doi: 10.1016/j.ogc.2012.12.002. PMID: 23466142.
6. Marcellin L, Delorme P, Bonnet MP, et al. Placenta percreta is associated with more frequent severe maternal morbidity than placenta accreta. Am J Obstet Gynecol. 2018;219(2):193.e1-193.e9. doi: 10.1097/01.aoa.000557683.60967.2c. Epub 2018 May 5. PMID: 29733839.
7. Duzyj CM, Cooper A, Mhatre M, et al. Placenta accreta: A spectrum of predictable risk, diagnosis, and morbidity. Am J Perinatol. 2019;36(10):1031-1038. doi: 10.1055/s-0038-1676111. Epub 2018 Nov 30. PMID: 30500963.
8. Tikkanen M, Paavonen J, Loukovaara M, Stefanovic V. Antenatal diagnosis of placenta accreta leads to reduced blood loss. Acta Obstet

Gynecol Scand. 2011;90(10):1140-6. doi: 10.1111/j.1600-0412.2011.01147.x. Epub 2011 May 25. PMID: 21488840.
9. Erfani H, Fox KA, Clark SL, et al. Maternal outcomes in unexpected placenta accreta spectrum disorders: single-center experience with a multidisciplinary team. Am J Obstet Gynecol. 2019;221(4):337.e1-337.e5. doi: 10.1016/j.ajog.2019.05.035. Epub 2019 Jun 4. PMID: 31173748.
10. Shamshirsaz AA, Fox KA, Erfani H, Clark SL, et al. Multidisciplinary team learning in the management of the morbidly adherent placenta: outcome improvements over time. Am J Obstet Gynecol. 2017;216(6):612.e1-612.e5. doi: 10.1097/01.aoa.0000527039.52821.28. Epub 2017 Feb 16. PMID: 28213059.
11. Durukan H, Durukan ÖB, Yazıcı FG. Planned versus urgent deliveries in placenta previa: maternal, surgical and neonatal results. Arch Gynecol Obstet. 2019;300(6):1541-1549. doi: 10.1007/s00404-019-05349-9. Epub 2019 Oct 26. PMID: 31655886.
12. Jauniaux E, Bhide A. Prenatal ultrasound diagnosis and outcome of placenta previa accreta after cesarean delivery: a systematic review and meta-analysis. Am J Obstet Gynecol. 2017;217(1):27-36. doi: 10.1016/j.ajog.2017.02.050. Epub 2017 Mar 6. PMID: 28268196.
13. Peng X, Chen D, Xu J, et al. Parallel transverse uterine incisions, a novel approach for managing heavy hemorrhage and preserving the uterus: A retrospective cohort study for patients with anterior placenta previa and accreta. Medicine (Baltimore). 2019;98(44):e17742. doi: 10.1097/MD.0000000000017742. PMID: 31689824; PMCID: PMC6946211.
14. Matsubara S, Takahashi H, Takei Y, Imai Y. Methotrexate for placenta accreta spectrum disorders: Is it needed? J Clin Pharm Ther. 2020 Apr;45(2):399-400. doi: 10.1111/jcpt.13120. Epub 2020 Feb 5. PMID: 32023348.
15. Lin K, Qin J, Xu K, et al. Methotrexate management for placenta accreta: a prospective study. Arch Gynecol Obstet. 2015;291(6):1259-64. doi: 10.1007/s00404-014-3573-1. Epub 2014 Dec 11. PMID: 25501835.