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Original Research Article

Peripartum hysterectomy for cesarean section with morbidly adherent placenta: case series of 25 patients

Abdulrahman M. Rageh, Mohamed Khalaf, Ahmed M. Abbas*, Hossam T. Salem

Department of Obstetrics and Gynecology, Faculty of Medicine, Assiut University, Egypt

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***Correspondence:**

Dr. Ahmed M. Abbas,

E-mail: bmr90@hotmail.com

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ABSTRACT

Background: The current paper reports the outcome of case series of patients presented with placenta accreta confirmed histopathologically after management by peripartum hysterectomy.

Methods: The study was set in Women's Health Hospital, Assiut University, Egypt. This was a case series of 25 women presented with placenta accreta between May 2017 and April 2018. We included all pregnant women with placenta previa as diagnosed by ultrasound with suspicion of abnormal placentation by Doppler, confirmed intra-operatively undergoing either emergent or elective CS. All cases were performed by an expert team of obstetricians and anesthetists. Cesarean delivery was done under general anesthesia through pfannenstiel incision. The primary outcome was the estimated intra-operative blood loss through assessment of amount of blood in the suction by ml, difference between the weight of surgical drapes and towels before and after operation.

Results: Pre-operative Hb was 10.64 ± 1.01 gm/dL and there was significant decline in the postoperative Hb reaching 8.36 ± 1.21 gm/dL ($p < 0.001$). The mean drop in Hb was 2.28 ± 1.43 gm/dL. Estimated intra-operative blood loss was 974.4 ± 398.05 ml in the towels and 847.6 ± 362.56 ml in the suction apparatus. The total blood loss was 1822 ± 653.73 ml. The mean number of units of whole blood transfused was 2160.0 ± 825.6 ml and fresh frozen plasma was 1010.0 ± 349.7 ml. Regarding intra-operative complications, bladder injury was the most common one in 14 cases (56%), followed by ureteric injury in two cases (8%). Postoperative ICU admission was in 6 cases (24%) and the mean duration of hospital stay 12.44 ± 4.07 days. No cases of maternal mortality.

Conclusions: In conclusion, peripartum hysterectomy is considered life-saving surgery in patients with placenta accreta.

Keywords: Hysterectomy, Morbid adherent placenta, Placenta accreta

INTRODUCTION

Invasive placentation (placenta accreta, increta, and percreta) is a serious and increasingly frequent complication of pregnancy, characterized by an excessive penetration of the placenta into or through the myometrium.¹

Three variants of morbidly adherent placenta are recognized: placenta accreta, in which placental villi invade the surface of the myometrium; placenta increta,

in which placental villi extend into the myometrium; and placenta percreta, where the villi penetrate through the myometrium to the uterine serosa and may invade adjacent organs, such as the bladder.^{2,3} In some rare instances, the placenta could invade beyond the abdominal viscera and reach to the anterior abdominal wall.⁴

In a clinical setting and daily practice, these histopathological differences are probably non-existent. The incidence of invasive placentation is approximately 1

in 2500 pregnancies in the 1980s, 1 in 535 in 2002, and 1 in 210 in 2006; this increasing figure is mainly attributed to the increasing rate of caesarean section in the last few decades.⁵

The major risk factor is placenta previa with a previous cesarean section delivery. Among women with placenta previa, the incidence of placenta accrete is nearly 10%, which rises to 40% in women who have an anterior (or central) previa and 2 previous cesarean deliveries.⁶ Placenta accreta is considered a severe pregnancy complication that may be associated with massive and potentially life-threatening intrapartum and postpartum hemorrhage.⁷ Life-threatening bleeding is the most common complication to be associated with this condition; the average blood loss at time of delivery is reported to be 3000-5500 mL, which leads to significant postoperative morbidity and death.^{8,9}

In several recent studies invasive placentation has replaced uterine atony as the leading indication for peripartum hysterectomy.¹⁰⁻¹² It has become the leading cause of emergent hysterectomy. Maternal morbidity had been reported to occur in up to 60% and mortality in up to 7% of women with placenta accreta. Traditionally, placenta accreta was a surprise diagnosis is made intra-operatively and resulting in difficult and often complicated surgery. Recently, improvements in both ultrasound and magnetic resonance imaging technology have allowed antenatal diagnosis and preoperative planning.^{13,14}

The traditional treatment for invasive placentation confirmed intra-operatively is Caesarean hysterectomy.⁵ According to Bretelle and colleagues (2007), hysterectomy was reported in 40% of women with placenta accreta.¹⁵ The figure was even much higher in a study held by Armstrong et al who reported hysterectomy in 91% of cases with placenta accreta.¹⁶

Drawbacks of hysterectomy are not restricted to infertility and psychological impact but also involve a higher risk of surgical morbidities. Case reports and small series have suggested use of several interventions, including uterine packing, intrauterine balloon inflation, combined surgical steps for bleeding control, over sewing of the placental bed, uterine and internal iliac artery ligation, selective arterial embolization, and intraoperative internal iliac balloon inflation. All aiming to reduce blood loss, morbidity, and mortality.^{17,18,19}

The current paper reports the outcome of case series of patients presented with placenta accreta confirmed histopathologically after management by peripartum hysterectomy.

METHODS

This was a case series of 25 women presented with placenta accreta between May 2017 and April 2018 in

Women's Health Hospital at Assiut University, Egypt. All patients signed an informed consent form submitted for approval from Assiut Medical School Ethical Review Board.

We included all pregnant women with placenta previa as diagnosed by ultrasound with suspicion of abnormal placentation by Doppler, confirmed intra-operatively undergoing either emergent or elective CS.

All women were counseled about surgical choices for placenta accreta with emphasis on the following points: preservation of fertility and complication of hysterectomy. Preoperative preparation included collaboration and discussion of the cases with the placenta accreta team including anesthetist, urologist, vascular surgeon and interventional radiologist. Preoperative investigations included complete blood count, hepatitis markers, blood grouping, Rh type, prothrombin concentration were performed for all included patients. Cross matched blood was ready, at least four units of whole blood or packed RBCs and the blood bank was notified before the operation to be ready for supply by other units if needed

All cases were performed by an expert team of obstetricians and anesthetists. Cesarean delivery was done under general anesthesia through pfannensteil incision.

The primary outcome was the estimated intra-operative blood loss through assessment of amount of blood in the suction by ml, difference between the weight of surgical drapes and towels before and after operation. The secondary outcomes were the difference in Hb level pre- and 24h postoperative, number of blood units transfused: Fresh blood, packed RBCs, FFP, duration of operation: from skin incision till the last suture, the rate of adjacent organs injury: bladder, ureters, bowel injury and the duration of hospitalization: time from start of operation till discharge from hospital.

Statistical analysis

Data were processed using Statistical Package of Social Sciences version 22.0 (SPSSversion 22.0 Inc., Chicago, IL, USA). Quantitative data were expressed as means \pm standard deviation (SD) as appropriate.

RESULTS

The mean age of the study participants was 34.33 \pm 4.85 years, the mean BMI was 26.03 \pm 1.55 kg/m², the mean parity was 4.00 \pm 1.68 (range 2-10), the mean number of previous CS was 2.64 \pm 1.22 and the mean gestational age at inclusion 37.24 \pm 2.30 weeks (Table 1).

Pre-operative Hb was 10.64 \pm 1.01 gm/dL. Platelet count was 204.84 \pm 40.96 X10⁶ /mm³. On the other hand, there was significant decline in the postoperative Hb reaching

8.36±1.21 gm/dL ($p<0.001$) while no difference in the post-operative platelet count 194.56±67.54 X10⁶ /mm³. The mean drop in Hb was 2.28±1.43gm/dL.

Estimated intra-operative blood loss was 974.4±398.05 ml in the towels and 847.6±362.56 ml in the suction apparatus. The total blood loss was 1822±653.73 ml. The mean number of units of whole blood transfused was 2160.0±825.6 ml and fresh frozen plasma was 1010.0±349.7 ml.

Regarding intra-operative complications, bladder injury was the most common one in 14 cases (56%), followed by ureteric injury in two cases (8%). Postoperative ICU admission was in 6 cases (24%) and the mean duration of hospital stay 12.44±4.07 days. No cases of maternal mortality.

Table 1: Baseline characteristics of the study participants.

Variables	Mean±SD
Age (years)	34.33 ± 4.85
BMI (Kg/m ²)	26.03 ± 1.55
Parity	4.00 ± 1.68
Previous CS:	2.64 ± 1.22
Gestational age (weeks)	37.24 ± 2.30
Hb level (gm/dL)	10.64± 1.01

DISCUSSION

Maternal and fetal morbidity and mortality from placenta previa and placenta accreta is still a challenge to the obstetricians. Cesarean hysterectomy is still the most life-saving measure for management of these cases.

Our hospital is the largest tertiary care hospital in Upper Egypt. It is considered as a referral center of all difficult cases from our governorate and the nearby ones. Previous study in our hospital reported the incidence of placenta accreta was 19.2% among those with placenta previa and an overall incidence of 0.4% among all deliveries.²⁰ In another study placenta accreta constitutes 21.9% of all peripartum hysterectomies performed in our hospital.²¹ These figures reflect the high magnitude of placenta accreta problems in our locality, therefore careful management of those cases is mandatory.

Peripartum hysterectomy is a major surgery that has many reproductive and psychological consequences especially with loss of fertility. Although the most common indications of peripartum hysterectomy were atonic postpartum hemorrhage and rupture uterus, the rising incidence of placenta accreta increased the indications of hysterectomy especially with development of more conservative surgical techniques of the formal two indications.²²⁻²⁵

Placenta previa is commonly associated with placenta accreta. Most of conservative lines of management are

successful in cases of placenta previa non-accreta.²⁶⁻²⁸ But, these lines are less effective if compared with previous reports in cases of placenta accreta. In some cases, vascular ligation of the major pelvic vessels in cases of intraoperative hemorrhage with morbidly adherent placenta or uterine atony can end with uterine ischemia and progress to gangrene.²⁹

Morbidly adherent placenta could be presented as early in the first trimester of pregnancy with severe life-threatening intra-peritoneal hemorrhage due to vascular erosion or uterine rupture.³⁰ This condition could be easily misdiagnosed as rupture scarred uterus, ruptured rudimentary horn or disturbed ectopic pregnancy.³¹⁻³⁴ In these cases conservative techniques could be successfully applied without the need for hysterectomy.

In present study bladder injury was occurred in 14 cases (56%). Additionally, ureteric injury occurred in two cases (8%). This is considered a high rate of complications, but it can be attributed to the difficulty of hysterectomy in cases of placenta accreta due to presence of bleeding from sites near to the cervix. Therefore, hysterectomy was performed totally in most of cases and this increase the risk of urological injuries in cases of unsatisfactory dissection of the bladder before proceeding to hysterectomy. These results were coincided with Alanwar et al, 2018 who reported 21.7% bladder injuries and 4.7% ureteric injuries during CS with morbid adherence placenta.³⁵

Although the last report of maternal mortality ratio in our hospital was high; 180/100, 000 women, no cases of mortality in our series.³⁶ This could be related to the rapid decision of performing hysterectomy without increased blood loss and increased rate of complications.

CONCLUSION

In conclusion, peripartum hysterectomy is considered life-saving surgery in patients with placenta accreta.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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