Original Article

Management and Outcomes in Pregnant Women having Placenta Previa and Placenta Accreta Spectrum Disorders

Placenta Previa and Placenta Accreta Spectrum Disorders

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ABSTRACT

Objective: To characterize the obstetrical management and maternal outcomes in a series of women presenting with placenta previa and placenta accrete spectrum disorders in pregnancy.

Study Design: Prospective case series

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynaecology, Shaikh Zayed Hospital, Lahore from January 2018 to December 2020 for a period of one year.

Materials and Methods: Twenty-five women age between 27-39 years who were prenatally diagnosed with placenta previa with placenta accreta spectrum disorders through ultrasound and/or magnetic resonance imaging were included. All patients underwent caesarean hysterectomy. The hospital stay, post-operative maternal and neonatal outcomes were recorded.

Results: The mean age was 34.9±5.1 years and mean gestational age at delivery was 36.3±1.3 weeks. The average blood loss in women was 3.5 litres. All women had placenta previa but 12 had placenta accreta while rest had placenta increta and percreta. Two previous caesarean histories were noticed in 82.04% and of ≥3 in 5.30% patients.

Conclusion: Massive blood loss, caesarean hysterectomy and pre-term delivery were evident outcomes of placenta previa with placenta accreta spectrum disorder. The incidence of prior caesarean sections was high among these patients.

Key Words: Cesarean deliveries, Placenta previa, Placenta accrete spectrum, Caesarean hysterectomy

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INTRODUCTION

Placenta accreta spectrum (PAS) is a heterogeneous condition which is associated with increased morbidity and requires challenges in early diagnosis as well as management. In PAS placenta is invaded in the uterus making it un detachable from uterus and resulting in life threatening massive bleeding if forcefully removed.[1,2] Globally ascending caesarean trend is increasing the incidence of PAS.[3,4] The absence of standardized high quality diagnostic tools results in its poor management and understanding. Maternal as well as neonatal life can be saved by high quality imaging and diagnosis of PAS.[5]

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Other reason which results in PAS could include placental removal by manual method, uterine-curettage or due to endometritis.[6]

The overall incidence of PAS is around 1 in 2000 gestational woman, however this can vary among different races and countries depending upon their delivery practices and number of caesarean performed. In developing countries here birth rate is much higher the problem seems to be aggravated.[4,7] Placenta previa is a situation in which placenta is located and covers the cervix. This could also be a major cause for PAS. Additional factors which increase PAS risk are advanced maternal age, in vitro fertilization and PAS history in previous gestation.[8,9]

In a mega research at united states of America it was observed that the prevalence of PAS increased in women with placenta previa by 3%, with one caesarean, 11% with second caesarean, 40% with third caesarean, 61% with fourth caesarean and 67% with fifth or greater than fifth caesarean respectively. The incidence of placenta previa is reported in almost half of PAS cases.[10-14] The present study was designed to categorize PAS management strategies and determine the outcome success with given management in women having placenta previa in addition to PAS.

MATERIALS AND METHODS

It was a prospective case series which was conducted at Department of Obstetrics & Gynecology, Shaikh Zayed Hospital Lahore from 1st January 2018 to 31st December 2020. After a formal written informed consent, the study included 25 women who were prenatally diagnosed either clinically or through sonography/imaging (ultrasound and/or magnetic resonance) with placenta previa with placenta accreta spectrum disorders. Histopathological reports assisted in identifying PAS cases. Those women who were diagnosed incidentally during a caesarean section or those with a false-positive ultrasound (USG) report of a morbidly adherent placenta: which were not seen intraoperatively and planned in exclusion criteria. Obstetric data was retrieved from medical records. The complete demographic and clinical features results were documented on a well-structured questionnaire. The histopathological depth of invasion was recorded. The gestational period was dated by last menstruation period (LMP) assessing length of crown rump earlier than 14 weeks. Estimated weight of foetus and referral percentiles calculation was performed by measuring abdominal circumference. Transvaginal USG was performed for defining placenta as placenta previa. All the study participants underwent planned caesarean hysterectomy in a well-equipped tertiary care hospital, as the uterus could not be salvaged due to the severe invasiveness of the placenta and the massive postpartum haemorrhage.

Data was analyzed by using Chi square and t test tools for qualitative and quantitative variables using SPSS version 24. P value below 0.05 was considered significant.

RESULTS

The mean age of women was 34.9±5.1 years with mean gestational age at delivery as 36.3±1.3 weeks (Table 1).

The average blood loss in women was 3.5 litters and all the patients received 4-6 units of packed RBG intraoperatively. There was one exception – a woman with one previous caesarean had only a litter of blood lost, and so she was transfused with one unit of blood only. None of the patients died with only one (4%) patient who was in ICU after surgery for 42 days and suffered from disseminated intravascular coagulation acute, renal failure, septicemia and pneumonia with psychosis was also discharged after complete recovery. Bladder was not separate able in 5 patients and required inverdent cystotomy (Fig. 1).

Out of the total cases there were 82.04% such women who had two cesarean or C-sections while only 5.30% had more than 3 C-sections clinical history p value <0.05 (Fig. 2).

There were 48% PAS with accreta categorization and 52% women had placenta increta or percreta. The mean age, gestation age at delivery and foetus birth weight was insignificantly different between adherent and invasive PAS cases (Table 2).

Table No.1: Clinical features of placenta previa and placenta accrete spectrum

Variables	PP+PAS
Mean age (years)	34.9±5.1
Parity	2.5±3.0
Gestational age(weeks) at delivery	36.3±1.3
Birth weight>90th percentile	4 (16%)
Birth weight<10th percentile	5 (20%)

Table No.2: Comparison of clinical features of PAS severity categories

Variable	Placenta accrete spectrum (n=12)	Increta/ percreta (n=13)	P value
Mean age (years)	35.0±4.8	34.9±5.5	0.92
Parity	2.3±2.0	2.8±4.0	0.07
Gestation age (weeks) at delivery	36.5±1.4	36.1±1.2	0.81
Birth weight >90th percentile	2 (16.6%)	3 (23.07%)	0.82
Birth weight<10th percentile	2 (16.6%)	3 (23.07%)	0.84

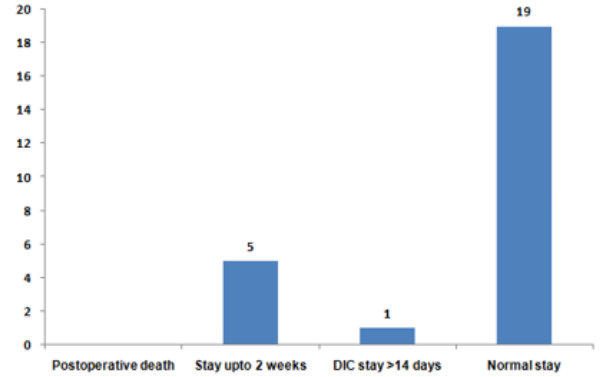

Figure No.1: Frequency of morbidity and hospital stay among PP and PAS cases

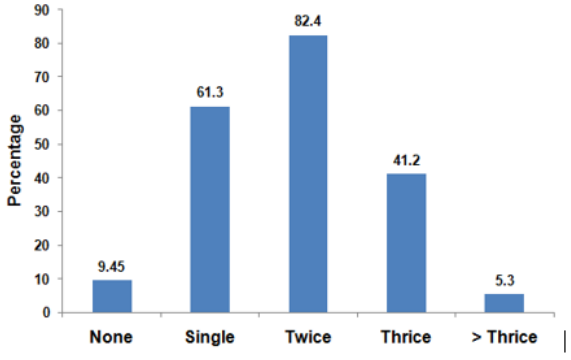

Figure No.2: Frequency of caesarean in PAS cases

DISCUSSION

In the current study, women with placenta previa (in the present pregnancy) and prior caesarean section(s) were at higher risk of placenta accreta spectrum (PAS) disorders. These life-threatening complications result into severe peripartum haemorrhage in women as is evident from present study. In pregnant women, placenta accreta spectrum is considered as the most common reason of caesarean hysterectomy and also the prevalent cause of catastrophic blood loss. The average blood loss in such cases is between 3000-5000 ml and 13% of the females have a blood loss of ≥10,000 ml.[15] Present study reports an average blood loss of ~3500 ml and 3-4 packed red blood cells transfusion per patient. The blood loss associated with placenta accreta spectrum disorder is in accordance with that of trauma surgery and requires proper management for effective treatment.[16]

Caesarean hysterectomy is an important measure for controlling blood loss during surgery. The hysterectomy should be attempted by placenta in situ.[17] Ureter, bladder or bowel may get injured during surgery, consequently, increasing the number of patients in intensive care unit and prolonged hospital stay. The rate of injury to urinary bladder or ureter ranges from 6 to 29% and 7% respectively during this procedure.[18] In cases where the placenta invades the bladder, partial cystectomy by a trained urologist can be a better choice in PAS cases.[19]

This study highlighted the major outcomes of placenta previa with placenta accreta spectrum as difficult and life-threatening delivery which escalates morbidity and mortality in mother and the baby. Pre-term labor, loss of fertility, low birth weight, admission to neonatal intensive care unit are some of the major outcomes of placenta previa with PAS requiring critical care management.[20]

The PAS care bundle comprised of consultant obstetrician, anaesthesiologist, neonataologist, vascular surgeon, urologist, haematologist and well equipped blood bank. Due to limited resources we have omitted interventional radiology from this care bundle.

CONCLUSION

Placenta previa in addition to placenta accreta requires standardized management by a multidisciplinary team in a tertiary care hospital. Higher incidence of caesarean sections and placenta previa increases the chances of placenta accreta spectrum disorder.

Author's Contribution:

Concept & Design of Study:	Amna Kazi
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Data Analysis:	Sana Danish, M. Ikram, Sara Munir
Revisiting Critically:	Amna Kazi, Jamshed Rahim
Final Approval of version:	Amna Kazi

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Jauniaux E, Collins S, Burton GJ. Placenta accreta spectrum: pathophysiology and evidence-based anatomy for prenatal ultrasound imaging. Am J Obstet Gynecol 2018;218(1):75-87.
2. Chantraine F, Braun T, Gonser M, Henrich W, Tutschek B. Prenatal diagnosis of abnormally invasive placenta reduces maternal peripartum hemorrhage and morbidity. Acta Obstetricia et Gynecologica Scandinavica 2013;92(4):439-44.
3. Jauniaux E, Chantraine F, Silver RM, Langhoff-Roos J. FIGO consensus guidelines on placenta accreta spectrum disorders: epidemiology. Int J Gynecol Obstet 2018;140(3):265-73.
4. Morlando M, Collins S. Placenta accreta spectrum disorders: challenges, risks, and management strategies. Int J Womens Health 2020;12:1033-45.
5. Shamshirsaz AA, Fox KA, Salmanian B, Diaz-Arrastia CR, Lee W, Baker BW, et al. Maternal morbidity in patients with morbidly adherent placenta treated with and without a standardized multidisciplinary approach.Am J Obstet Gynecol 2015; 212(2):218.e1-9.
6. Badr DA, Al Hassan J, Salem Wehbe G, Ramadan MK. Placenta - uterine body placenta accreta spectrum: a detailed literature review 2020;95:44-52.
7. Cheng KK, Lee MM. Rising incidence of morbidly adherent placenta and its association with previous caesarean section: a 15-year analysis in a tertiary hospital in Hong Kong. Hong Kong Med J 2015; 21(6): 511–7.
8. Modest AM, Toth TL, Johnson KM, Shainker SA. Placenta accreta spectrum: in vitro fertilization and non-in vitro fertilization and placenta accreta spectrum in a Massachusetts Cohort. Am J Perinatol 2020;5:s-0040-1713887.
9. Salmanian B, Fox KA, Arian SE, et al. In vitro fertilization as an independent risk factor for placenta accreta spectrum. Am J Obstet Gynecol 2020;11: 293-9.
10. Silver RM, Landon MB, Rouse DJ, et al. Maternal morbidity associated with multiple repeat cesarean deliveries. Obstet Gynecol 2006;107(6):1226-32.
11. Thurn L, Lindqvist PG, Jakobsson M, et al. Abnormally invasive placenta-prevalence, risk factors and antenatal suspicion: results from a large population-based pregnancy cohort study in the Nordic countries. BJOG 2016; 123(8):1348-55.
12. Reddy UM, Abuhamad AZ, Levine D, Saade GR; Fetal imaging workshop invited participants. fetal

imaging: executive summary of a joint Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, American Institute of Ultrasound in Medicine, American College of Obstetricians and Gynecologists, American College of Radiology, Society for Pediatric Radiology, and Society of Radiologists in Ultrasound Fetal Imaging Workshop. J Ultrasound Med 2014; 33: 745–57.

13. Collins SL, Ashcroft A, Braun T, Calda P, Langhoff-Ross J, Morel O Stefanovic V, et al. European Working Group on Abnormally Invasive Placenta (EW-AIP). Proposed for standardized ultrasound descriptions of abnormally invasive placenta (AIP). Ultrasound Obstet Gynecol 2016; 47: 271-5.
14. Nicolaides KH, Wright D, Syngelaki A, Wright A, Akolekar R. Fetal medicine foundation fetal and neonatal population weight charts. Ultrasound Obstet Gynecol 2018; 52: 44-51.
15. Wright J, Pri-Paz S, Herzog T, Shah M, Bonanno C, Lewin S, et al. Predictors of massive blood loss in women with placenta accreta. Obstetric Anesthesia Digest 2012;32: 115.
16. Snegovskikh D, Clebone A, Norwitz E. Anesthetic management of patients with placenta accreta and resuscitation strategies for associated massive hemorrhage. Curr Opinion Anaesthesiol 2011;24:274-81.
17. Tjokroprawiro BA. Caesarean hysterectomy in a patient with placenta accreta spectrum disorders. BMJ Case Reports 2021;14: e242044.
18. Eller AG, Bennett MA, Sharshiner M, et al. Maternal morbidity in cases of placenta accreta managed by a multidisciplinary care team compared with standard obstetric care. Obstet Gynecol 2011; 117: 331-7.
19. Shepherd AM, Mahdy H. Placenta accreta. Stat Pearls 2021.
20. Farquhar CM, Li Z, Lensen S, et al. Incidence, risk factors and perinatal outcomes for placenta accreta in Australia and NewZealand: a case control study. BMJ Open 2017;7: e017713.