Original Article

Comparison of diagnosis and management options for placenta accreta spectrum with standard guidelines

Nosheen Akhtar, Arifa Bari, Fatima Nazim, Zartaj Hayat

Department of Obstetrics and Gynecology, Fauji Foundation Hospital, Rawalpindi, Pakistan

Objective: To evaluate placenta accrete spectrum rate in women having previous cesarean deliveries and placenta previa major/low-lying anterior placentas.

Methodology: All pregnant women with previous cesarean section diagnosed as placenta previa major operated between Jan 2017 to July 2019 were included in the study. Data were collected from Medix [tm,] OT register and morbidity register.

Results: A total of 27 cases of previous cesarean section with major degree placenta previa were operated during the study period. Doppler ultrasound was performed in all cases. The diagnosis of placenta accreta spectrum was made in 63% (n=17) of cases. Out of 17 cases diagnosed with Doppler ultrasound, diagnosis was confirmed per operatively in 11(64.7%) cases. Out of 10 cases in which placenta accrete was ruled out by Doppler scan, one case of placenta accreta was found during cesarean section. The sensitivity of Doppler ultrasound was 91.6% while specificity was 56.2%. Significant morbidity was seen in all 12 case of placenta accreta. Cesarean hysterectomy was performed in 11 out of 12 cases (91%), while PPH and blood products transfusion were done in all 12 cases (100%). Bladder injury was seen in one case 11%.

Conclusion: Placenta accrete spectrum is associated with significant morbidity. However, the operative approach needs improvement to reduce the morbidity. As the cesarean section is the major risk factors for this devastating complication, the obstetricians must make every attempt to avoid unnecessary cesarean section. (Rawal Med J 202;45:813-816).

Keywords: Placenta accrete, caesarean section, placenta previa.

INTRODUCTION

Placenta accrete (PA) spectrum refers to all placenta that are morbidly adherent to uterus and it is a complication of cesarean delivery.[1] The other major risk factors for PA spectrum are previous history of accreta and any other uterine surgery.[2] Since there is a rise in cesarean section (CS) worldwide, which on one hand, has helped health care professionals to reduce maternal and perinatal mortality, but on the other hand has led to rising rate of PA in subsequent pregnancies.[3] Rise of CS rate, though in many case is justified yet some unethical practices occur in this scenario. The economic benefits, time management and risk minimizing behavior are the main drives for physician to opt for CS. The private practice is considered to be the window to the increased rates of CS being performed worldwide.[4]

Placenta accreta spectrum is a nightmare for the obstetricians. The need for blood transfusions, maneuvers like uterine or internal iliac artery ligation and hysterectomy are quite often. Advanced management options like uterine artery embolization and cell salvage technique are available in developed countries. The scenario is somewhat more complex in developing countries, like Pakistan. On one hand, we are lacking advanced care facilities and on the other hand CS is on a rise in our country. Many untrained professionals are doing CS without proper indications. In affluent society, although problems are less but CS due to maternal wish is becoming quite common. Because of this rise, more and more cases of PA are diagnosed and managed in our hospital, which is a tertiary care hospital with facilities of blood bank, radiological imaging and intensive care (ICU). The rationale behind this study was to evaluate our current practices regarding diagnosis and management of placenta

accreta and compare it with the latest available evidence-based approach.

METHODOLOGY

All pregnant patients who presented to our Department of obstetrics and gynecology, Fauji Foundation Hospital, Rawalpindi with history of previous CS and with a diagnosis of either PA major or anterior low-lying placenta in index pregnancy were included in the study from January 2017 to July 2019. The demographic data like maternal age, parity was recorded from Medix™. The number of previous CS was also recorded.

Doppler ultrasound was used as the modality of choice to rule out the antenatal diagnosis of morbid adherence of placenta. Confirmation of this antenatal diagnosis was done at the time of CS to find the sensitivity and specificity of the Doppler ultrasound alone. The complications like blood transfusion, need for hysterectomy, intensive unit care and bladder injury were noted and information was gathered from operation theater register and well-maintained maternal morbidity register.

Statistical Analysis: Data were analyzed using SPSS version 21. Frequency and percentages were computed for categorical variables.

RESULTS

Mean age of the 27 patients was 35.8 years. The mean gestation age for elective CS was 36±2 weeks. The diagnosis of PA spectrum was made in 17(63%) cases. Out of 17 cases diagnosed with Doppler ultrasound, diagnosis was confirmed per operatively in n=11 (64.7 %) cases. Out of ten cases in which PA was ruled out by Doppler scan, one case of PA was found peroperatively (10%). Sensitivity, specificity, positive predictive value and negative predictive value of Doppler scan are shown in Table 1.

Table 1. Sensitivity, Specificity, PPV, NPV of Doppler scan.

Sensitivity	91.6%
Specificity	56.2%
Positive predictive value	64.7 %
Negative predictive value	90%

Fig. Risk of accreta related to number of previous CS.

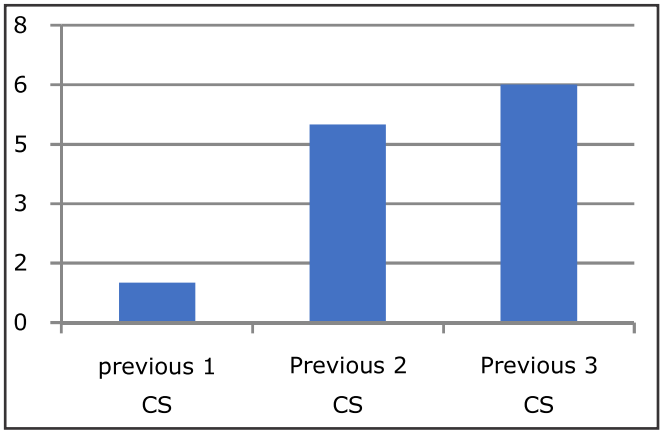

Table 2. Complications of placenta accreta spectrum.

Complication	Number	%age
Postpartum hemorrhage	12	100%
Blood transfusion	12	100%
Cesarean hysterectomy	11	91%
Bladder injury	1	8.3%

Emergency CS was performed in two (16.7%) cases of PA while remaining 10 cases (83.3 %) had elective CS. All cases both elective and emergency were performed by senior most consultants with an experience of >10 years in the field of obstetrics and gynecology. The number of previous CS in those diagnosed with PA spectrum are shown in the (Fig.). Complications of placenta accrete spectrum are shown in Table 2.

DISCUSSION

The overall incidence of PA in our study was 0.6%, while it is reported to be around 0.1 % and 0.09% in other studies.[5,6] In our study, the incidence of accrete in women with a history of previous CS was 44%. In another study conducted by Miller et al incidence of accreta among women with previous scar and placenta previa was 39%.[2] Mean age in our study was 35.8 years while in another study the mean age of women diagnosed with PA was 31.8±5.8.[7]

Grey scale ultrasound in combination with Doppler ultrasound is considered the standard first line modality in the diagnosis of PA.[8,9] The diagnostic value of Doppler scan in detecting abnormal placental invasion is comparable with that of MRI when ultrasound is performed by an expert. Hence,

our approach was in accordance with the standard guideline.[10] In a meta-analysis, the sensitivity and specificity of Doppler scan was described to be 90-97%.[11]

In another systematic review Doppler ultrasound, sensitivity and specificity for diagnosing PA spectrum was found to be 83% and 95%, respectively.[12] A 2017 systematic review and meta-analysis using the standardized ultrasound signs has shown that in women with placenta previa and history of prior CS, the performance of ultrasound for diagnosis of PA spectrum was even higher with a sensitivity of 97.0%.[13] These results are comparable to our study in terms of sensitivity but differ in term of specificity as specificity of Doppler scan in our study was quite lower than that described in these meta-analyses. In one study, the ultrasound feature of absence of retro placental zone had a sensitivity of 93%, specificity of 79% and positive predictive value of 78%.[14]

The administration of steroids for fetal lung maturity is known to reduce neonatal morbidity significantly so no perinatal morbidity was noted in our study.[15] In another study, CS were planned at 36 weeks after steroids, no significant neonatal morbidity observed.[16] In a study conducted by Eller et al the rate of massive PPH in women with accreta was found to be 55%, which is lower than that found in our study.[17] Similarly, in another study the rate of hysterectomy was 66% among women with accreta while it was 89% in our study.[18] In a 2017 systematic review and meta-analysis on the diagnosis and outcome of PA, an elective or emergency caesarean hysterectomy was performed in 89.7% cases, which is similar to that found in our study.[13]

Even the classical uterine incision avoiding placenta can cause significant hemorrhage as reported by a small case series in which the massive hemorrhage necessitating cesarean hysterectomy occurred in two out of three cases.[19] The significant hemorrhage can still be a problem owing to extensive blood supply to the area from aorta and abnormal placentation leading of increase VEGF secretion.[20] The ACOG recommends timely caesarean hysterectomy with the placenta left in situ as removal of PA is associated with significant hemorrhagic morbidity.[21] The US Society of Maternal-Fetal Medicine (SMFM) and FIGO expert panel suggested early hysterectomy in PA.[22] In one study by Kelekci et al eleven cases of PA spectrum were managed conservatively and they were successful in all cases.[23] Gupta et al reported 29 cases of PA spectrum by Multidisciplinary team approach, leaving placenta in situ and internal iliac artery embolization.[24]

CONCLUSION

Cesarean section being the major risk factors need to be kept in check by obstetrician and this can be done by regular audits. Need of time is that advanced techniques like embolization of vessels and cell salvage should be made available in tertiary care hospitals to optimize the management of this complicated obstetric scenario.

Author Contributions:
Conception and design: Arifa Bari, Fatima Nazim
Collection and assembly of data: Fatima Bari, Nosheen Akhtar
Analysis and interpretation of the data: Nosheen Akhtar, Arifa Bari
Drafting of the article: NosheenAkthar, Arifa Bari
Critical revision of the article for important intellectual content: Arifa Bari
Statistical expertise: Nosheen Akhtar
Final approval and guarantor of the article: Zertaj Hayat
Corresponding author email: Arifa Bari: arifabari@hotmail.com
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