

Fetomaternal Outcome and Management of Placenta Accreta Spectrum at Tertiary Care Centre

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Abstract: Introduction: Placenta accreta spectrum is a condition when part of the placenta or the entire placenta, invades and is inseparable from the uterine wall. In most of the cases, PAS is associated with serious fetomaternal complications including massive blood loss, urologic and bowel injuries, ICU admissions, re-exploration, DIC, increased rate of NICU admissions, sudden IUD and overall increased maternal and fetal morbidity and mortality. Aims & Objectives: To evaluate the demographic profile, management options and fetomaternal outcome in women with Placenta accreta spectrum at a tertiary care centre. Material And Methods: This was a prospective study which included 25 pregnant females with placenta previa and prior caesarean delivery in their third trimester. Data including demographic profile, risk factors and fetomaternal outcome was collected and statistically analysed to obtain the results. Results: Out of 25 cases, 12 were found to be in PAS group and remaining 13 represented the non-PAS group. In PAS group 6 patients underwent hysterectomy, had increased intraoperative blood loss > 2 litres, prolonged hospital stay, increased need of blood transfusions, Mortality among cases of placenta accreta was found to be 8.33%. NICU admission was required in 50% cases in PAS group out of which two died in early neonatal period. Conclusion: Placenta accreta is an obstetric emergency. Prenatal diagnosis is essential in planning the multidisciplinary approach in delivery to reduce the risk of possible fetomaternal complications.

Keywords: placenta accreta spectrum, obstetrical hemorrhage, fetomaternal complication, antenatal diagnosis, placenta previa.

1. Introduction

Obstetric haemorrhage is one of the leading causes of maternal morbidity and mortality especially in the developing countries. Placenta accreta spectrum is a general term that describes the clinical condition when part of the placenta or the entire placenta, invades and is inseparable from the uterine wall (1). It collectively includes placenta accreta, placenta increta and placenta percreta. Placenta accreta is the condition where placenta is attached or adherent to the uterine wall. In placenta increta, placenta is invading into the myometrium whereas placenta percreta describes invasion through the myometrium and serosa and occasionally, into the adjacent organs such as bladder. In most of the cases, PAS is associated with serious fetomaternal complications including massive blood loss, urologic and bowel injuries, ICU admissions, re-exploration, DIC, increased rate of NICU admissions, sudden IUD and overall increased maternal and fetal morbidity and mortality. The aim of this study was to evaluate the demographic profile, risk factors, management options and fetomaternal outcome in women with Placenta accreta spectrum at a tertiary care centre.

Aims & Objectives

To evaluate the demographic profile, management options and fetomaternal outcome in women with Placenta accreta spectrum at a tertiary care centre.

2. Material and Methods

This was a prospective study conducted in Department of Obstetrics and Gynecology, Dr S. N Medical College, Jodhpur from January 2021 to December 2021. The study included 25 pregnant females with placenta previa and prior caesarean delivery in their third trimester (> 28 weeks of gestation). Pregnant females with placenta previa with history of manual removal of placenta, Myomectomy, Asherman's syndrome or coagulation disorders, prepartum bleeding or fetal distress requiring immediate caesarean section before the enrolment of the women were excluded from the study. A thorough relevant history, general physical and obstetric examination performed. Routine antenatal blood, serum and urine investigations were also done. Transabdominal ultrasound was done using convex probe with frequency 2 to 5 Hz TAS machine - Alokaproound alpha 6, colour Doppler machine. The pregnant female was followed up till 37 weeks of gestation (asymptomatic) or till termination (symptomatic). The cases were confirmed as placenta accreta operatively (Caesarean) and / or by histopathological examination. Data including demographic profile, risk factors and fetomaternal outcome was collected and statistically analysed to obtain the results.

3. Results

In our study 25 pregnant females satisfying the eligibility criteria were enrolled. All of them had placenta previa and history of previous LSCS. In our study, the mean age in cases with placenta accreta was 30.75 4.45 years and without

placenta accreta was 29.38±3.39 years. Out of total 12 cases of placenta accreta, 11 (91.67%) were registered while 1 (8.33%) was not registered. Most of the cases with placenta accreta were booked to us at earlier gestation because of frequent bleeding episodes and earlier diagnosis as a case of placenta previa/accreta. 6 (50%) were Hindu while 6 (50%) were Muslim. In cases with placenta accreta, mean gravidity was 3.41±0.99 while in cases without placenta accreta it is 3.00±0.70 (p>0.05). All included women delivered at our hospital by caesarean section. 12 cases were found to be in PAS group (confirmed intraoperatively and/or histopathologically) and remaining 13 represented the non-PAS group. Out of the 12 females in PAS group 6 underwent hysterectomy and other 6 were managed conservatively. PAS was histopathologically confirmed in all 6 cases (PAS group) which was partial in pathology i. e., involving one or more placental cotyledons. Placenta accreta was shown in 10 cases and placenta percreta in 2 cases. Mean operative time (in minutes) in cases with placenta accreta was 88.33±31.57 (approx. 1.5 hours) while in cases without placenta accreta, it was 36.92±4.8. Mean value of blood loss in case with placenta accreta was found to be 1608.33±663.95 ml while in those without placenta accreta was 1000±369.68 mL (p - value <0.05, significant). Of 12

patients with placenta accreta, 2 (16.66%) had bladder injury/ involvement as there was placenta percreta with bladder invasion. Not a single patient without placenta accreta had bladder injury. In our study, mean units of packed red cell transfused in cases of placenta accreta was 2.25±1.91 while in cases without placenta accreta was 0.46±0.51. This concluded that requirement of packed red cell and other blood products increases in proportion to amount of blood loss which is excessive in cases of placenta accreta. In our study, in cases of placenta accreta, mean post-operative hospital stay (in days) were 10.64±2.80 days and in cases without accreta was 7.23±1.36 days (p<0.05, significant). Out of 12 cases of placenta accreta, 1 case could not be survived. Mortality among cases of placenta accreta was found to be 8.33%. The cause of death was massive haemorrhage leading to shock. In cases with placenta accreta, most common fetal presentation was breech (41.67%). Cases with and without placenta accreta, NICU admission was required in 50% v/s 15.38% babies. Most common reasons for NICU were found to be respiratory distress syndrome followed by sepsis, early neonatal complications and complications of prematurity out of which 2 died in early neonatal period.

Table 1: Distribution of Cases According to Maternal Outcomes

Maternal Outcomes	Intra operative Accreta		Total	pvalue
	Absent (n = 13)	Present (n = 12)		
A) Packed Red Cell (PRC)				
Mean ± SD	0.46±0.51	2.25±1.91	1.32±1.62	0.003
B) Post - operative Hospital Stay (in days)				
Mean ± SD	7.23±1.36	10.64±2.80	8.79±2.71	0.002
C) Maternal Deaths				
Yes	0 (0.00%)	1 (100.00%)	1 (100.00%)	0.48
No	13 (54.16%)	11 (45.83%)	24 (100.00%)	

Table 2: Distribution of Cases According to Intraoperative Findings

Intraoperative Findings	Intra operative Accreta		Total	pvalue
	Absent (n = 13)	Present (n = 12)		
A) Operative Time (minutes)				
Mean ± SD	36.92±4.8	88.33±31.57	61.6±33.99	0.0002
B) Approximate Blood Loss (mL)				
<2000	12 (60%)	8 (40%)	20 (100.00%)	0.251
2000 - 2999	1 (25%)	3 (75%)	4 (100.00%)	
3000 - 3499	0 (0.00%)	1 (100%)	1 (100.00%)	
>3500	0 (0.00%)	0 (0.00%)	-	
Mean ± SD	1000±369.68	1608.33±663.95	-	0.012
C) Bladder Injury/Involvement				
Yes	0 (0.00%)	2 (100%)	2 (100.00%)	0.22
No	13 (56.52%)	10 (43.48%)	23 (100.00%)	
D) Initial Conservative Management (Uterine Artery Ligation, Uterine Temponeade, Haemostatic Suture)				
No	6 (54.55%)	5 (45.45%)	11 (100.00%)	0.821
Yes	7 (50%)	7 (50%)	14 (100.00%)	
E) Hysterectomy				
Yes	0 (0.00%)	6 (100%)	6 (100.00%)	0.005
No	13 (68.42%)	6 (31.58%)	19 (100.00%)	

4. Discussion

Placenta accrete spectrum (PAS) is a very devastating complication of pregnancy. In our study, the mean age in cases with placenta accreta was 30.75 4.45 years this was comparable to the study by Aggarwal et al [2]. but lower

when compared to the study by Rizvi SM et al [3]. Out of total 12 cases of placenta accreta, 11 (91.67%) were registered while 1 (8.33%) was not registered. Mortality among cases of placenta accreta was found to be 8.33%. The cause of death was massive haemorrhage leading to shock. This was higher when compared to Malhotra et al (5%) [4] and comparatively very low when compared to Aggarwal et

al (30%) [2]. There was increased requirement of blood and blood products transfusion with mean units of packed red cell transfused in cases of placenta accreta was 2.25 ± 1.91 . In the study by Dwivedi S et al (2016) [5], blood transfusion was required in more than 80% cases of placenta accreta (at least one half required 4 or more units of packed red blood cells). There was prolonged hospital stay in PAS group with mean duration of 10.64 ± 2.80 days. In a study by Chaudhari HK et al (2017) [6], the average hospital stay for a woman diagnosed with morbidly adherent placenta was 27 days while in study by Samosir SM et al [7], it was 5 days. In accordance with Chou MM et al [8] 16.66% patients had intraoperative bladder injury with placenta accreta, as there was placenta percreta with bladder invasion. The management of PAS should always involve a multidisciplinary team including expert obstetrician who should also be expert in pelvic surgery, a urologist, consultant anaesthetist, an interventional radiologist, neonatologist, intensivist and staff from blood bank. There should always be an alert to the blood bank prior to operating PAS patients keeping in view the risk of massive intra - operative haemorrhage in these cases. A multi - disciplinary approach including careful planning of surgery, adequate timely transfusion of blood and blood products is the key for the successful outcome in patients with this precarious condition of PAS.

5. Conclusion

Placenta accreta spectrum is a leading cause of obstetric haemorrhage. Antenatal diagnosis of PAS is an important step for implementation of multi - disciplinary approach in the management of PAS, thereby, decreasing maternal and neonatal morbidity and mortality.

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