Int. J Med. Pharm. Res.
E-ISSN: 2958-3683 | **P-ISSN**: 2958-3675
Available on: https://ijmpr.in/

International Journal of
Medical and Pharmaceutical Research

ORGINAL ARTICLE OPEN ACCESS

Placenta Accrete Spectrum-Fetomaternal Outcome In A Tertiary Care Hospital Of Assam

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OPEN ACCESS

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Received: 25-06-2025
Accepted: 27-07-2025
Available Online: 17-08-2025

A B S T R A C T

Background: Placenta Accreta Spectrum (PAS) is a serious obstetrics condition in which the placenta abnormaly invades the uterine wall, extending partially or fully into the myometrium and sometimes up to the serosa. This abnormal implantation significantly increases the risk of complication for both the mother and the baby, including severe haemorrhage, the need for blood transfusion, and higher likelihood of requiring a hysterectomy at the time of delivery.

Objective: The objective of this study was to ascertain the clinical presentation and evaluate maternal and fetal outcome in cases of Placenta Accreta Spectrum managed at a tertiary care hospital.

Method: This prospective observational study included all patients presenting to the Antenatal Outpatient Department, Emergency Labour Room, High-Risk Pregnancy Room and Intensive care unit. Detailed history of current and previous pregnancies were recorded. Routine and general examinations were conducted and patient were followed until discharge.

Result: A total of 45 patient were diagnosed with PAS during this study period with an incidence of 0.28%. In the study incidence came out be 0.28%. Mean age of PAS was 30.6 +/-1.6. years. Major risk factors were placenta previa (80%) and history of previous LSCS (73.9%%) and Multiparity(93.3%). Among the three types(55.6%) patients had placenta accrete,(15.6%)had placenta increta and (28.9%) patients had placenta percreta. Major maternal complications seen in cases of PAS were bladder injury (6.7%). Intraoperative blood loss more than 1.5L was seen in (55.6%) and 2 patients required more than 5 units of Blood Transfusion. There was no mortality rate. Requirement of caesarean hysterectomy was seen in 33.3% cases. Pre-term delivery was seen in 66.7%, low birth weight was seen in 53.3% of the cases, NICU admission was seen in 24.4%.

Conclusion: Accurate prenatal diagnosis of PAS allows for timely planning by a multidisciplinary team, significantly reducing the risk of surgical complications, maternal blood loss, and prolonged ICU stays. Early detection and comprehensive care are crucial to improve both maternal and fetal outcome in pregnancies complicated by PAS.

Keywords: Placenta Accreta Spectrum (PAS), Maternal outcome, Fetal outcome, Placenta previa

INTRODUCTION

Placenta Accreta Spectrum is a condition in which the placental trophoblast abnormally invades into the uterine myometrium partially or completely. It refers to spectrum of abnormal placental adherence due to defective decidualization often occurring in the areas uterine scarring. “The Incidence of placenta accreta spectrum has significantly increased over the last few decades. In the 1960s,it was 1 in 30,000 pregnancies, but by 2000s it has risen to 1 in 533 pregnancies”(1). More recent studies suggest even higher incidence, with some quoting rates as high as 1 in 272 pregnanacies(2). The major risk factor for PAS include increase in the number of previous cesarean section and placenta previa. Other factor include advanced maternal age multiparity, previous D & C and D & E.

Placenta accrete spectrum (PAS) is one of the most significant cause of maternal morbidity and mortality in modern obstetrics with mortality rate reaching up to 7% and even higher in underdeveloped countries. Increased maternal morbidity is primarily due to massive intrapartum or postpartum hemorrhage and its associated complications, including the need for blood transfusion, coagulopathy, sepsis and multiorgan failure. Currently PAS is also most common indication for emergency peripartum hysterectomy.

Ultrasound is the primary imaging tool for screening and diagnosing PAS. MRI is reserved for cases where USG finding is inconclusive.

There is high risk of severe haemorrhage and peripartum hysterectomy and requires early diagnosis and timely transfer to specialised center with better infrastructure with multidisciplinary team to manage severe complication.

MATERIALS AND METHODS

A hospital based time bound cross sectional and observational study was conducted over a period of one year at GMCH, Guwahati. A total of Forty-five antenatal patients were clinically confirmed as PAS.

Inclusion criteria

- Maternal age21 to 40 years.
- Previous cesarean section.
- Previous uterine surgeries.
- Multiparity.
- Previous history of D&C and D&E.
- History of placenta previa
- History of infertility and infertility related procedures.

Exclusion criteria

- Age below 21 years and above 40 years.
- Patient not willing to participate in the study

Maternal demographics and mode of delivery were recorded. Operative notes provided data on placental localization, estimated blood loss, transfusion requirements and surgical measures to control bleeding. Postoperative outcome, including ICU admission, fetal outcome and maternal or fetal mortality were also documented.

Statistical analysis

"Data were entered into excel sheet and analysed using SPSS (Statistical Package for the Social Science) from IBM. Categorical variable were summarized through the calculation of frequency and percentage with appropriate relative frequency. Data of continuous variables were described as mean and standard deviation(SD)

RESULTS

During the study period from "1st October 2023 to 30th September 2024 at our institution, total no of deliveries were 16331".Out of all 45 patients were diagnosed to have PAS. The incidence of PAS came out to be 0.28% during the study period.

Variable		Number	percentage
Parity	1-2	20	44.5%
	3-4	22	48.9%
	>5	3	6.7%
Previous CS	1	31	26.7%
	2	2	68.9%
Placenta previa	Yes	36	80%
	no	9	20%
Age	>30	16	35.6%
	<30	29	64.4%
H/O D &E	Yes	18	40%
	no	27	60%
Myomectomy	yes	2	4.4%

In our study 35.6 % of the subject were below 30 years of age and 64.4% of the subjects were above 30 years of age. In our study, Out of 45 study population 31(69.5%) patient had prior one cesarean section,2(4.4%)% patient had prior two cesarean sections. In this study group 18 (40%) had history of dilation and evacuation and rest 27(60%)do not have h/o D and E. Among the study population 36(80%) had associated placenta previa and rest 9(20%)do not have placenta previa,16(35.6%) of the population were above 30 years of age and 2 (4.4%) had h/o myomectomy. Among the study group (16)35.6% had h/o APH and 29(64.4%) do not have h/o APH.

Among the study group 30(66.7%) had underwent EMLSCS and 15(33.3%) had undergone hysterectomy,7(15.6%) were admitted to ICU and 12(26.6%) had intraoperative blood loss of more than 1.5L.

Variable		Number	Percentage
APH	Yes	16	35.6%
	No	29	64.4%
Mode of Diagnosis	UG	5	11.1%
	MRI	2	4.4%
	USG+MRI	9	20%
	Intraoperative	29	64.4%
Mode of Delivery	EMLSCS	30	66.7%
	Hysterectomy	15	33.3%
ICU ADMISSION	Yes	7	15.6%
	No	38	84.4%
Intraoperative blood loss	1-1.5L	33	73.3%
	2-2.5L	11	24.4%
	>3.5L	1	2.2%
Management	EMLSCS	30	66.7%
	Hysterectomy	15	33.3%

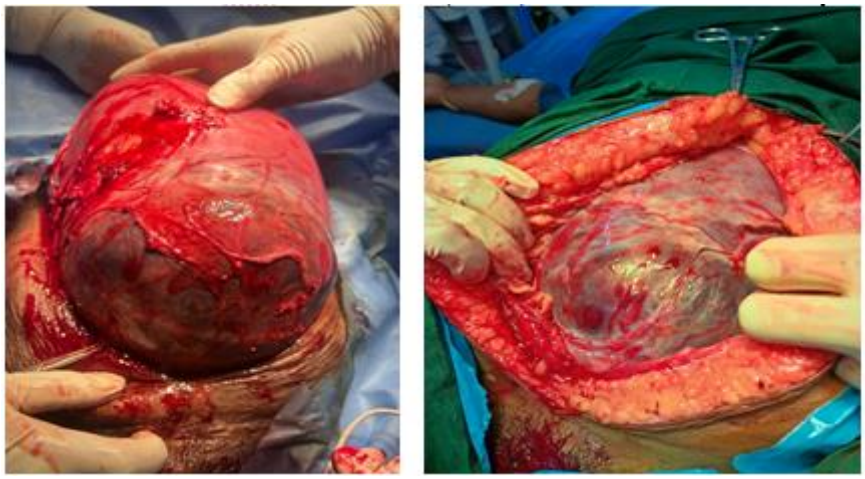
With complication in 17 cases of which PPH 13.3%,Shock 8.9%, Sepsis13.3%,Burst abdomen 2.2%, SSI 6.7%,Postpartum depression 2.2%.

Postoperative Complication	Frequency	Percentage
NONE	28	62.2
PPH	6	13.3
SHOCK	4	8.9
SEPSIS	2	13.3
BURST ABDOMEN	1	2.2
SSI	3	6.7
POSTPARTUM DEPRESSION	1	2.2
Total	45	100

Fetal study in the present study.

Outcome	No of cases	Percentage
Live birth	38	84.4%
IUD	7	15.6%
Low birth weight babies(in kgs)		
<2.5kg	24	53.3%
>2.5kg	21	46.7%
NICU admission	11	24.4%
APGAR SCORE		
<5 min after 5mins	25	55.5%
>5min after 5mins	20	44.5%

In total 45 cases,7(15.6%) cases are IUFD. Among the neonates 24(53.3%) cases had birth weight of <2.5kg and 21(46.7%) had birth weight of >2.5kg, 11(24.4%) were admitted in neonatal ICU followed by 25(55.5%) with APGAR score <5min after 5 mins of birth and 20(44.5%) with APGAR score>5mins.



DISCUSSION

In our institution total delivery during the study was 16331. A total of 45 patient was diagnosed with PAS. Incidence of PAS came out to be is 0.28%" during the study period A study done by **Aggarwal et al'** over a period of 5 years in delhi in 2012 showed incidence of placenta accrete 0.12% i.e. 1 in 2699 deliveries (3).A similar study was done by **Kumari A el al'** over the period of two years showed' incidence of PAS 0.31%' (4). **Jauniaux E et al'**. mentioned in the systematic review analysis the incidence to be 0.12%(5)In our study maximum study population 29 (64.4%)were above 30 years of age. The mean age of the population was 30.68.Similar study done by '**Dwivedi et al** in 2016, 45.95% of the study population belong to 35-40 years of age(6).A similar study done by '**Fitzpatrick et al** on risk factors for morbidly adherent placenta also found high maternal age were significant risk factor'(7). '**Williams MA et al'** found that age is considered a higher risk factor for placenta accrete which is associated with advanced maternal age'(8)**.** In our study other risk factors for PAS were multiparity 33(73.3%), placenta previa36(80%). Our study finding were similar to previous authors. In a study done by **Choudhary et al'** all patient were multiparous, **Kumari et al'** found 7% multiparous. In our study 36(80%) had placenta previa. **Fitzpatrick et a'l** in his study found" prior cesarean section and placenta previa were significant risk factors for PAS"(7). In our study 42(93.3%) patient had post cesarean section. In a Previos study by" **Dwivedi S et al**, 67 % had previous one LSCS, 19% had previous two LSCS, 83% had placenta previa(6).**Wasim T et al'** in their study reported prior history of LSCS in 96% cases"(9) and **Silver RM et al'** in their prospective study found 100% patients had a prior LSCS. In my study history of D and E were 18(40%).Study was similar to previous authors. In our study "Bladder injury "was observed in 2(4.4%) of the cases "Placenta accreta spectrum" is associated with "adverse maternal and neonatal outcome". In this study PAS disorder 'maternal morbidity were antepartum bleeding (35.6%), hysterectomy (33.3%), shock(8.9%) sepsis(4.4%),bladder injury(6.7%) ,Surgical site infection(6.7%), burst abdomen (2.2%) and post partum depression(2.2%) and neonatal complications were preterm birth 30(66.7%), low birth weight below 2500gm 24 (53.3%), low APGAR score after 5 min less than 5 were (44.4%) and fetal mortality 7 (15.6%).NICU admission was required for 11(24.4%)of the neonate'. Morbidities seen in various studies were similar to this studies. **KILIÇCI Ç et al'** observed bladder injury (12.5%), DIC (10.4%) and PPH (12.5%) and mortality(22%)(10).Neither DIC nor mortality was seen in our study. In our study 7(15.6%) had neonatal death associated with placenta previa. High incidence of still births have been observed **by "Upson, K et al**' they reported that placenta accreta was associated with a marked increased risk of co-existing placenta previa and stillbirth"(11).Similar study by "**Balayla, J et al'** also reported similar adverse neonatal outcomes including perinatal mortality, preterm delivery, low birth weight, low 5-min APGAR(12)

CONCLUSION

During the study only 16 subjects were diagnosed antenatally but rest of them were diagnosed intraoperatively as emergency cases. They presented with h/o APH. There were positive coorelation between multiparity, post cesarean section and placenta previa with PAS. Out of 45 patients 15 underwent peripartum hysterectomy but majority had emergency cesarean section .Requirement of blood and blood products during the surgery was much higher. They required more intense monitoring postoperatively. The morbidity associated with disease was higher. In majority of the cases the pregnancy was terminated before term gestation. Prematurity, low birth weight, Neonatal mortality was higher among them. Neonates required greater ICU stay. Any patient coming with prior cesarean section and placenta previa one should be vigilant to localize placenta and if there is any doubt regarding location one should always prefer doing MRI for better fetomaternal outcome.

Bibliography

1. Khong TY. The pathology of placenta accreta, a worldwide epidemic. J Clin Pathol. 2008 Dec;61(12):1243–6.
2. Mogos MF, Salemi JL, Ashley M, Whiteman VE, Salihu HM. Recent trends in placenta accreta in the United States and its impact on maternal-fetal morbidity and healthcare-associated costs, 1998-2011. J Matern-Fetal Neonatal Med Off J Eur Assoc Perinat Med Fed Asia Ocean Perinat Soc Int Soc Perinat Obstet. 2016;29(7):1077–82.
3. Aggarwal R, Suneja A, Vaid NB, Yadav P, Sharma A, Mishra K. Morbidly adherent placenta: a critical review. J Obstet Gynaecol India. 2012 Feb;62(1):57–61.
4. Kumari A,Vahini M, Singh M. Placenta Accreta Spectrum- A clinical review. IJOPARB.2019;19-24 - Search [Internet]. [cited 2025 Mar 31]. Available from: https://www.bing.com/search?q=+Kumari+A%2cVahini+M%2c+Singh+M.+Placenta+Accreta+Spectrum-+A+clinical+review.+IJOPARB.2019%3b19-24&qs=HS&sk=HS1&sc=10-0&cvid=5972E4B1A80D4B138D979CED7B4D33DB&FORM=QBRE&sp=2&lq=0
5. Jauniaux E, Kingdom JC, Silver RM. A comparison of recent guidelines in the diagnosis and management of placenta accreta spectrum disorders. Best Pract Res Clin Obstet Gynaecol. 2021 Apr;72:102–16
6. (PDF) Placenta accreta spectrum: risk factors and fetomaternal outcome after multidisciplinary team approach [Internet]. [cited 2025 Apr 8]. Available from:
7. Fitzpatrick KE, Sellers S, Spark P, Kurinczuk JJ, Brocklehurst P, Knight M. The management and outcomes of placenta accreta, increta, and percreta in the UK: a population-based descriptive study. BJOG Int J Obstet Gynaecol. 2014 Jan;121(1):62–70; discussion 70-71
8. Williams MA, Mittendorf R, Lieberman E, Monson RR, Schoenbaum SC, Genest DR. Cigarette smoking during pregnancy in relation to placenta previa. Am J Obstet Gynecol. 1991 Jul;165(1):28–32.
9. Wasim T, Bushra N, Riaz S, Iqbal HI. Fetomaternal outcome in patients with placenta previa. Pak J Med Sci. 2020;36(5):952–7.
10. Kılıççı Ç, Eken MK, İlhan G, Çöğendez E, Şanverdi İ, Keskin M, et al. Evaluation of Risk Factors, Incidence, Perinatal and Maternal Outcome of Placenta Previa Cases with and without Placenta Accreta Spectrum. Duzce Med J. 2018 Jul 22;19(3):75–80.
11. Upson K, Silver RM, Greene R, Lutomski J, Holt VL. Placenta accreta and maternal morbidity in the Republic of Ireland, 2005-2010. J Matern-Fetal Neonatal Med Off J Eur Assoc Perinat Med Fed Asia Ocean Perinat Soc Int Soc Perinat Obstet. 2014 Jan;27(1):24–9.
12. Balayla J, Bondarenko HD. Placenta accreta and the risk of adverse maternal and neonatal outcomes. J Perinat Med. 2013 Mar;41(2):141–9.