International Journal of Medical Science in Clinical Research and Review
Online ISSN: 2581-8945
Available Online at http://www.ijmscrr.in Volume 7|Issue 04 (July-August) |2024 Page: 723-729

Original Research Paper

Changing trends of placenta accreta spectrum

Authors:
Dr. Disha Kalra [1], Proff Dr. Suresh Rawte [2], Dr. Pooja Mote [3], Proff Dr. Lakshmi Rachakonda[4]
[1]*Junior Resident, Department of OBGY, MGM, MCH, Aurangabad*
[2]*Professor and Head of Unit, Department of OBGY, MGM, MCH, Aurangabad*
[3]*Assistant Professor, Department of OBGY, MGM, MCH, Aurangabad*
[4]*Professor and Head of Department, Department of OBGY, MGM, MCH, Aurangabad*
Corresponding Author*:*
Dr. Disha Kalra
Junior Resident, Department of OBGY, MGM, MCH, Aurangabad

Article Received: 24-May-2024, Revised: 14-June-2024, Accepted: 04-July-2024

ABSTRACT:
Introduction: Placenta accreta spectrum (PAS) disorders, encompassing placenta accreta, increta, and percreta, are increasingly prevalent and closely linked to rising cesarean section rates **Objective of study**: is to, evaluates PAS cases, risk factors, intraoperative findings, complications, and maternofetal outcomes. **Materials and Methods:** This retrospective study, conducted at MGM Hospital Aurangabad from January 2020 to April 2024 included patients diagnosed with PAS, focusing on demographic data, clinical presentation, and surgical outcomes **Results:** Major risk factors identified include previous cesarean deliveries and placenta previa. Antenatal diagnosis via ultrasound and MRI facilitated surgical planning, significantly reducing intraoperative blood loss and complications. Despite this, PAS cases remain high-risk, with substantial maternal morbidity, including hemorrhage, and complications such as bladder injury. Neonatal outcomes varied, with preterm births common and NICU stays necessary in several cases. **Conclusion:** The study emphasizes the importance of multidisciplinary care, antenatal diagnosis, and preparedness in managing PAS. Effective management requires vigilant prenatal screening in high-risk pregnancies and comprehensive planning to mitigate associated risks. This research underscores the need for improved clinical protocols and resource allocation to enhance outcomes for women with PAS.

Keywords: PAS (Placenta Accreta Spectrum)

INTRODUCTION:

Placenta accreta spectrum disorders is a rare pathology but the incidence is on the rise in recent years. [(1)]

The rise in incidence appears to correlate with the increase of caesarean section rates. [(1,3,4)] PAS is associated with multiple risk factors, cesarean births is the most common. Asherman syndrome, multiparity, previous uterine operations or curettage, placenta previa and advanced maternal age are additional risk factors [(3)]

The clinical profile of Placenta Accreta Spectrum includes:

- High risk of severe bleeding during delivery, which may necessitate a blood transfusion or an emergency hysterectomy, leading to increase in maternal morbidity and mortality.
- Potential need for preterm delivery depending on the severity and complications associated with the condition.
- Increased likelihood of requiring cesarean delivery, often followed by a hysterectomy if the placenta cannot be safely separated from the uterine wall.
- Possible complications in future pregnancies, especially if the uterus is conserved, due to scarring and damage to the uterine tissue.[(3) (4)]

The diagnosis should be preferably antenatal. Obstetric ultrasound is the main diagnostic tool used for prenatal diagnosis. Although most women are diagnosed in the second and third trimesters, features of accreta that are apparent on ultrasonography may be present as early as the first trimester.[(3)] The diagnosis of certainty is histological. [(1)] Diagnosing PAS antenatally allows for careful planning of the delivery in tertiary care facility with a fully trained interdisciplinary staff and amenities experienced in handling potential complications [(3)] . This

also includes having a blood bank and being able to carry out large-scale transfusions if needed.[3]

In situations where attempts to preserve the uterus were made, techniques such as resection around the placental area may be attempted, although they carry a higher risk of complications[5] In selected cases, uterus conserving measures can be considered, such as leaving the placenta in situ and monitoring for its natural resorption. Conservative management carries a higher risk of complications, including hemorrhage, and should only be pursued with appropriate counseling and under strict monitoring conditions[5]

Obstetric hysterectomy is defined as one performed after 20 weeks of gestation for uncontrollable uterine bleeding not responsive to conservative measures, occurring at any time before and after delivery, but within the first 6 weeks postpartum. [6]Obstetric hysterectomy is usually carried out during or after a cesarean section, though it can also be done after a vaginal birth. It is typically carried out to stop or stop bleeding caused by improper placentation or intractable uterine atony.[7] Caesarean hysterectomy is considered the gold standard treatment for placenta accreta. [3]During a cesarean hysterectomy, leaving the placenta in situ, is one of the approved method of treating PAS. This approach prevents attempts to separate the placenta, therefore lowering the risk of bleeding.[3]

AIM OF THE STUDY:

To analyse the cases of placenta accrete spectrum

MATERIALS AND METHODS:

Our study is retrospective audit of medical case records of women who underwent Peripartum hysterectomy due to placenta accrete spectrum at MGM Medical college and hospital Aurangabad was done for a 4 year period from January 2020- April 2024.

Table 1: Demographic and baseline characteristics of study individuals

Sr No.	Diagnosis	Age	Presenting complaint	Parity	Previous operative history	Elective / Emergency Previa/ Accreta diagnosed antenatally on MRI /USG
1.	G4P3L3 with 34 wk with previous 3 LSCS with type 4 placenta previa with? Accreta with APH	28	Bleeding PV	G4P3L3	3 LSCS	Emergency
2.	G7P4L3D1A2 with 36.1 wk with previous 2 LSCS with impending scar dehiscence	37	Pain abdomen	G7P4L3D1A2	2 FTND, 2 LSCS, 2 Check curretage	Emergency
3.	G2P1L1 with 22 wk with previous LSCS with? Incomplete abortion	30	Pain abdomen , bleeding PV	G2P1L1	1 LSCS , h/o alleged instrumentation for 2nd trimester abortion with mtp pill consumption in present pregnancy	Electively planned surgery USG s/o RPOC with invasive placenta/invasive mole , adherent placenta – likely percreta MRI- f/s/o Invasive placenta
4.	G3P1L1A1 with 35.4	33	Spotting PV	G3P1L1A1	1 LSCS	Electively planned surgery

	wk with previous LSCS with complete placenta previa with placenta accreta with rh negative status with breech presentation					Usg and MRI s/o Grade 4 placenta previa with accrete
5.	G2P1L1 with 32.3 wk with previous LSCS with infertility concieved with mild oligohydroamnios with rh negative status with type 4 placenta previa with placenta increta	34	Surveillance	G2P1L1	1 LSCS	Electively planned surgery Usg and MRI s/o Placenta previa with increta
6.	G3P1L1A1 with 37 wk with previous LSCS with grade 4 placenta previa with placenta increta with rh negative status	23	Surveillance	G3P1L1A1	1 LSCS, 1 suction evacuation	Electively planned surgery Usg and MRI s/o grade 4 previa with increta
7.	G2P1L1 with 14 wk with previous LSCS with low lying placenta with gastroenteritis with anemia	24	Vomiting and loose stools	G2P1L1	Previous LSCS	Emergency
8.	G2P1L1 with 35.4 wk with previous LSCS with complete placenta previa with placenta increta with FGR of 2 weeks with oligohydroamnios with URTI with k/c/o Syphylis	31	Surveillance	G2P1L1	Previous LSCS	Electively planned surgery USG S/O placenta previa with increta
9.	Primigravida with 35.6 wk with DCDA twin with FGR of 3 weeks in 1st twin with I.U.F.D of 2nd twin with cervical stitch in situ with oligohydroamnios	22	Surveillance	Primigravida	none	Emergency

Table 2: Indication, Type of incision, intraoperative findings and HPR findings.

Sr No.	INDICATION for Hysterectomy	Type of skin incision	Type of uterine incision	Intra operative findings	HPR
1.	Dense adherent placenta	Vertical Midline	Classical	E/o complete placenta previa with adherence, with thinned out LUS with placenta seen beneath serosa	Placenta Percreta
2.	? Placenta accreta	Transverse	Upper segment	E/o adherent placenta	Placenta

			transverse incision		Increta with perforation
3.	?Adherent placenta	Transverse	Hysterotomy	E/o bulging LUS, dilated tortuous vessels seen, e/o adherent placenta to anterior uterine wall, uterus flabby- uterotonics given Hysterotomy done - . ON reexploration e/o 150 ml haemoperitoneum , e/o 3*3 cm rent on left side of LUS with e/o clots	Placenta Accreta
4.	Placenta accreta	Vertical Paramedian	Upper segment transverse incision	Adherent placenta	F/s/o Placenta Previa With Accreta
5.	Adherent placenta	Vertical Paramedian	Upper segment transverse incision	B/l uterine artery ligation e/o Dense adherent placenta	Placenta Increta
6.	Placenta increta	Vertical Paramedian	Classical	E/o adherent placenta	Placenta Accreta
7.	Adherent placenta	Transverse	Transverse incision	E/o haemoperitoneum 600 ml , e/o rupture of right angle of uterine scar , e/o placenta adherent to uterine scar removed in piecemeal , bleeding ++ decision for hysterectomy taken	Placenta Previa With Accreta
8.	Adherent Placenta with bleeding from placental bed	Vertical Paramedian	Lower segment transverse incision	E/o bleeding from placental bed – multiple haemostatic sutures taken , e/o continuous bleeding from placental bed	Placenta Accreta
9.	Adherent placenta with bleeding from placental bed	Transverse	Lower segment transverse incision	E/o adherent placenta , MROP attempted, e/o flabby uterus with placenta retained in the fundus, uterotonics given, e/o flabby uterus, b/l uterine artery ligation done , heymanns stitch taken, B-Lynch sutures taken , e/o flabby uterus with bleeding +, decision for hysterectomy taken	Placenta Increta

Table 3: Perioperative management of patients with PPH.

Sr No.	Preoperative Hb (gm%)	Postoperative Hb(gm%)	Blood loss (approx) (Litres)	Intraop transfusion	Maternal ICU stay	No. of days on ventilator support	Intraoperative complications	Postoperative complication
1.	11.2	12.7	1.8- 2	3 PCV + 2 FFP	3 days	-	No	None
2.	11.5	10.9	2	4 PCV 4 FFP	3 days	-	E/o bladder injury – urologist intervention required	None

3.	10.1	9	2.3	2 PCV 2 FFP , 2 PCV 2FFP	7 days	2	No	Required ionotropic support for 4 days
4.	13.8	12.7	1.5	3 PCV 4 FFP	4 days	-	Suspected bowel injury,e/o mesentric bleed at rectosigmoid junction – surgeon's intervention required	SSI Resuturing not required
5.	13.7	11.5	1.5	2 PCV	5 days	-	No	None
6.	10.9	12.5	1	2 PCV	2 days	-	No	None
7.	7	10.7	1.2 – 1.4	Preoperative 2 PCV Intraoperative 2 PCV 2 FFP	1 days	-	No	none
8.	11.8	12	1.2 – 1.4	2 PCV 2 FFP	1 days	-	-	-
9.	12.9	3.9	3	Intraoperative 4 PCV , 4 RDP, 6 FFP Postoperative 2 PCV	-	1	E/o bladder base injury with left ureter transection – urologist intervention required – repaired	Patient succumbed on POD1 after she went into cardiac arrest

Table 4: Neonatal outcome.

Sr No.	Neonatal outcome	Birth Weight	NICU Stay
1.	Live	2 kg	9 Days
2	Live	2 Kg	With Mother
3	-	-	
4	Live	2.6 Kg	With Mother
5	Live	2.76 Kg	23 Days
6	Live	2.6 Kg	With Mother
7	Abortus	65 Gram	
8	Live	2.065 Kg	With Mother
9	Baby 1 – Live Baby 2 – I.U.F.D	1- 1.67 Kg 2- 1.315 Kg	1- Nicu 2- I.U.F.D

DISCUSSION:

The incidence of PAS is on the rise worldwide and in India as well and this appears to correlate with the increase of caesarean section rates. now accounting for more than 1 in 5 (21%) of all childbirths globally(WHO). [1,3,4,10] In India, the C-section rates have crossed the WHO threshold of 15-20%, which is becoming a severe public health concern. [11]

The analysis also highlighted the significant risk factors for PAS, with the majority of cases having a history of multiple cesarean deliveries and placenta previa. Specifically, 67% of the women had at least one previous cesarean section, with 11.1% having up to three, and 56% presented with placenta previa, which are

established high risk factors and leading causes of obstetric hysterectomy. [8] The increased risk associated with these factors underscores the importance of vigilant prenatal care and early diagnosis in high-risk women.

Intraoperative findings revealed the complexity and high risk involved in managing PAS. It is also evident that when a classical incision was taken, where PAS was antenatally expected /diagnosed, the blood loss, need for transfusion and morbidity was significantly lower than when the decision had to be taken in an emergency. These surgical approaches reflect the need for flexibility in managing the cases of PAS.

Blood loss during surgery was significant, ranging from 1 to 3 liters, necessitating extensive blood transfusions (average 2 to 4 units of packed cells and fresh frozen plasma), but was significantly lower in cases where diagnosis was established antenatally and need for obstetric hysterectomy was anticipated. The presence of complications such as bladder injury and uterine rupture further illustrates the severe intraoperative challenges associated with PAS.

One patient succumbed to cardiac arrest on the first postoperative day, highlighting the severe maternal morbidity and mortality associated with PAS, especially where the surgery had to be performed in emergency and Placenta accrete was not suspected.

Maternofetal outcomes were significantly impacted by PAS. High preterm birth rates were observed, with 50% of live births occurring before 37 weeks. Neonatal outcomes varied, with birth weights ranging from 1.67 kg to 2.76 kg. NICU stays were required for some neonates, lasting from a few days to 23 days. These findings emphasize the need for comprehensive neonatal care following delivery.

The results of this study underscore the complex and high-risk nature of PAS. The association between multiple cesarean deliveries, placenta previa, and the development of PAS is well-documented and reaffirmed by our findings. The significant intraoperative blood loss and need for blood transfusions highlight the critical nature of surgical management in PAS cases. Moreover, the severe maternal and fetal complications observed necessitate a multidisciplinary approach to care, involving obstetricians, anesthetists, neonatologists, and, in some cases, urologists and general surgeons.

Our findings are consistent with previous studies, such as the one conducted by Varlas VN et all in 2021 and report similar risk factors, intraoperative challenges, and adverse outcomes associated with PAS. (9)

Better preparedness, anticipation, timely decisions and intrerventions have played a crucial role in the management of placenta accrete spectrum cases. We have also noted that antenatal diagnosis, anticipation, elective procedures and better preparedness have significantly less morbidity and mortality . Placenta accrete spectrum is not only seen with previous uterine scars, but also in a case of primigravida with no previous uterine surgery and the lack of anticipation of such a case has led to a maternal death which is the most dreaded nightmare.

The implications for clinical practice are significant. Early identification of high-risk pregnancies, particularly in women with a history of cesarean deliveries and placenta previa, is crucial. Implementing routine screening protocols for PAS in these high-risk groups can aid in early diagnosis and planning. Additionally, ensuring the availability of blood products and having a multidisciplinary team on standby during delivery can help manage the significant intraoperative risks associated with PAS. Finally, developing standardized management protocols and providing training to healthcare providers can improve outcomes in PAS cases.

CONCLUSION:

In conclusion, PAS is a complex and high-risk obstetric condition with significant maternal and fetal morbidity and mortality. The strong association with previous cesarean deliveries and placenta previa highlights the need for vigilant prenatal care in high-risk pregnancies. Effective management of PAS requires a multidisciplinary approach, early diagnosis, and careful surgical planning to mitigate the severe risks involved. This study contributes to the growing body of evidence on PAS and underscores the need for improved clinical practices and resource allocation to better manage this challenging condition.

CONFLICT OF INTEREST: No conflict of interest

REFERENCES:

1. Slaoui A, Talib S, Nah A, El Moussaoui K, Benzina I, Zeraidi N, et al. Placenta accreta in the department of gynaecology and obstetrics in Rabat, Morocco: case series and review of the literature. Pan Afr Med J [Internet]. 2019 [cited 2024 Apr 8];33. Available from: http://www.panafrican-med-journal.com/content/article/33/86/full/
2. Classification of Placenta Accreta Spectrum Disorders | Figo [Internet]. [cited 2024 Apr 9]. Available from: https://www.figo.org/news/classification-placenta-accreta-spectrum-disorders
3. Cahill AG, Beigi R, Heine RP, Silver RM, Wax JR. Placenta Accreta Spectrum. American Journal of Obstetrics and Gynecology. 2018 Dec;219(6):B2–16.

4. Silver RM, Barbour KD. Placenta Accreta Spectrum: Accreta, Increta, and Percreta. Obstetrics and Gynecology Clinics of North America. 2015 Jun 1;42(2):381–402.
5. Silver Robert M., Branch D. Ware. Placenta Accreta Spectrum. New England Journal of Medicine. 2018 Apr 19;378(16):1529–36.
6. Rathod AD, Pajai SP. Emergency obstetric hysterectomies at a tertiary referral Shri Vasantrao Naik Government Medical College and Hospital of Tribal of Yavatmal District (Maharashtra): retrospective critical analysis (6 years study).
7. Anju PS, Sibia P, Kaur P. Emergency obstetric hysterectomy: A clinical study. Int J Clin Obstet Gynaecol. 2020;4:432-5.
8. Licon E, Matsuzaki S, Opara KN, Ng AJY, Bender NM, Grubbs BH, et al. Implementation of multidisciplinary practice change to improve outcomes for women with placenta accreta spectrum. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2020 Mar 1;246:194–6.
9. Varlas VN, Bors RG, Birsanu S, Maxim B, Clotea E, Mihailov M. Maternal and fetal outcome in placenta accreta spectrum (PAS) associated with placenta previa: a retrospective analysis from a tertiary center. J Med Life. 2021;14(3):367–75.
10. https://www.who.int/news/item/16-06-2021-caesarean-section-rates-continue-to-rise-amid-growing-inequalities-in-access
11. Roy N, Mishra PK, Mishra VK, Chattu VK, Varandani S, Batham SK. Changing scenario of C-section delivery in India: Understanding the maternal health concern and its associated predictors. Journal of Family Medicine and Primary Care. 2021 Nov 1;10(11):4182-8.