Journal of Cardiovascular Disease Research
ISSN: 0975-3583, 0976-2833 VOL 14, ISSUE 12, 2023

Original Research Article

MATERNAL OUTCOME IN PLACENTA ACCRETA SPECTRUM DISORDER IN TERTIARY CARE HOSPITAL

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Abstract

Objective: To study maternal outcome in placenta accreta spectrum disorder in ANC patients of Vanivilas hospital.

Materials and Methods: After obtaining approval and clearance from the institutional ethics committee, the in-patient and out-patients fulfilling the inclusion criteria will be enrolled for the study after obtaining informed consent. Details collected as per the case record and follow up form. A study was conducted among 40 suspected cases of placenta accreta spectrum disorder, data regarding general information, demographic data, obstetric history, gestational age, risk factors, management, blood loss, blood products transfusion, organ injury, outcome, HPE report, outcome(mortality & morbidity) are collected. The collected data is then compiled and analyzed.

Results: 40 cases of PAS were managed over 1 year period, where PAS accounted for 0.276% out of 14000 deliveries conducted at Vanivilas hospital. 47.5% were belonging to the age group between 26-30yr, PAS has led to 5% of maternal death, 82.5% had morbidity which includes 30% had blood loss between 1.6-2liters, 27.5% had massive hemorrhage(>2lt), maximum blood loss was 3.5lt. 5% had sepsis, 5% with postpartum bleeding, 2.5% had acute renal failure, 20% had bladder injury, 2.5% had ureteric injury, 22.5% had prolonged hospital stay(>7 days), 15% had SSI.

Conclusion: PAS accounted for 0.276% out of total deliveries in a year at Vanivilas hospital (14K) PAS disorders are an important cause of maternal morbidity (82.5%) and mortality(5%). Commonest risk factor being previous scarred uterus with placenta previa (85%) Sensitivity rate of USG in picking up adherent placenta is 31.5%, 80% were managed by peripartum hysterectomy, 10% required postpartum hysterectomy. 28.12% had bladder/ureteric injury, 85% required ICU

stay, 22.2% required prolonged hospital stay, 87.5% required blood & blood products transfusion. 83.3% were HPE confirmed adherent placenta.

Keywords: Placenta accreta spectrum disorder, scarred uterus, peripartum hysterectomy.

INTRODUCTION

Placenta accreta spectrum (PAS) disorders result from an abnormal or absent Nitabuch's layer, allowing the trophoblast to invade the myometrium (placenta increta), and in severe cases to reach the serosa and adjacent organs (placenta percreta). [1] Complications of PAS disorders range from uterine rupture in early pregnancy to life-threatening postpartum hemorrhage, frequently requiring aggressive transfusion and surgical treatment. Hemorrhage from the placental bed after attempting placental extraction is the most common complication, which can lead to major maternal morbidity and ultimately to maternal death. Complications arising from the procedures required to treat PAS disorders are also important causes of maternal morbidity. [3] Infertility and psychological disturbances can have a strong and long-lasting impact on women's health. For instance, studies reporting on the conservative management of PAS naturally lack a histopathologic diagnosis in the majority of cases, thereby causing uncertainty regarding depth and extension of trophoblastic invasion.

Materials and Methods

It’s a prospective observational study conducted in vanivilas hospital, after obtaining approval and clearance from the institutional ethics committee, the in-patient and out-patients patients fulfilling the inclusion criteria will be enrolled for the study after obtaining informed consent. Details collected as per the case record and follow up form. A study was conducted among 40 suspected cases of placenta accreta spectrum disorder, data regarding general information, demographic data, obstetric history, gestational age, risk factors, management, blood loss, blood products transfusion, organ injury, outcome, HPE report, outcome(mortality & morbidity) are collected. The collected data is then compiled and analyzed.

RESULTS

Table 1: RISK FACTORS

RISK FACTOTRS	NUMBER N=40	PERCENTAGE %
SCARRED UTERUS **PREV 1 LSCS** **PREV 2 LSCS**	34 23 11	85 67.5 32.3
PLACENTAPREVIA **UNSCARRED UTERUS**	2	5

OTHERS		
HYSTEROSCOPIC SEPTAL RESECTION	1	2.5
UTERINE CURETTAGE	1	2.5
MULTIPARITY (P4)	1	2.5
NO KNOWN RISK FACTOR (PRIMIGRAVIDA)	1	2.5

Table 2: USG FINDINGS

USG	NUMBER N=40	PERCENTAGE %
PLACENTA PREVIA WITH SIGNS OF ADHERENT PLACENTA	**12**	**31.5**
PLACENTA PREVIA WITH NO SIGNS OF ADHERENT PLACENTA	**19**	**50**
LOW LYING PLACENTA WITH NO SIGNS OF ADHERENT PLACENTA	**4**	**10.52**
FUNDAL PLACENTA	**3**	**7.89**
NOT AVAILABLE [EMERGENCY CASES]	**2**	**5**

Table 3: MRI FINDINGS

MRI(Done for 8 cases)	NUMBER N=8	PERCENTAGE %
ADHERENT PLACENTA	3	37.5
NONADHERENT PLACENTA	5	62.5

Table 4: MANAGEMENT

MANAGEMENT	NUMBER N=40	PERCENTAGE %
CAESAREAN HYSTERECTOMY	32	80
CONSERVATIVE	2	5
EXPECTANT	2	5
POST PARTUM HYSTERECTOMY	4	10

Table 5: ORGAN INJURY IN PATIENTS WHO UNDERWENT HYSTERECTOMY GROUP (N=36)

ORGAN INJURY	NUMBER N=9	PERCENTAGE %
BLADDER	**8**	**22.2**
URETER	**1**	**2.7**

Table 6: HISTOPATHOLOGY REPORT

HPE	NUMBER N=40	PERCENTAGE %
PLACENTA ACCRETA	11	27.5
PLACENTA INCRETA	9	22.5
PLACENTA PERCRETA	10	25
NON ADHERENT	10	25

Table 7: OUTCOME (Morbidity and Mortality)

OUTCOME	NUMBER N= 40	PERCENTAGE %
MORTALITY	2	5
HEMORRHAGE REQUIRING TRANSFUSION	35	87.5
ORGAN INJURY AND RELATED MORBIDITY	9	25
SEPSIS	2	5
ICU STAY	34	85
AKI	1	2.5

VENTILATORY SUPPORT	10	25
IONOTROPE SUPPORT	6	15

DISCUSSION

A study was conducted among 40 patients of suspected placenta accreta spectrum disorder.

- PAS accounted for 0.276% out of 14,000 total deliveries in a year at Vani vilas hospital. Overall prevalence is 3.4 per 10 000 deliveries according to Thurn et.al. Incidence of 1 in 2174 deliveries (0.045%) according to Catherine et.al.
- Majority of the study patients 47.5% belongs to the age group between 26yr-30yr, 7.5% of the patients were >35years old, mean age of the patients in this study is 29.3yrs, compared to other studies which showed majority of the patients belonging to the age group between 20-34yrs with mean age of 33years according to Thurn et.al
- In this study, majority of the study patients i.e 50% were intervened at 32-36+6wk, followed by 40% at >37weeks, 5% of the patients were managed between 28-31+6weeks period of gestation, compared to other studies where 86% were managed at 37weeks, and 39% between 32-36weeks[c1] according to sentilhes et.al. ACOG recommends delivery at >/= 34 weeks. Society of maternal and fetal medicine recommends between 34-37 weeks for better outcome.
- In this study, 95% of the patients are multiparous women with 5% being primigravida which suggests increase incidence in multiparous women due to previous uterine procedure/altered hormonal or implantation environment. Compared to other study, 30% were primigravida, 70% were multiparous women[r2] according to Thurn et.al. 95.8% were multiparous women according to sentilhes et.al.
- In this study 85% of the patients, had scarred uterus which was found to be the commonest risk factor where, 67.1% were previous 1 LSCS, 32.3% were previous 2 LSCS. 5% had placenta previa with unscarred uterus. 2.5% had history of hysteroscopic septal resection and uterine curettage, 2.5% had multiparity has a risk factor who was 30yr old with para-4 and reason was not known in 1 patient, who was 20 years old primigravida with no history of uterine procedures or infertility treatment, which would suggests endometritis/hidden risk factor, compared to other study the commonest risk factor being scarred uterus (53.8%) followed by placenta previa (52.1%)[c2] according to sentilhes et.al. 48.7% had prev LSCS and placenta previa, 47% were multiparous women, 0.6/10,000 were nulliparous women less than 35yr of age had PAS due to previous surgical abortions, uterine surgery/IVF procedures according to Thurn et.al.

- In this study, USG was done for 38 cases out of which it was able to identify signs of PAS in placenta previa among 31.5% cases, signs of adherent placenta was missed among 50% of placenta previa cases, showing PPV of 31.5% which suggests, requirement of intense training among junior radiologists in view of missed cases and non availability of bed side USG with Doppler for obstetricians impacting on round the clock availability of high resolution ultrasound machines in emergency cases of prev LSCS with placenta previa. Sensitivity of USG is 95% with specificity being 76% according to Johnstud et.al. Other studies showed PPV of USG as 44.5% according to sentilhes et.al.

- MRI was done for 8 cases 37.5% showed adherent placenta, 62.5% showed non adherent placenta inferring that MRI is not routinely recommended by obstetricians but is indicated when USG findings are uncertain and in posterior placental location. In other studies MRI was done for 45 cases out of 167, which showed PPV 91.1% according to sentilhes et.al.
- In this study 80% of the cases were managed by peripartum hysterectomy, 10% (n=4) cases required postpartum hysterectomy out of which 1 patient had AKI due to retained placenta in sepsis underwent hystetrectomy on day14 another 3 cases had primary and secondary PPH underwent hysterectomy on day1 and day2. 5% cases were managed by conservative and expectant method, where patient resumed menstruation at 11-12 month. Additional surgical procedure like uterine artery ligation and internal iliac artery ligation was done in 57.1% and 42.9% cases respectively, when compared to other study, which estimates 22% were submitted to hysterectomy, 52.2% incidence of subsequent hysterectomy[m1], 78.4% had conservative management, 10.8% had primary hysterectomy and delayed hysterectomy[nc1] according to sentilhes et.al. 14 women (16.5%) had Conservative management and in 36 women (58.1%) had caesarian hysterectomy according to Catherine et .al. Caesarean hysterectomy, with no attempt to detach the placenta from the uterine wall, has become the recommended treatment for adherent placenta. In this study during peripartum hysterectomy 20% sustained bladder injury, 2.5% had ureteric injury, when compared to other study bladder laceration (20%), urinary fistula (13%), ureteral transection (6%), and small capacity bladder (4%). Partial cystectomy was necessary in 24 cases (44%) according to sentilhes et.al. Adjacent organ injury (4.7% versus 12.9%; p¼0.03) were less frequent in the Conservative management group compared to the Caesarean group according to Catherine et.al. 8.3% had bladder injury,1.6% had ureteric injury according to Thurn et.al.
- In this study 30% had blood loss between 1.6-2lts, 2.5% had blood loss between 3.1-4lts, 15% had blood loss <1lts, 87.5% required PRBC transfusion, 17.5% required platelet transfusion, 30% required FFP transfusion, compared to other study showed 16.9% had >1.5lt blood loss and 10.8% had >3lt blood loss. Catherine et.al. Mean blood loss was 5.6lt, >5lt blood loss was seen in 30% of patients, 57% required >6 PRBC transfusion according to Thurn et.al.
- In this study maternal mortality rate was 5% compared to 7% Williams et.al, which suggests, with multidisciplinary team maternal mortality can be reduced, 87.5% had morbidity in terms of ICU admission (85%) maximum days were 7 days with mean duration of 2.48days, 25% had organ injury and related morbidity, 5% had sepsis, 2.5% had AKI, 25% required ventilator support, 15% required ionotrope support, compared to other study which showed 37.6% required ICU stay, 10.6% needed inotropic support according to Catherine et.al. Transfer to intensive care unit 43 (25.7%) Duration of stay in intensive care unit 2.36+/-1.93, Acute renal failure 1 (0.6%) Adjacent organ injury 1 (0.6%) Septic shock 1 (0.6%) Sepsis (sepsis+septic shock) 7 (4.2%) according to Thurn et.al.
- HPE report among hysterectomy group showed 27.5% cases of accreta, 25% cases of percreta, 22.5% cases of increta, 25% reported as non adherent placenta, which suggests placental implantation site not visible due to separate placenta with absent myometrium according to Fabiola et.al. Occult placenta accreta can be made by attachment of myometrial fibres to the basal plate according to Clodagh mullen et.al.

CONCLUSION:

PAS accounted for 0.276% out of 14,000 total deliveries in a year at vanivilas hospital. PAS disorders are an important cause of maternal mortality and morbidity.
In this study scarred uterus was found to be the commonest risk factor among 85% of cases, where others had uterine curettage, hysteroscopic septal resection and placenta previa as other risk factors. There was no known risk factor among 1 case, which suggests possibility of hidden risk factor.

95% were multiparous women, 18 cases were para1, 19 cases were p2, 1 case was p4. Majority of the patients was intervened at 32-36+6 weeks followed by 40% at >37 weeks, where 47.5% were in the age group between 26-30yr, 7.5% were >35years
USG was able to identify signs of adherent placenta in placenta previa among 31.5% of patients .USG missed signs of adherent placenta among 50% of placenta previa cases with PPV of 31.5%. 80% of the patients had caesarean hysterectomy, which is the first line of management in PAS .
In this study mortality rate was 5%, morbidity was seen in 82.5% which includes 87.5% that required blood transfusion, 25% had organ injury and related morbidity, 5% had sepsis, 85% required ICU stay, 2.5% had AKI, 25% required ventilator support, 15% required ionotropic support.
In this study hysterectomy specimens were reported as placenta accrete among 27.5% of cases, 25% as percreta, 22.5 as increta, 25% were reported as non adherent placenta.

Source of Support: Nil.
Conflict of Interest: None declared.

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