Section: OBG

Original Research Article

A STUDY ON MATERNAL AND PERINATAL OUTCOMES IN PLACENTA PREVIA IN SCARRED Vs UNSCARRED UTERUS

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Abstract

Background: Placenta previa is defined as the presence of placenta over or adjacent to the internal os. Incidence is about 0.5-1% of all deliveries and is a major cause of third trimester hemorrhage. Increased its incidence in the present days may be due to raised cesarean deliveries. Significant maternal morbidity in the form of increased fetal malformations cesarean section, increased blood loss and peripartum hysterectomy which causes prolonged hospitalization. Perinatal deaths are due to prematurity, low birth weight, asphyxia and congenital malformations. The aim is to study maternal and perinatal outcomes in placenta previa in scarred vs unscarred uterus. **Materials and Methods:** A prospective study of 50 cases conducted during the period of January 2021 to December 2021 at Government Hospital, Siddhartha medical college, Vijayawada, Andhra Pradesh. Study population is patients who are admitted in the ward and labour room. CBP, BGT, Viral markers, Ultrasound- TAS, TVS, Color Doppler, MRI was done. **Result:** Statistical analysis was done using SPSS software version 21.0. Majority of placenta previa patients were in 20-25 years of age 17 cases (65%). Primipara 12(24%) in unscarred uterus. Parous women 20 (40%) in scarred uterus. Previous h/o abortions 8(16%) in unscarred uterus. 4(8%) in scarred uterus p-value is 0.03. Gestational age majority were in 34-37weeks 10(20%) in unscarred 12(24%) in scarred uterus. Type III placenta previa 12(24%) in unscarred. 10(20%) in scarred uterus. Placenta accreta spectrum 3(6%) in scarred 1(2%) unscarred uterus. Peripartum hysterectomy was done 3(6%). PPH is more in scarred uterus 11(22%). Massive transfusion 4 cases (8%). 46% of babies are <2.5kg. Perinatal mortality 27cases (54%). **Conclusion:** Placenta Previa is more in scarred uterus and is increasing with parity. Preterm, Low birth weight, IUGR are more with scarred uterus. Accurate diagnosis judicious expectant management with blood transfusion and timely delivery lead to most favorable outcome.

INTRODUCTION

Placenta previa is the complete or partial covering of the internal os of the cervix with the placenta.[1-3] About one third of Antepartum hemorrhage is due to placenta previa. The most characteristic event in placenta previa is painless hemorrhage, which usually occurs at the end of second trimester, in the third trimester or during labor.[4] It is sudden in onset causeless not related to any activity, it may stop tends to recur. There may be pallor, tachycardia, hypotension depending on the amount of blood loss. It is associated with maternal morbidity and mortality due to haemorrahagic shock, increased operative interference and sepsis.

There is higher incidence of perinatal mortality and morbidity due to preterm delivery and it is associated with complications like low birth weight, birth asphyxia and neonatal sepsis.

The incidence of placenta previa is around 1 in 300 deliveries.[5] The underlying cause for placenta previa is unknown, however there is some association between endometrial damage and uterine scarring. Prior cesarean delivery increases the risk of Pacenta previa,[6] increased incidence from 1.9% with 2 prior cesareans to 4.1% with 3 or more.[7] Previous placenta previa also increases the risk by 6 to 8 fold.

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Advancing maternal age increases the risk of placenta previa it is 1 in 100 for women older than 35 years of age.[8] Other risk factors are multiparity, history of D&C, smoking, use of cocaine,[3,9] infertility treatment and high altitude. Management of placenta previa depends on presentation, gestational age and degree of previa.[10,11] When mother's life is not at risk expectant management (McAfee-Johnson Regimen) will improve the outcome.[12]

Cesarean section the main etiological factor development of placenta previa and placenta accreta Spectrum (PAS) in successive pregnancies.[13] The scar tissue of the cesarean section stimulates the implantation of the blastocyst in the lower uterine segment of the uterus and may lead to abnormal attachment of the placental tissue with in and around the scar area.[14]

Women with a history of cesarean delivery presenting with an anterior low lying placenta or placenta previa have the highest risk of PAS disorders.[13] Prenatal diagnosis of PAS decreases the risk of complications at delivery due to massive intrapartum hemorrhage.[15]

MATERIALS AND METHODS

A prospective study conducted for a period of 1 year from January 2021 –December 2021 with clearance from the institutional ethics committee approval (Ref: IEC \2021 \044\SMC) obtained on date 06/03/2021. Informed consent was taken and 50 cases of placenta previa admitted to the ward and labour room were studied.

Statistical Analysis

Data collected and recorded in the proforma during the whole study period were entered in Microsoft Excel sheet and analyzed by using SPSS software version 21.0 to identify risk factors for maternal & perinatal morbidity and mortality, to compare it between scarred and unscarred uterus in placenta previa and to determine its statistically significance.

Inclusion & Exclusion Criteria

All women with singleton or Multiple pregnancy presenting with placenta previa after 28 weeks of gestation with or without scarred uterus were included. All the women with period of Gestation less than 28 weeks with low lying placenta or placenta completely covering the os, cases delivered with placenta previa and referred to our hospital with various other complications were excluded.

Age of the patient, Parity, gestational age and clinical features at presentation. Detailed history of present pregnancy and previous pregnancies were taken. Patients were examined per abdomen to know the gestational age, contractions, presentation. On per speculum examination there may be minimal bleeding to active bleeding sometimes the placenta is seen if the cervix is dilated. Vaginal examination should not be done to avoid massive hemorrhage. Blood investigations were done. Emergency ultrasound to confirm the placenta previa and fetal wellbeing. The simplest and most precise and safest method of placental localization is provided by transabdominal sonography.[16] If a transabdominal scan shows a placenta previa it should be confirmed by transvaginal ultrasound it is useful in measuring the distance between placental edge and the internal os and is superior and safe when compared to TAS.

Patients diagnosed with placenta previa were sent to Color Doppler scan to rule out adherent placenta, vasa previa when the umbilical cord is noted in lower uterine segment. MRI was done for selected cases who were obese, cases of posterior placenta or when adherent placenta is suspected. Cross matched blood should be kept ready. Expectant management (MCA fee-Johnson regimen) was done for cases who are hemodynamically stable, less than 36 weeks of POG and patients who are not in labor. Antenatal steroids are given to promote lung maturity and continued up to 36-37 weeks and then delivered by cesarean section. If the women are Rh negative, Anti-D immunoglobulin was given. Written informed consent for peripartum hysterectomy was taken if there is uncontrolled PPH or PAS. In case of PAS General surgery, Urology teams also involved. PPH is controlled by bimanual uterine massage, uterotonics, intra uterine balloon tamponade, B-lynch suture, Cho sutures, uterine artery or internal iliac artery ligation should be done. Few cases needed peripartum Hysterectomy due to adherent placenta and atonicity. PPH is observed in some cases and required massive transfusion. All the babies were sent to pediatrician, most of them were premature, low birth weight and needed NICU admission.

RESULTS

Table 1: age distribution

Age	Unscarred	Scarred	Percentage
20-25	10	17	65%
26-30	8	10	36%
>30	2	3	12%

Table 2: Parity

Parity	Unscarred	Scarred
0	12 (24%)	0 (0%)
1	4 (8%)	20 (40%)
2	3 (6%)	8 (16%)
3 or >3	1 (2%)	2 (4%)

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Table 3: Abortions history

Cases with	Unscarred	Scarred
H/o abortions	8 (16%)	4 (8%)
H/O D&C	5 (10%)	2(4%)

Table 4: Gestational age at delivery

Gestational Age	Unscarred	Scarred
28-32 weeks	3 (6%)	4 (8%)
32-34 weeks	1 (2%)	6 (12%)
34-37 weeks	10 (20%)	12 (24%)
>37 weeks	6 (12%)	8 (16%)
Total	20 (40%)	30 (60%)

Table 5: Types of placenta-previa

	Unscarred Uterus	Scarred Uterus
TYPE I	1 (2%)	4 (8%)
TYPE IIA	2 (4%)	1 (2%)
TYPE IIB	3 (6%)	6 (12%)
TYPE III	12 (24%)	10 (20%)
TYPE IV	3 (6%)	7 (14%)

Table 6: PAS in placenta-previa

PAS	Unscarred uterus	Scarred uterus
Present	1(2%)	3(6%)
Absent	19(38%)	27(54%)

Table 7: Peripartum hysterectomy in placenta previa

Peripartum hystrectomy	Unscarred uterus	Scarred uterus
Atonicity	1(2%)	1(2%)
Adherence	1(2%)	3(6%)

Table 8: Postpartum haemorrhage

Cases were	Unscarred	Scarred
With PPH	7(14%)	11(22%)
Massive transfusion needed	3(6%)	4(8%)
Hysterectomy done	2(4%)	2(4%)

Table 9: Distribution of birth weight among the cases

Birth weight	Unscarred uterus	Scarred uterus
<1.5 Kg	1(2%)	3(6%)
1.5-2 Kg	2(4%)	7(14%)
2-2.5 Kg	4(8%)	6(12%)
2.5-3 Kg	8(16%)	7(14%)
3-3.5 Kg	3(6%)	5(10%)
>3.5 Kg	2(4%)	2(4%)

Table 10: Perinatal mortality

	Unscarred	Scarred
ALIVE	19(38%)	27(54%)
DEAD	1(2%)	3(6%)

DISCUSSION

In our study we compared about the risk factors, Age, Parity in relation to placenta previa. Average gestational age of termination of pregnancy. It's occurrence in unscarred Vs scarred uterus & incidence of PAS, peripartum hysterectomy. Perinatal outcomes like birth weight, APGAR, NICU admissions.[16,17]

In our study the mean age group is 25.5 years. Major group is <26 years which is most fertile period, Maximum age in my study is 38 years. This finding was similar to the retrospective case control study conducted by Tuzovic and Ilijic. It states that advanced maternal age sixfold increases the risk of placenta previa.[18] Risk of placenta previa is 3.1 times more in multipara than in nullipara, similar to the study Tuzovic and Illijic and Kollmann et al.[19] History of abortion found to be significant factor in association with placenta previa with P value of 0.03, similar to study conducted by Ojha et al, previous history of abortions (both spontaneous and induced) have been significantly associated with up to three times risk of placenta previa.[20] In our study the mean gestational age of termination of pregnancy in both scarred and unscarred uterus together is 35.5 weeks POG and major group falls in between 34-37 weeks POG as 44% and <37 weeks is 72% including both scarred and unscarred uterus. PAS is seen in 4 out of 50 cases had placenta accreta of which 1 case found

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to be adherent diagnosed intra operatively and planned for peripartum hysterectomy. Relative risk of PAS in scarred uterus is 0.47.

In our study 6 peripartum hysterectomies were performed out of 50 cases. The cause was adherent placenta and atonicity. Total 22 cases had PPH intra operatively, 7 cases required massive transfusion and 2 cases underwent hysterectomy.

Recent advances and surgical techniques improved to the extent where severe cases of PPH can be managed by preserving the uterus without hysterectomy. Mean birth weight was 2.4 kg 46% of babies are <2.4 kg ie below mean. Neonatal outcome included 14 (28%) cases are early preterm (<34 wks), 22 (44%) cases are late preterm (34-37 wks), 14 cases (28%) are term (>37 wks). More babies are of late preterm (44%) which indicate there is a chance of preterm labour in placenta previa.

31 babies (62%) had APGAR <7 at 1 min of which 13 (26%) cases were admitted in NICU. In my study major degree of placenta previa is 64% and minor degree is 36%. One maternal death occurred, cause being irreversible shock at presentation.

Limitations: Limitations of the study was sample size is small to extrapolate its statistical conclusion. There are confounding factors in the form of Obstetrical and Medical complications in the patients with placenta previa which may be independent reasons for aggravating maternal and fetal morbidity.

CONCLUSION

Placenta previa is a leading cause of maternal mortality and morbidity, Cesarean deliveries, induced abortions should be reduced to decrease the incidence of placenta previa, Family planning should also to be emphasized towards the reduction of parity, cesarean section rate and thereby reduce the incidence of placenta previa. Multi-disciplinary approach including Obstetrician, General surgery, Anesthesia, Urology, Intervention Radiology, Pediatrics will improve maternal and perinatal outcome.

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