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Original Research Article

A study of obstetric and fetal outcome of placenta previa in scarred and unscarred uterus

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ABSTRACT

Background: This study was conducted to study the maternal and fetal outcome in case of placenta previa in a scarred and unscarred uterus.

Methods: This was 10 months' prospective study conducted in Sree Mookambika Institute of Medical Science, Kulasekharam in the year between January 2021 to October 2021, among the cases of placenta previa with scarred and unscarred uterus. During the study period out of 1882 deliveries 20 cases of placenta previa beyond 28 weeks of gestation were reported. These cases were divided into two groups, scarred uterus (group A) and unscarred uterus (group B).

Results: Incidence of placenta previa in scarred uterus (A) was higher than in unscarred uterus (B). Postpartum haemorrhage was seen in 25% of cases malpresentation was found in 55% of cases among which 5 cases in scarred group and in 6 cases in unscarred. Caesarean hysterectomy was performed in 1 case in scarred uterus. Neonatal intensive care unit was required for 15% of babies born to mother with placenta previa.

Conclusions: The risk of placenta previa increases with increase in number of previous caesarean section, increased parity and advanced maternal age. Postpartum hemorrhage and blood transfusion are not uncommon in both group. Planned management at a tertiary care centre is obligatory. Mode of delivery is by emergency LSCS in case of bleeding per vaginum or elective LSCS.

Keywords: Antepartum hemorrhage, Fetal malpresentation, Peripartum hysterectomy

INTRODUCTION

Placenta previa is an obstetric life-threatening condition with several maternal and fetal complications, which needs multidisciplinary approach for treatment.¹ It is a major cause of third-trimester hemorrhage which lead to maternal complications like caesarean sections, adherent placenta, fetal malpresentation, increased blood loss, shock, peripartum hysterectomy and prolonged hospitalization in these women and Neonatal ICU admission for premature deliveries, IUGR or other complications like still birth.^{2,3}

Placenta previa occurs when placenta abnormally attaches near to internal cervical os, due to abnormal vascularization of endometrium caused by scarring or atrophy due to previous caesarean, trauma or infection.⁴ These factors cause reduced growth of lower uterine segment which causes decreased fundal placental migration as pregnancy advances, i.e., failure of trophotropism.⁵

Recent revised classification of placenta previa consist of two variations: 1) placenta previa: internal os is covered partially or completely by placenta. 2) low lying placenta: Placental edge does not cross the internal os but lies within 2 cm away from os.^{4,5}

Risk factors of placenta previa includes advanced maternal age, multiple gestation, abortions, previous lower segment caesarean section (LSCS), smoking, uterine curettage, previous history of placenta previa.

Diagnosis of placenta previa is made by history taking in detail of their age, parity, gestational age and clinical features at presentation, detailed history of current pregnancy and previous pregnancies.⁶ Period of gestation at which placenta previa was diagnosed, also history of painless bleeding after 28 weeks of gestation is documented. Clinical examination which includes soft, relaxed, non-tender uterus, On Leopold's manoeuvres fetal malpresentation like breech, oblique or transverse is common due to the presence of placenta in the lower uterine segment.⁷ Ultrasound (transabdominal and transvaginal) transvaginal ultrasound is more accurate for measuring the distance between the placenta and cervical os as compared to transabdominal ultrasound. MRI has been used in patients with placenta previa, especially to diagnose adherent placenta.

Maternal complications of placenta previa are- antepartum hemorrhage, adherent placenta, postpartum hemorrhage (PPH), shock, and peripartum hysterectomy.^{6,8} Prolonged hospitalization in these women, perimartum caesarean section and maternal mortality.^{9,10} The fetal complications are malpresentation, intrauterine growth restriction (IUGR), premature delivery led to admission to neonatal intensive care unit and death.⁷

Aims

To evaluate the maternal outcome in placenta previa of both scarred and unscarred uterus. To evaluate the fetal outcome in placenta previa of both scarred and unscarred uterus.

METHODS

Study type, place and period

It was a prospective study. This study took place at Department of Obstetrics and Gynaecology, Sree Mookambika Institute of Medical Science, Kulasekharam in the year between January 2021 to October 2021.

Statistical analysis

Microsoft excel sheets were used for data collection. Data were tabulated as numerical variables and percentage for categorical variables.

Inclusion criteria

Pregnant women of all age group at or more than 28 weeks of gestation who had radiologically confirmed placenta previa. Antenatal mothers who were diagnosed as placenta previa irrespective of parity and complaints of bleeding.

Pregnant women coming to emergency department with bleeding per vaginum or who were admitted in antenatal ward with low lying placenta for safe confinement were included in the study

Exclusion criteria

Women presenting with bleeding per vaginum or low-lying placenta before 28 weeks of gestation. Ante partum hemorrhage other than placenta previa like abruptio placenta or any other local cause. Multiple pregnancy or pregnant women with hypertension, gestational diabetes or other comorbid conditions.

After approval of the study protocol by our institutional Research committee and Human Ethical committee, written informed consent will be taken from pregnant women attending obstetrics and gynaecology department, Sree Mookambika Institute of Medical Science Kulasekharam, who fulfilled the inclusion and exclusion criteria. Total of 20 women out of 1882 were included in the study. A detailed history was taken which included the patient's education, occupation, socio-economic status, menstrual history, obstetric history, past medical and surgical history and personal history. General examination was done at the time of admission which included vital signs especially temperature, maternal pulse, height and weight were noted. Presence of pallor and pedal oedema were looked for. Systemic examination included cardiovascular, respiratory system and CNS systems. In the obstetric examination following were noted, Height of uterine fundus, lie, presentation and position of fetus, engagement of presenting part, condition of uterus whether acting or relaxed. Fetal heart sound was auscultated and its rate, rhythm and tone were noted. Ultrasound was done to rule out placenta accreta syndrome.

RESULTS

Table 1 shows majority of the patients in this group were between age range of 20-30 years in both group A and group B. Primipara with placenta previa were 2 in group A and 1 in group B.

Table 1: Maternal characteristics.

Age (years)	Group A	Group B	Total
20-30	7 (35%)	8 (40%)	15 (75%)
30-40	3 (15%)	2 (10%)	5 (25%)
Parity			
Primi	2 (10%)	1 (5%)	3 (15%)
G2	3 (15%)	3 (15%)	6 (30%)
>G2	5 (25%)	6 (30%)	11 (55%)
Gestational age (weeks)			
28-37	3 (15%)	4 (20%)	7 (35%)
>37	7 (35%)	6 (30%)	13 (65%)

Table 2 shows majority were grade I placenta previa in both scarred and un scarred uterus.

Table 2: Grades of placenta previa.

Grades	Group A	Group B	Total
I	7 (35%)	8 (40%)	15 (75%)
II	1 (5%)	1 (5%)	2 (10%)
III	1 (5%)	1(5%)	2 (10%)
IV	1 (5%)	0 (0%)	1 (5%)
Total	10 (50%)	10 (50%)	20 (100%)

Table 3: Mode of delivery.

Mode of delivery	Group A	Group B	Total
Vaginal delivery	0	0	0
Elective LSCS	8 (40%)	6 (30%)	14 (70%)
Emergency LSCS	2 (10%)	4 (20%)	6 (30%)
Total	10 (50%)	10 (50%)	20 (100%)

Table 3 shows mode of delivery is by LSCS, none of the patient delivered vaginally. Out of which 14 patients delivered by elective LSCS and 6 patients delivered by emergency LSCS.

Table 4: Complications.

Complications	Group A	Group B	Total
Malpresentation	5 (25%)	6 (30%)	11 (55%)
PPH	2 (10%)	3 (15%)	5 (25%)
Shock	2 (10%)	1 (5%)	3 (15%)
Caesarean hysterectomy	1 (5%)	0 (0%)	1 (5%)
Maternal mortality	0	0	0
Total	10 (50%)	10 (50%)	20 (100%)

Table 4 compares the related complications between the two groups. 1 patient underwent caesarean hysterectomy in group A. More common complications were malpresentation which is about 11 out of 20 patients. Post-partum hemorrhage was experienced by 5 patients out of which 3 patients belong to group B and 2 patients belong to group A.

Table 5: Blood transfusion.

	Group A	Group B	Total
Yes	6 (30%)	5 (25%)	11 (55%)
No	4 (20%)	5 (25%)	9 (45%)
Total	10 (50%)	10 (50%)	20 (100%)

Table 5 shows blood transfusion were required in 55% of women out of which 30% belong to scarred uterus and 25% belong to unscarred uterus.

Table 6 compares the fetal outcome in both groups. Majority of the fetus has no complications, which indicates favourable fetal outcome, no still birth in our study.

Table 6: Fetal outcome.

Outcome	Group A	Group B
No major complications in baby	6 (30%)	7 (35%)
NICU admission	4 (20%)	3 (15%)
Still birth	0 (0%)	0 (0%)
Total	10 (50%)	10 (50%)

DISCUSSION

In a study conducted 61% of cases presented before the age of 30 years, maximum patients were in the age range of 26 to 30.⁴ Which was similar to our study in which 75% of cases were between the age of 20-30 years.

In our study placenta previa was seen majority in multiparous women (85%) and in primi para it accounts about 15% cases, which was similar to study conducted in which placenta previa was present mostly in multiparous with parity 1 to 5 that included 67% of cases.⁴

In our study there was no labour natural and emergency LSCS were 30%. In a study conducted two percent cases were delivered by vaginal route compared to other 98% cases by caesarean section which showed increased number of cesarean rates.⁴ Which is also comparable to a study in which rate of LSCS in present study was 95.5%, with vaginal deliveries being 4.5%.¹

In our study there was 1 cesarean hysterectomy and no maternal mortality and 25% of cases had post-partum hemorrhage. Another study showed that there was no maternal mortality but torrential PPH leading to peripartum hysterectomy was seen in 9% case with scarred uterus and 2 cases with unscarred uterus.⁴ Obstetric hysterectomy was required in 6.7% of scarred group compared to no case in unscarred group.¹

In our study 55% of cases presented with malpresentation which was comparable to malpresentation was found in 7 cases in scarred group.⁴ Similarly comparable to 1 case in unscarred not similar to in which malpresentation is found in about 35% cases.¹

In a study 10% of patients of scarred uterus needed massive blood transfusion whereas, no patient in unscarred uterus needed massive transfusion.² In our study 30% of scarred uterus needed blood transfusion.

In our study there was a favorable fetal outcome, where as another study conducted showed fetal morbidity and mortality was higher in scarred group.¹

The limitations of our study were that sample size is too small to come to a statistical conclusion and none of the patients with placenta previa opted for normal vaginal delivery expecting the risk of massive blood loss and need for blood transfusion. Hence counselling of the patient

about normal vaginal delivery in cases with grade 1 placenta previa is essential.

CONCLUSION

Antenatal mothers should be educated about institutional delivery in a tertiary care centre with multidisciplinary approach which includes senior obstetrician, anaesthetist, neonatologist, sonologist and haematologist. Women with high parity should be counselled about family planning. Early diagnosis by ultrasound and planned management by termination of pregnancy should be the goal and Doppler ultrasound should be done to rule out placenta accreta so that the obstetricians can be aware of the massive maternal hemorrhage and to reduce the morbidity associated with placenta previa.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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