

CLINICAL STUDY OF PLACENTA PREVIA IN A TERTIARY CARE CENTRE

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Introduction

Antepartum Hemorrhage and postpartum Hemorrhage are on forefront in deadly triad for maternal mortality followed by eclampsia and sepsis in India. In a report of Registrar General India in 1997-2003, hemorrhage accounts for 38% amongst all causes of maternal deaths¹. The estimated global prevalence of placenta previa is 5.2 per 1000 pregnant women, although there is significant international variation, whereby the prevalence is found to be highest among Asian studies².

Advancing maternal age, multiparity, prior cesarean section, and prior abortions are independent risk factors for placenta previa. Placenta previa remains a risk factor for adverse maternal and perinatal outcome. The detection of placenta previa should encourage a careful evaluation with timely delivery to reduce the associated maternal and perinatal complications³.

According to RCOG guidelines, the timing of delivery should be based on clinical scenario supplemented by sonographic information. In asymptomatic women, elective delivery by caesarean section is not recommended before 38 weeks of gestation for placenta previa, or before 36–37 weeks of gestation for suspected placenta accreta⁴.

The complication of placenta previa is limited not only to the antepartum period but also to the intrapartum and postpartum courses which can also be complicated with a high rate of caesarean delivery, peripartum hysterectomy, morbid adherence of placenta, and postpartum hemorrhage. Previous studies have estimated the rate of hysterectomy among women with placenta previa to be 5%. Pregnancies complicated with placenta previa have also a significantly higher rate of postpartum anemia and delayed discharge from the hospital.⁵

In the day-to-day practice, an obstetrician has to tackle life threatening condition of APH and take a timely judicious decision of terminating pregnancy, keeping in mind the welfare of both the mother and the fetus without exposing either of them to undue risk.

1. Aim and objectives

- To study socio-demographic factors & risk factors associated with placenta previa.
- To study clinical profile, maternal and perinatal outcome.

2. Material and Methodology

A prospective observational study conducted in the department of OBGY in tertiary care hospital from 2019-2021. The study was conducted after formal approval of institutional ethical committee. Total 202 samples were selected and who met the designed set of criteria. Informed written consent was taken from patients and their families.

Inclusion criteria:

1. All Pregnant women with diagnosed case of placenta previa confirmed by USG and gestational age beyond 28 weeks coming to labour room or diagnosed intraoperatively during LSCS will be selected irrespective of their parity, type of placenta previa who are willing to participate in study.

Exclusion criteria:

1. Pregnant who are not willing to give consent to study.
2. Other causes of antepartum haemorrhage like abruptio placenta, vasa previa.
3. Placenta previa with Less than 28 weeks of GA.
4. Pregnant women managed outside and referred for further management.

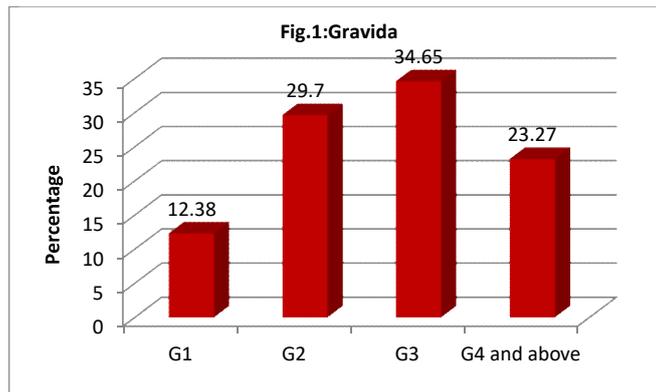
Clinical grounds for inclusion:

Calculation of gestational age was determined by the last menstrual periods and first-trimester ultrasound. The duration of bleeding and amount of bleeding (number of pads soaked, passage of clots) was estimated approximately. Pregnant women were asked, whether bleeding per vagina was associated with pain abdomen. The diagnosis of placenta previa was based on ultrasonography or during caesarean section. Placental localization done, and low-lying placenta is identified on USG, findings are confirmed at 28 weeks according to Brown's Classification.

3. Results

A total 202 cases in the study period were analysed. In the present study it was observed that in the most 93 (46.04%) in the age group of 24-25 and mean age was found to be 26.14 ± 4.53 .

Maximum numbers of mothers 114 (56.44%) cases were unbooked and most 126 (62.38%) were from rural area.

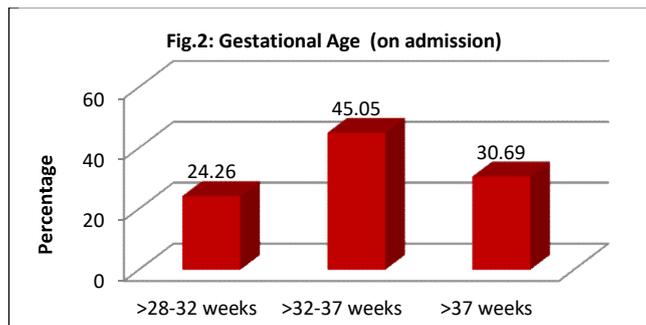


Maximum number of mothers 70 (34.65%) were G3 followed by G2 among 60 (29.70%), 47(23.27%) were G4 and above and G1 (primi gravida) were 25 (12.38%).

Table.1: Gravida

S.N.	Gravida	Frequency	Percentage
1	G ₁	25	12.38
2	G ₂	60	29.70
3	G ₃	70	34.65
4	G ₄ and above	47	23.27
	TOTAL	202	100

Majority 166 (82.18%) of participants were diagnosed case of placenta previa before the time of admission.



Most of mothers 91 (45.05%) had gestational age (GA) >32-37 weeks followed by 62 (30.69%) had GA between >37 weeks (fig.2). About 26.24% had previous history LSCS and 22.28% had history of curettage.

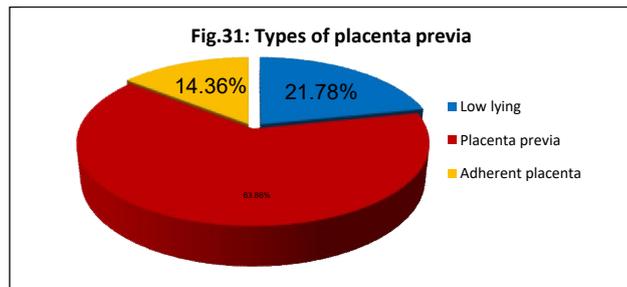
Regarding risk factors identified 53 (26.24%) had h/o of previous LSCS, 45 (22.28%) had h/o of previous curettage, 5 (2.48%) had h/o of Placenta previa and 02 (0.99%) had h/o of multiple pregnancy.

Table:2 High Risk Factors

SN	High risk factors	Freq.	%
1	Previous H/o LSCS	53	26.24
2	Previous H/o curettage	45	22.28

3	Previous H/o Placenta previa	05	02.48
4	Multiple Pregnancy	02	00.99
5	No any associated factor found	116	57.43

In the present study maximum number of mothers 129 (63.86%) had complete placenta previa followed by 44 (21.78%) had low lying placenta and 29 (14.36%) had adherent placenta.



About 126 (62.38%) had undergone emergency LSCS followed by 35 (17.33%) had elective LSCS, 32 (15.84%) underwent Obstetric hysterectomy (OH).

Table 3: Mode of Delivery

SN	Mode of delivery	Freq	%
1	Elective LSCS (Safe confinement)	35	17.33
2	Emergency LSCS	126	62.38
3	Emergency LSCS f/b Obstetric Hysterectomy	32	15.84
4	Vaginal Delivery	09	04.46
	TOTAL	202	100

About 134 (66.34%) had B/L Uterine artery compression suture intra-operatively followed by 60 (29.70%) had haemostatic suture (Cho suture), 20 (9.90%) had Internal iliac artery ligation. 32 (15.84%) mothers had undergone Obstetric hysterectomy, out of which 29 were due to adherent placenta, while 3 mothers of placenta previa went into atonic PPH.

Table 4: Additional procedures

S.N.	Type of delivery	Freq	%
1	B/L Uterine artery compression suture	134	66.34
2	Hemostatic suture (Cho suture)	60	29.70
3	Internal iliac artery ligation	20	09.90
4	Obstetric hysterectomy	32	15.84

Table 5: Intraoperative and postoperative complications

S.N.	Intra op complication	Frequency	Percentage
1	Bladder injury	05	02.48
	Post op complication		
1	Fever	53	26.24
2	Surgical Site Infection	19	09.41
3	Required ICU monitoring	75	37.13
4	Thrombophlebitis	08	03.96
5	Acute kidney injury	03	01.49

In the present study intraoperatively 5 (2.48%) mothers had bladder injury. Post-operatively about 75 (37.13%) required ICU monitoring, 53 (26.24%) had fever post operatively, 19 (9.41%) had Surgical Site infection, 08 (3.96%) had thrombophlebitis and 3 cases had acute kidney injury post-operatively.

In the present study almost 201 (99.50%) mothers got discharged and 1 (0.50%) mother died during study period.

Table 6:Fetaloutcome

SN	Fetal Outcome	Freq	%
1	Alive	167	82.67
2	Still birth	19	09.41
3	Early neonatal death	16	07.92

4. Discussion

In present study most of pregnant women 93 (46.04%) were in the age group of 21-25. The mean age was found to be 26.14 ± 4.53 . Wasnik SK. et.al.⁶ found that most of women 39% were in age group of 26-30 years. Similarly, Chufamo N. et al.⁷ found that 72.9% women were in age group of 20-29 years with mean age of $26.6 + 4.5$ years. Senkoro EE et.al.⁸ and Sanglakpam HD.et.al.⁹ found mean maternal age was to be 29.07 and 28.24 respectively.

In present study majority of pregnant women 70 (34.65%) were gravida 3 followed by Gravida 2 having 60 (29.70%), gravida ≥ 4 having 47 (23.27%) and primi gravida having 25 (12.38%). Similarly in study by Prasanth S. et.al.¹⁰ found that maximum participant 36.20% were gravida 3. Also, according to study by Kumari S. et.al.¹¹ reported that most of women i.e. 60% were gravida 2 & 3. Rangaswamy M. et.al.¹² reported that maximum pregnant women were G2 (33.87%) and G3 (27.42%). It was also found in previous studies that there was correlation between multiparity and placenta previa

In the present study most of mothers 91 (45.05%) had gestational age (GA) >32-37 weeks followed by 62 (30.69%) had GA between >37 weeks and 49 (24.26%) had GA between >28-33 weeks. Similarly, study done by Bhatt AD et.al.¹³ reported that maximum study participants (43.18%) GA was between >32-37 weeks. Chufamo N. et.al.⁷ found that maximum women's (53.3%) GA were >37 weeks and 27.7% had GA between >32-37 weeks. Rangaswamy M et.al.¹² reported majority (53.23%) had GA > 37 weeks, 30.65% had GA between 28-33 weeks and 16.13% had GA between 32-37 weeks.

In our study we found 63.86% had complete placenta previa, 21.78% had low lying placenta and 14.36% had adherent placenta. In a study done by Sharma T. et.al.¹⁴ reported that 48.19% women had placenta previa and 51.82% had low lying placenta and abruptio placenta in 4.46% of study participant. Similarly, Prasanth S. et.al.¹⁰ reported that 72.26% had placenta previa, 14.30% were low lying placenta and 13.44% had adherent placenta among study population. Khirasaria DM. et.al.¹⁶ most of women 96.67% had placenta previa and 3.33% cases were adherent placenta.

In our study the risk factors studied were h/o of previous LSCS in 26.24% women also 22.28% had h/o of previous curettage, 2.48% had h/o of placenta previa and 0.99% had h/o of multiple pregnancy. Similarly in study done by Prasanth S. et.al.¹⁰ reported that 39.08% pregnant women had history of previous caesarean, 37.93% underwent previous curettage and 0.5% women were of multiple pregnancy was identified as a high-risk factor for placenta previa. Also, in study conducted by Sharma N. et.al.¹⁵ reported high risk factors such as h/o previous LSCS in 26% women and 5% had h/o previous curettage and 4% were of multiple pregnancy. Chufamo N. et.al.⁷ reported high-risk factors such as h/o previous LSCS (32.14%), h/o previous curettage (2%) and multiple pregnancy (10.7%) in their study. Emphasizing that previous LSCS and h/o curettage are important risk factors for placenta previa in subsequent pregnancy.

Table 7: High Risk factors

Study	Chufamo N. et.al. ¹⁶	Prasanth S. et.al. ¹⁴	Khirasaria DM. et.al. ¹⁷	Sharma N. et.al. ¹⁵	Present study
H/o LSCS	32.14%	39.08%	13.33%	26%	26.24%
H/o curettage	2.00%	37.93%	10%	5%	22.28%
Multi. Pregnancy	10.7%	0.5%	-	4%	00.99%

In our study common mode of delivery was emergency LSCS 126 (62.38%) followed by Elective LSCS (Safe confinement) in 35 (17.33%), emergency LSCS followed by obstetric hysterectomy in 32 (15.84%) and vaginal delivery in 9 (4.46%) of pregnant women. Findings correlate to study done by Bhatt AD. et.al.¹³ in which most mothers (60%) with placenta previa underwent with emergency LSCS, 36.36% by vaginal delivery and obstetric hysterectomy in 2.27% of women. Similarly, Wasnik SK. et al.⁶ found that out of 124 women's 90% delivered by emergency LSCS, 7% by elective LSCS and obstetric hysterectomy done in 3% of mothers. In a study conducted by Rangaswamy M. et.al.¹² reported 90.16% cases of placenta previa were delivered by emergency caesarean section, elective LSCS in 5% and lesser degrees of previa had vaginal delivery (4.84%).

During intraoperative management the methods used for control bleeding in our study were B/L Uterine artery compression suture 134 (66.34%), Haemostatic suture-Cho suture 60 (29.70%), internal iliac artery ligation 20 (9.90%). In 8.91% cases incision was taken on upper uterine segment and in 3.47% case vertical midline incision was taken during LSCS. Obstetric hysterectomy was done in 15.84% women due to uncontrolled bleeding. In study conducted by Jaiswal E et al.¹⁷ among placenta previa women's LSCS done in 82% cases,

Classical CS in 18%, Placental bed sutures in 39.2%, ligation of uterine artery in 13.8%, ligation of internal iliac artery in 1.5%, Bakri balloon in 4.6% and hysterectomy was done in 19.3% of women. Sharma T. et.al.¹⁴ reported that 2.6% cases managed by cervico-isthmic stitches, 9.8% by B-lynch stitches, 5.2% by uterine artery ligation, 7.2% cases underwent emergency peripartum hysterectomy when bleeding could not be controlled by conservative methods.

Table 8: Post-operative complication

Study	Wasnik SK. et.al. ⁶	Fatemeh C. et.al. ¹⁸	Sidhiq MC. et.al. ¹⁹	Sharma N. et.al. ¹¹	Present study
Fever	12.15%	6.24%	3.1%	7.5%	26.24
Surgical Site Infection	1.5%	2.33%	2.4%	2.5%	9.41
ICU monitoring	6.45%	37.9%	12.5%	22.5%	37.13

Post operatively 53 (26.24%) women were febrile, Surgical Site infection was seen 19 (9.41%) of women, 75 (8.91%) women required ICU monitoring post operatively, thrombophlebitis seen in 3.96% cases and 0.5% had develop AKI post-operatively. Also, in our study 98.02% women required blood transfusion with mean 4.01. Similarly in study conducted by Wasnik SK. et.al.⁶ reported febrile morbidity in 12.15% women, 6.45% required ICCU monitoring and Surgical Site infection in 1.5% of study participant. Also, Sharma N. et.al.¹⁵ reported fevers in 7.5%, Surgical Site infection in 2.5% and ICU monitoring in 22.5% of women postoperatively. Fatemeh C. et.al.¹⁸ showed complications like fever in 6.24%, Surgical Site infection in 2.33% and ICU monitoring in 37.9% of women.

In present study regarding fetal morbidity 42.05% babies required NICU admission, 65.35% were premature, 9.41% were still birth babies, 2.97% were IUGR, 1.98% babies required neonatal resuscitation and 0.99% were anomalous babies. Prasanth S. et.al.¹⁰ reported 44.30% required NICU admission and 0.57% of neonatal death. In study by Khirasaria DM. et.al.¹⁶ reported 23.34% required NICU admission and 6.66% were neonatal death. In study by Sharma T. et.al.⁹¹ 54.92% neonates required ICCU monitoring and early neonatal death in 2021% after delivery. Our other findings are comparable to studies shown in table 40.

Regarding outcome of pregnancies with placenta previa in our study showed that 99.50% mothers got discharged from hospital. One unbooked mother who referred from outside was died during study period with cause of death was pulmonary embolism with irreversible shock in a case of obstetric haemorrhage in a P3L2D1 with previous LSCS with placenta accrete. Prasanth S. et.al.¹⁰ reported 1.72 % died during the peripartum period. Kumari S. et.al.¹¹ reported 2.85% maternal death. In study by Sharma T. et.al.¹⁴ maternal mortality was 2.59% among placenta previa women.

5. Conclusion

Placenta previa is a very high-risk pregnancy. High suspicion is necessary in early warning hemorrhage and necessary evaluation shall be done. Special antenatal care and improving anemia to face blood loss during delivery is must Placenta previa in previous caesarean section cases has high chances of placenta accreta spectrum and should be evaluated in all cases of previous caesarean section. Cases of placenta previa should be manage at tertiary care center or a center equipped with all facilities.

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