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Original Research Article

Feto maternal outcome in placenta previa and morbidly adherent placenta

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ABSTRACT

Background: Placenta forms the most important link between the developing foetus and the mother. The placenta's health is crucial for the foetus' proper growth and development. The outcome of pregnancy is changed when there is a change in the placental location or architecture for both the mother and the foetus. No matter the cause, placenta previa increases maternal and foetal risks by several times. Aim and objectives of current study are to investigate the incidence of placenta previa in hospital obstetric patients and the maternal and fetal outcome in cases of placenta previa.
Methods: 100 patients delivered in the Govt. Medical College, Kota with cases of placenta previa. Risk factors like Gestational age at the onset of bleeding, expectant management, gestational age at delivery and the mode of delivery. The birth weight and APGAR score of the newborn were observed.
Results: The risk of placenta previa is 3 time higher in multigravida than primigravida. 52% chances of placenta previa with male babies. Peak incidence of bleeding is noted around 34-36 weeks. 92% of placenta previa cases were delivered LSCS. PPH was main morbidity out of all morbidities. 55% of babies were less than 2.4 Kg. 44% were anterior, 38% posterior and rest 6% central placenta previa.
Conclusions: Placenta previa poses a serious risk to both the mother and the foetus, whether it is accidentally discovered by ultrasound or as a result of a clinical emergency like a haemorrhage in the mother. The best outcome can be achieved with an accurate diagnosis, prudent expectant management, blood transfusion as necessary, and prompt delivery.

Keywords: Placenta previa, LSCS, PPH, GA

INTRODUCTION

Placenta forms the most important link between the developing fetus and the mother. Normal situation of placenta is very vital for appropriate growth and development of fetus. Once there is a change in placental location or architecture outcome of pregnancy with regards to both the mother and the fetus is altered.[1] The placenta in majority of cases is situated in the upper uterine segment usually near the fundus on the posterior wall of the uterus and less frequently on the anterior wall. But unfortunately, due to one or other causes placental position may alter, lying wholly or partially in the lower uterine segment resulting in placenta previa.[2] Regardless of etiology maternal and fetal risks are increased by several folds in case of placenta previa; in mother, the risks are mainly due to life threatening antepartum hemorrhage and also there's increased incidence of puerperal sepsis and postpartum haemorrhage. This is because the lower segment to which the placenta is attached contracts less well post- delivery. Chances of abnormal adherence of placenta is also increased several fold. With regard to

baby, incidence of LBW, IUGR, preterm deliveries and congenital malformations are increased.[3] The maternal and neonatal outcome can be definitely improved in placenta previa as it can be diagnosed by antenatal USG even before the first episode of bleeding. Once the condition is diagnosed, the case should be judiciously managed and all steps required should be taken to treat the complications associated with such cases. These cases are to be managed only in centers where there are facilities for blood transfusion, immediate operative intervention and NICU facilities round the clock to attend to the usually preterm babies. Even better ANC and thorough screening of the patient with second trimester scan, better referral system, transport and more hospitals with 24 hours blood bank facility are the need of the hour. All these measures can probably bring down the maternal and perinatal mortality and morbidity rate and achieve the standards of developed countries.[4] We must re-assimilate our resources and plan a strategy to filling the above-mentioned lacuna for the prosperous future of our action.

Aim and objectives

Aim and objectives of current study were to study the incidence in hospital obstetric patients and high risk factors predisposing to placenta previa and to study the maternal and fetal outcome in cases of placenta previa.

METHODS

This prospective analytical study was performed in Govt Medical College and J. K. Loan Mother & Child Hospital, Kota. 100 patients with pregnancies, placenta previa and its fetal outcome for a period of two years January 2021 to December 2022. All the cases of placenta previa admitted were studied in detail. women who delivered during the same period were taken as control. Age of the patient, booking status, details of obstetric history, including previous pregnancy outcome, number of previous normal deliveries, number of previous LSCS, its indications, elective /emergency sections, postoperative events, interval between two pregnancies, number of previous abortions, spontaneous or induced, certified/uncertified are collected. Gestational age at the onset of bleeding, expectant management, gestational age at delivery and the mode of delivery were studied. The birth weight and APGAR score of the new-born was also taken.

RESULTS

Maximum number of placenta previa cases were in the age group of 25-29 years which is the period corresponding to the maximum fertility and also represents the greatest proportion of population in our study. The risk of placenta previa is 3 times higher in multi gravida than in primi gravid. The incidence of placenta previa increasing in previous caesarean section. On admission 82% of patients had bleeding per vaginum as their main complaint. Only 17% of cases were admitted with pain abdomen and rest 1% admitted for leaking PV complain. Most of placenta previa cases are delivered as LSCS with good fetal outcome.

Table 1: Distribution of cases according to age, gravidity, placenta previa in previous cesarean, presenting symptoms

Parameters		N	%
Age (years)	<20	1	1
	20-24	20	20
	25-29	57	57
	30-34	13	13
	>35	9	9
Gravidity	Primi	21	21
	Multi	79	79
Previous LSCS	Yes	43	43
	No	57	57
Symptoms	bleeding	82	82
	pain	17	17
	Oligo (Leaking PV)	1	1

Table 2: Distribution of cases according mode of delivery, maturation, fetal outcome, NICU admission and birth weight

Parameters		N	%
Mode of delivery	Vaginal	7	7
	LSCS	84	84
	Hysterotomy	1	1
	LSCS	8	8
Maturation	Term	56	56
	Preterm	44	44
Fetal outcome	Alive	89	89
	Still birth	11	11
NICU Admission	Yes	21	21
	No	79	79
Mean Birth weight		2.2±0.688	

Table 3: Distribution according types of placenta previa in cases and incidence of malpresentation in placenta previa cases.

Parameters		N	%
Type	Posterior	38	38
	Anterior	44	44
	Central	6	6
	Placenta percreta	3	3
	Placenta accreta	9	9
Presentation	Vertex	78	78
	Breech	10	10
	Unstable	3	3
	Transverse	7	7
	Oblique	2	2

Incidence of preterm babies in placenta previa cases were around 44%. 11 out of 100 babies are born still birth due to premature onset of bleeding. 21% of babies required NICU admission. Mean birth weight of babies was 2.2 kg. There were 44% anterior placenta previa, 38% posterior

placenta previa cases, rest 6% were central placenta previa. There were 12% morbidly adherent placenta previa, in which 9% were placenta accreta and 3% placenta percreta. PPH was main maternal morbidity. 37 patients required blood transfusion. Prematurity and asphyxia are major cause of perinatal admission and deaths in NICU.

Table 4: Management and maternal morbidity in placenta Previa.

Parameters		N	%
Complication	Shock/hypertension	6	6
	Sepsis	5	5
	Febrile morbidity	4	4
	PPH	14	14
	OH	8	8
PPH management	Blood transfusion	37	37
	Uterotonic drug	63	63

Table 5: Cause of perinatal mortality in NICU admitted case.

Parameters	Perinatal morbidity		Mortality	
Cause of death	**N**	**%**	**N**	**%**
Asphyxia	5	5	5	5
Prematurity	7	7	4	4
IVH	1	1	1	1
RDS	3	3	2	2
LBW	5	5	0	0

DISCUSSION

In present study the incidence of placenta previa was highest in the age group of 25-29 years i.e., 57%, followed by women in the 20-24, 30-34, >35 year and <19-year age group, i.e. 20%, 13%, 9%, and 1% respectively. Similar to ours majority in study by Shruthi P et al[5] maternal age group with placenta previa was 20-29 years i.e. 72.9%, followed by 20.3% in 30-35 years, 1.7% in <19 years and 5.1% in >35 age group. The mean maternal age was 27.43±4.5 years. The incidence of placenta previa was highest (79%) in multigravida (with two to three viable births). The incidence in Primi was 21%, which correlates with other study by Peng et al, highest incidence was in multiparous group (76.19%).[6] Retrospective analysis of 100 cases of placenta previa showed an incidence of 57% in an unscarred uterus, 43% after caesarean section. The risk of placenta previa is increased in a pregnancy immediately following caesarean section. Ananth et al showed the prevalence rate of placenta previa is 4.0/1000 births and advancing maternal age multi parity, previous caesarean delivery and abortion smoking cocaine use during pregnancy and male foetuses all confirmed increased risk for placenta previa.[7]

In our study antepartum bleeding was present in 82% cases. In emergence with placenta previa, antepartum bleeding is a strong predictor of preterm delivery. 1st trimester bleeding is a risk factor for preterm delivery. Usually, pain abdomen is absent in placenta previa unless the patient is in labor, and when associated with abruption placenta. In 2 of our cases retroplacental clot was present. In this study 17% patients had complaints of pain and only 1% case had leaking p/v. According to Fishman et al of 113 singleton pregnancies with placenta previa, 54 (48%) delivered at term and 59 (52%) delivered preterm. Fifty-one (45%) experienced antepartum bleeding at a median gestational age of 31 weeks (29-33 weeks) with a median interval of 20 days (11-33 days) between first bleeding episode and delivery.[8] Women with antepartum bleeding were more likely to be delivered for hemorrhage (36 of 51 vs. 8 of 62, p<0.001) and delivered emergently (40 of 51 vs. 14 of 62, p<0.001).

Rao et al reported that 25% cases bleed before 32 weeks. In the series of Hibbard et al, bleeding occurred before 36 weeks in 50% of placenta previa cases.[6,9,10] In our study modes of deliveries like LSCS were (92%), vaginal were (7%) and hysterotomy was (1%) cases. There has been a profound increase in caesarean section rate and improvement in perinatal maternal outcome has been attributed. Similarly, Erfani et al reported out of 304 patients with placenta previa, 154 (50.65%) had an antenatal and 10 (3.28%) had an intraoperative diagnosis of morbidly adherent placenta.[11] 57.1% underwent planned caesarean delivery and 42.8% required emergent caesarean delivery due to uterine contractions and/or bleeding. Baseline characteristics were similar except for the gestational age at delivery (36.0 weeks, 36.0, 37.0) in PCD versus 34.0 weeks (32.0, 36.0, in ECP, p<0.001). Composite maternal morbidity was not significantly different between two groups: 11 (18.3%) in ECD and 10 (12.5%) in PCD (p=0.35). In our study 56% delivered at term and 44% at preterm and incidence of preterm is 44% (p<0.0001). Fishman, Shire et al[4] observed similar findings as of 113 singleton pregnancies with placenta previa 48% delivered at term and 52% delivered as preterm.

In our study 11 out of 100 babies were stillbirth. There were many causes like preterm delivery, abruption, rupture uterus, prematurity of fetus etc. Twenty-one babies were admitted in NICU. Twelve out of 21 admitted cases were perinatal deaths. Asphyxia (5 cases) and prematurity (4 cases) were the major contributors. This was followed by RDS 2 cases and Intraventricular hemorrhage in 1 case. There are 44% anterior placenta, 38% posterior placenta and 6% central low lying. Shruthi et al observed 17.81% patients had minor type of placenta previa and 82.16% patients had major type of placenta previa (p=0.02).[5] PPH occurred in 22 cases, hysterectomy was done in 8 cases and rest 14 cases managed conservatively by uterotonic drugs. Five cases has wound sepsis, 6 cases has shock/hypotension which was managed conservatively and by blood transfusion and 4 cases shows febrile morbidity and none of the case with placenta previa expired, which is correlate with above studies.

Zlantnik et al patient with previa were more likely to be diagnosed with postpartum hemorrhage (59.7% vs. 17.3%; p<0.001) and to receive a blood transfusion (11.8% vs. 1.1%; p<0.001).[12] According to Shruthi et al patients with placenta previa and scarred uterus had 16% risk of undergoing emergency peripartum hysterectomy compared to 3.6% in patient with unscarred uterus.[5] Total hysterectomy is the recommended surgical method of emergency peripartum hysterectomy due to the potential risk of malignancy developing in the cervical stump and the need for regular cytology. According to Cheng et al the rate of morbidly adherent placenta with previous caesarean section scar and unscarred uterus also increased significantly.[13] Previous caesarean section (odds ratio=24) and co-existing placenta praevia (odds ratio=585) remained the major risk factors for morbidly adherent placenta. With an increasing rate of morbidly adherent placenta, more patients had hemorrhage with a consequent increased need for peripartum hysterectomy. No significant difference in the hysterectomy rate of morbidly adherent placenta in caesarean scarred uterus (19/25) compared with unscarred uterus (8/14) was noted.

The pre-operative risk factors like previous history of CS, placenta previa accreta and should be identified and referred to the tertiary center. Proper surgical measures such as hemostatic sutures or uterine or hypo gastric artery ligation or embolization are options in whom future fertility is important and who are relatively hemodynamically stable. When conservative treatment is not feasible or has failed, prompt emergency peripartum hysterectomy is performed which the delay would contribute to the maternal morbidity and in unfortunate cases mortality. In our study out of 89 alive child's, 21 babies admitted in NICU due to asphyxia, prematurity, Low birth weight, Intraventricular hemorrhage, RDS, 12 out of 21 admitted babies expired due to cause of asphyxia, prematurity, RDS, IVH in descending order. Perinatal mortality was more in <33 wks babies (7 cases), at 34-36 wks there were 4 babies and after 37 weeks there was only 1 baby expired. In term pregnancy there are better perinatal outcomes than preterm delivery (p<0.0001). Shruthi et al 1.6%, 44.3% of babies received resuscitation and NICU admission. 39.34% of babies recovered. 22% of babies required resuscitation. Out of 2 cases of perinatal deaths, extreme preterm and prematurity were the major contributors to the extent of 3.27% and 1.63% respectively. In that study perinatal deaths were higher in the gestational age group of 28-33 weeks and the perinatal mortality was 78%. The perinatal mortality 34-36 weeks group was 0%. This shows that the PNM rates are low for term fetuses.

In our study 55 babies had birth weight <2.5 kg and the rest 45 babies had >2.5 kg. There were 71.42% chances of fetal mortality in preterm babies <33wks and only 3.57% chance at term, which proves that the term child has good perinatal outcomes. Wasim et al showed fetal outcome was good in patients with MAP and placenta previa with majority (73.2% vs 65.6%) delivering after 36 weeks, with good APGAR and babies having birth weight ≥2.5 kg and only three neonatal deaths due to prematurity (p>0.05).[14] Regional anaesthesia may be safely administered in cases of placenta previa. Anticipation of the clinical complications like PPH and conservative management may avoid serious consequences. Since the incidence of preterm and low birth weight babies is high in cases of placenta previa delivery must be conducted in a tertiary care centre with good neonatal setup.

CONCLUSION

Placenta previa, whether found fortuitously by ultrasound or with the clinical emergency of maternal hemorrhage carries significant maternal and fetal risk. Accurate diagnosis, judicious expectant management with blood transfusion are required and timely delivery can lead to the most favourable outcome. The current study suggested there is association between advancing maternal age, gravidity parity previous abortion and caesarean sections as increased risk factors for placenta previa. Since the incidence of preterm and low birth weight babies is high in cases of placenta previa delivery must be conducted in a tertiary care centre with good neonatal setup.

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