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Original Research Article

Maternal and perinatal outcomes in pregnancy associated with placenta previa

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ABSTRACT

Background: Placenta previa is associated with increased maternal and perinatal complications like malpresentation, premature labor, higher rates of caesarean section, peripartum hysterectomies, postpartum hemorrhage, sepsis, shock and retained placenta and even death. Antepartum haemorrhage may frequently result in low birth weight babies, preterm labour or repeated small events of haemorrhage causing chronic placental insufficiency and foetal growth retardation or intrauterine fetal death.
Methods: This was a prospective study conducted in the department of obstetrics and gynaecology, SMGS, hospital, Jammu over a period of 1 year. All admitted cases of placenta previa were included in the study.
Results: The total numbers of deliveries in one our hospital were 18567 during the study period. 364 patients admitted with antepartum heamorrhage so the incidence of APH in our hospital was 1.96%. 157 cases out of 346 were of placenta previa. It was observed that placenta previa cases were highest in the maternal age group of 26-30 yrs, i.e. 55.42%, 71.97% were multigravidae and 26.75% with prior caesarean section. 15.92% had undergone peripartum hysterectomy due to massive PPH. The percentage of perinatal death was 18.23% and the main cause was prematurity.
Conclusions: Based upon observation made during this study, it is concluded that placenta previa is a serious condition with significant maternal and perinatal morbidity and mortality. Improvements in management of placenta previa have helped in improving neonatal survival and reduce maternal morbidity and mortality.

Keywords: Placenta previa, Maternal, Fetal outcome

INTRODUCTION

Antepartum haemorrhage is bleeding from genital tract after 20 weeks of gestation until delivery in industrialized countries and 28 weeks in countries with low resource settings lacking adequate neonatal facilities. It is the one of the major contributors to obstetric emergencies in our health facilities.[1,2] Antepartum haemorrhage can be due to placental previa , Abruptio placenta, extra placental causes like cervical polyp, cervical erosions, endocervical erosions, cancer of the cervix, cervicitis, varicosities, vaginal infections, foreign bodies, genital lacerations, bloody show, degenerating uterine myomata, Vasa previa or may be of undetermined origin.[3] Reported incidence for placenta previa average 0.3% or 1 case per 300 to 400 deliveries. [4] Classification of placenta previa according to ultra sound are; complete previa-the placenta completely covers the internal cervical osos. Incomplete previa-the placental edge is within 2 cm of the internal cervical OS, but does not cover the OS. Low-lying previa-the distance from the internal cervical OS to the placental edge is between 2 and 3.5 cm.[5,6]

The use of transvaginal ultrasonography is resulting in a much lower incidence of placenta previa because transabdominal USG is associated with high false positive rate.[7] The risk of previa increases with advancing maternal age and parity. Women older than 40 years have nearly nine fold greater risk than women under the age of 20.[8] The risk increase linearly with the number of previous caesarean section up to 10 % in patients with four or more. A second pregnancy within a year after caesarean delivery has 1.7 times higher incidence of previa.[9] The other risk factors are; twins, previous abortions, cigarette smoking and maternal cocaine and opiate use. The recurrence rate of placenta previa is 2.4%.

The maternal complications in patients with APH are malpresentation, premature labor, postpartum hemorrhage, sepsis, shock and retained placenta. Patients with APH have higher rates of caesarean section, Peripartum hysterectomies, massive haemorrhage and even death. Antepartum haemorrhage may frequently result in low birth weight babies. This can be an effect of preterm labour or repeated small events of haemorrhage causing chronic placental insufficiency and foetal growth retardation. The overall perinatal mortality ranges between 4-8%. Maternal mortality due to placenta previa has significantly decreased in developed countries due to better obstetrical outcome. In India, maternal and perinatal mortality is still very high due to associated problem like anemia, difficulties in transport in case of emergency and restricted medical facilities. Therefore this study was planned to study maternal and prenatal outcome in patients of Placenta previa so as to outline the important cause, proper management of the patient in order improve both the maternal and perinatal in developing country like ours to improvise the same.

METHODS

The present study was conducted in the department of obstetrics and gynaecology, SMGS hospital, Government medical college Jammu over a period of 1 year after approval of institutional ethics committee. It was a prospective study. All cases of antepartum haemorrhage with clinical finding and ultrasound report of placenta previa, fulfilling the inclusion criteria were studied after obtaining consent.

All case of placenta previa ≥28 weeks of gestational age were included in the study. All cases of APH <28 weeks and patients of placenta previa suffering from any bleeding disorder were excluded from the study. On per speculum examination confirmations of bleeding through OS were noted as to excluded any bleeding from local injury/lesion or trauma. Management of the patient was done according to standard guidelines, types of placenta previa, maternal status at the time of admission & foetal status as immediate delivery, induction, caesarean section, conservative or expectant management.

Maternal and perinatal outcome were noted. Mode of delivery and birth weight of foetus were noted. Patient of placenta previa and neonates were followed till discharge from hospital. Observations were tabulated in MS Excel and analysed using SPSS statistical software.

RESULTS

The total number of deliveries in our hospital were 18567 during the study period of 1 year. 364 patients were admitted with antepartum heamorrhage. So the incidence of APH in our hospital was 1.96%. Out of 364 patients, 193 patients satisfied with inclusion criteria of placenta previa, 30 patients had mild bleeding and were managed expectantly and discharged undelivered when bleeding settled down. 6patients lost follow up, outcome date of 157 patients of placenta previa is presented here. As the aim of study was to study the maternal and perinatal outcome only in placenta previa, So the abruptio placentae and indetermined cases were not included in calculation.

Table 1: Distribution according to age, gravidity and types of placente previa (n=157).

Age (years)	N	%	Gravidity	N	%	Type of PP	N	%
<20	2	1.27	1	44	28.03	Type I	33	21.01
20-25	45	28.66	2	54	34.40	TypeII	38	24.20
26-30	87	55.42	3	36	22.93	TypeIII	29	18.47
31-35	21	13.38	≥4	23	14.64	TypeIV	57	36.32
>35	2	1.27	-	-	-	-	-	-

Mean age = 27.44±3.82 years.

In the present study 157 cases of placenta previa were studied regarding the type, clinical course, maternal and perinatal outcome. It was observed that maximum number of placenta previa were highest in the maternal age group of 26-30 yrs, i.e. 55.42. The mean age in the present study was 27.44±3.82 years. 71.97% (113/157) cases of Placenta Previa were multigravidae. Among The types of placenta previa, types IV (36.32%) was the most common (Table 1).

Among the patients history of prior caesarean section was present in 26.75 % and prior abortion in 14.02 %. 9.55% had prior history of both abortion and caesarean section. Other associated obstetrical high risk factors were also studied (Table 2). The various maternal and fetal complications were noted (Table 3). Amongst the maternal complications PPH was most common and noted in 38.22 % of cases of placenta previa. 89.80 % (141/157) cases of placenta previa requested blood

transfusion. Maximum blood transfused to a single patient (including FFP's platelet concentrate etc) was 14 units. Preterm delivery was seen in 46.54% cases.

Table 2: Maternal high-risk factors.

High risk	N	%
Hypertension	12	7.64
Gesational diabeties mellitus	2	1.27
Elderly	2	1.27
Hypothyroid	4	2.55
Post dated	1	0.64
Twins	2	1.27
Moderate to severe anaemia	14	8.92
Grand mullipara	15	9.55
None	105	66.87

Mode of delivery was LSCS in 75.80%. Out of 157 patients of placenta previa 25 i.e. 15.92% had undergone peripartum hysterectomy. 15 out of 25 hysterectomies were done in types IV placenta previa. Maternal death occurred in 5 out of 157 patients i.e. 3.18%. Fetal characteristics studied are summarized in (Table 4). In the present study, the percentage of perinatal death was 18.23%. Most of the perinatal deaths were noted in types IV placenta previa 13 out of 29 (Table 5).

Table 3: Maternal and fetal complications.

Maternal complication			Fetal complication		
Intrapartum	**N**	**%**		**N**	**%**
T. Lie	10	6.29	**Jaundice**	14	8.80
Breech	20	12.58	-	-	-
Postpartum	**N**	**%**	**Preterm**	74	46.54
Shock	31	19.75			
Anaemia (moderate to severe)	14	8.91	**IUD**	7	4.40
PPH	60	38.22			
Peripartum hysterectomy	25	15.92	**Expired**	22	13.83
Expired	5	3.18			

*Mild anaemia=139, Mod anaemia=13, S. Anaemia=1

DISCUSSION

Incidence of APH in our study was 1.97 %. This was in accordance with the findings of Bhandiwad et al who found the incidence of APH to be 1.5 %.[10] The incidence of APH in a study by Singhal et al was 3.01 %.[11]

Mean age of women presenting with placenta previa in our study was 27.44±3.82 yrs with most patients in 26-30 years age group. This is in consistent with finding of Singhal et al who found the mean age to be 26.8 years.[11] Bhandiwad A et al. found mean age to be 23.28±3.89 yrs in their study.[10] In our study 71.97% (113/157) women with placenta previa were multigravidae, this was consistent with the finding of Siddiqui et al found that majority of patients of abruption and placenta previa were multigravidae.[12] So being a problem of multiparity, reduction in family size and issues of contraception are highly applicable if incidence and associated morbidity and mortality are to be reduced. Total 79 (50.31 %) patients of placenta Previa had history of LSCS, abortion or both , our finding were similar to study by Sarella et al in which 40% cases of placenta previa had previous history of LSCS.[13] In our study, nearly three fourth patients of placenta previa (75.80%) had caesarean section . Similar results were found in study conducted by Aora et al and Bhide et al in which incidence of caesarean birth in placenta previa was 65% and 82.4% respectively.[14,15]

Table 4: APGAR score, birth weight and NICU admission.

Parameters	N	%
APGAR score		
0-3	11	6.92
4-7	15	9.43
>7	133	83.65
Birth weight (kg's)		
ELBW(<1)	-	-
VLBW(1-1.4)	4	2.52
LBW(1.5-2.4)	52	33.96
2.5-3.9	100	62.89
≥ 4	1	0.63
NICU Admission		
Yes	74	46.54
No	85	53.46

Table 5: Maternal mortality and fetal mortality.

Cause	Maternal mortality N=157		Foetal mortality N=159	
	Frequency	**%**	**Frequency**	**%**
Type I placenta previa	0	-	6	3.77
Type II placenta previa	2	1.27	5	3.14
Type III placenta previa	0	-	5	3.14
Type IV placenta previa	3	1.91	13	8.18
Total	5	3.18	29	18.23

In our study PPH, shock and peripartum hysterectomy was noted to be 38.22%, 19.75%, and 15.92% respectively which is consistent with Kalam et al,

reporting 38% of PPH, 22% of Shock and 4% of peripartum hysterectomy in their study.[16] Incidence of peripartum hysterectomy stated by Singhal et al was 1.19% inconsistent with the presents study.[11] 35.22% of neonates had birth weight <2.5 kg. The main contribute for low birth weight babies were premature neonates. Our findings were consistent with those of Chufamo et al who found the prevalence of low birth weight babies as 35%.[17] Arora et al and Kholsa et al reported 77% and 66% babies with low birth weight in their studies respectively.[14,18] 46.54% neonates had NICU admission. Our result were consistent with Siddiqui et al who observed that 35.37% neonates required NICU admission.[12] In our study maternal mortality in placenta previa was 3.18 %. 3 out of 5 deaths occured in types IV placenta previa due to massive blood loss. The cause is that most of the patients reported to the hospital very late so there is very short window of opportunity for active intervention to reduce maternal mortality. Our study was consistent with the study by Sheikh et al which found maternal mortality of 3%.[19] Chufamo et al reported maternal death of 3.1 % in their study while Singhal et al reported 2.21% mortality in their study.[11,17]

In our study perinatal mortality was observed in 18.23% i.e. 29 out of 159 neonates. This was quite less as compared to study by Kalavati et al who reported 50% perinatal mortality.[20] Arora at al and Khosla et al reported very high mortality of 61.5% and 53.5%.[14,18] Limitations of the study was that it is a single center study.

CONCLUSION

Based upon observation made during this study, it is concluded that placenta previa is a serious condition with significant maternal and perinatal morbidity and mortality. Improvement in management of placenta previa like expectant treatment have helped in improving neonatal survival and reduce maternal morbidity. Good regular antenatal care and availability of medical services remains the backbone for the good maternal and perinatal outcome in placenta previa. There is need to improve the basic infrastructure such as functional blood banks, quality of care and referral system in our health facilities to be able to cope with increasing challenges of this obstetric haemorrhage.

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