Original Article

Maternal and Neonatal Outcome in Placenta Previa

Mamata N[1], Ramadevi E[2], Mamatha CH[3], Himasai Lakshmi Prasanna M[4]

[1] Professor
[2] Professor & HOD
[3, 4] Resident
Department of Obstetrics and Gynaecology
Chalmeda Anand Rao Institute of Medical Sciences
Karimnagar -505001
Telangana, India.

CORRESPONDANCE:

Dr. E. Ramadevi, MD (OBG)
Professor & HOD
Department of Obstetrics and Gynaecology
Chalmeda Anand Rao Institute of Medical Sciences
Karimnagar -505001
Telangana, India.
Email: himasai56@gmail.com

ABSTRACT

Background: Placenta previa refers to the presence of placental tissue that extends over or lies over the internalos, and associated with complications and severe bleeding and preterm birth, as well as the need for caesarean delivery. Placenta previa should be suspected in any woman beyond 20 weeks of gestation who presents with painless vaginal bleeding.

Aim: The aim of study was to study the incidence, risk factors, mode of delivery, maternal and neonatal outcome of placenta previa.

Materials and Methods: A prospective observational study was conducted at the Department of Obstetrics and Gynaecology, Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar. All the antenatal women with placenta previa beyond 28 weeks of gestational age, confirmed by ultrasound were selected.

Results: In view of antepartum haemorrhage, totally 39.08% (20) preterm deliveries. 30.45 % (16) patients delivered between 32 and 36 weeks 6 days, 6.89%(3) patients delivered between 28 and 31 weeks 6 days, 1.72%(1) patients delivered less than 28 weeks.

Conclusion: Placenta previa leads to increased maternal morbidity due to Antepartum Haemorrhage, operative procedures, multiple blood transfusions. Neonatal morbidity depends on gestational age at the time of delivery. Optimum care during the antepartum and intrapartum period reduces maternal and fetal morbidity and mortality.

Keywords: Placenta previa, maternal morbidity and mortality, neonatal morbidity and mortality, antepartum haemorrhage

INTRODUCTION

Placenta previa (PP) is defined as implantation of the placenta in the lower uterine segment overlying the endocervical os, and it is known as an important cause of serious fetal and maternal morbidity and mortality. [1]The incidence of placenta praevia is 3-5 per 1000 pregnancies worldwide and is still rising because of increasing caesarean section rates.[3] Placenta previa contributes substantial maternal and neonatal morbidity including management challenges for obstetrician.[4] It is one of the leading causes of vaginal bleeding in the second and third trimesters. [5]

Placenta previa should be suspected in any woman beyond 20 weeks of gestation who presents with painless vaginal bleeding. For women who didnot had a second trimester ultrasound examination, antepartum bleeding after 20 weeks of gestation should prompt sonographic determination of placental location before digital vaginal examination is performed because palpation of the placenta can cause severe hemorrhage. Based on the clinical findings the classification of PP into three types, for the first time, which included low-lying placenta, "marpartial" (marginal and partial) PP, and complete PP. [2]

There a several factors, especially obstetrical, which has been found to be associated with placenta previa. Advancing maternal age, multiparity, previous caesarean delivery, previous abortions etc has been associated with increased risk of placenta previa. The adverse maternal outcome like postpartum hemorrhage, caesarean hysterectomy, increased need for blood transfusion are dreaded complications.

Higher risk of preterm birth, low apgar score, congenital malformation increases the neonatal morbidity and mortality.

MATERIALS AND METHODS

Study Design

The study was a prospective observational study carried out in 50 antenatal women with placenta previa beyond 28 weeks of gestation confirmed by ultrasound.

Study center: This study was done on patients who were admitted to Chalmeda Anand Rao Institute of Medical sciences, Karimnagar in the Department of Obstetrics and Gynaecology.

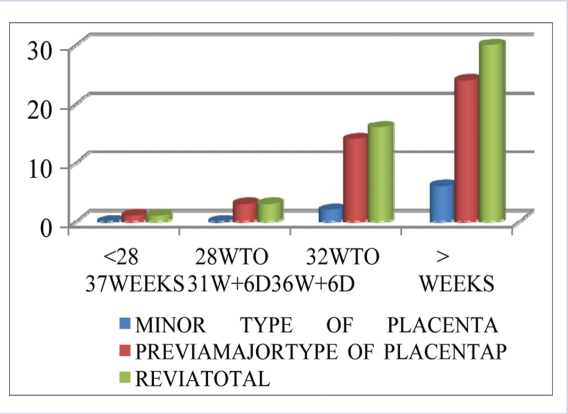
Inclusion criteria: All the antenatal women with placenta previa beyond 28 weeks of gestational age, confirmed by ultrasonography were selected irrespective of their parity, type of placenta previa.

Exclusion criteria: The antenatal women with normally situated placenta and multiple pregnancy were excluded from the study.

RESULTS

Table 1: Gestational age at the time of delivery and type of placenta previa

Gestational age	Minor (18.39%)		Major (81.60%)			Total
	I	IIA	IIB	III	IV	
<=28 Weeks	0	0	1	0	0	1
	(0%)		(100%)	(0%)		(1.72%)
28WTO31W+ 6	0	0	0	1	2	3
Days	(8.33 %)	(8.33 %)	(8.33 %)	(25%)	(50 %)	(6.89%)
32WTO36W+ 6	1	1	1	6	7	16
DAYS	(5.55%)	(9.25 %)	(7.54 %)	(35.84%)	(41.50%)	(30.45%)
>37 WEEKS	1	5	3	9	12	30
	(2.83%)	(16.98%)	(9.43 %)	(31.13 %)	(39.62%)	30 (60.91%)
TOTAL	**2**	**6**	**5**	**16**	**21**	**50**



Graph1: Gestational age at the time of delivery and type of placenta previa

In view of antepartum haemorrhage, totally 39.08% (20) preterm deliveries. 30.45 % (16) patients delivered between 32 and 36 weeks 6 days, 6.89 % (3) patients delivered between 28 and 31 weeks 6 days, 1.72% (1) patients delivered less than 28 weeks.

There is no significant difference in the perinatal outcome with the mode of delivery; whether vaginal or LSCS. This can be explained, as only patients in second stage of labour or with minor placenta previa and not actively bleeding were allowed vaginal delivery whereas, all critical patients and those women with major placenta previa were taken for elective LSCS.

Hence, the outcome is biased and cannot be authenticated with our belief that emergency LSCS is the treatment of choice in major placenta previa in patients with critical hemodynamic state.

Out of 4 babies with respiratory distress, 0.90% (4) had placental type as major. Out of 2 babies with neonatal jaundice, 100% (all2) had placental type as major. Out of 16 babies with low birth weight, 89.47% (14) had placental type as major. Significant p-value 0.002).

Table 2: Major Obstetric morbidity

	MINOR		MAJOR			Total
	I	IIA	IIB	III	IV	
Blood Transfusions	1 (2.89 %)	1 (4.34 %)	4 (18.84%)	6 (33.33%)	8 (40.57%)	20(p-value 0.007)
ICU care	0	0 (0%)	1 (17.85%)	3 (32.14%)	4 (50 %)	8(p-value <0.001)
Caesarean Hystrectomy	0	0	0	0	3 (100%)	3 (p-value <0.001)
Hysrectomy Done later	0	0	0	1 (50%)	1 (50%)	2(pvalue <0.001)
Hypotension	0	2	1	2	3	8
Hypovalemic Shock	0	0	0	1	2	3
DIC	0	0	0	2	1	3

Table 3: Correlation of mode of delivery and neonatal mortality

	Vaginal delivery	Caesarean Section	
		Emergency	Elective
No.of patients	3	5	42
Neonatal motality	0	1	0

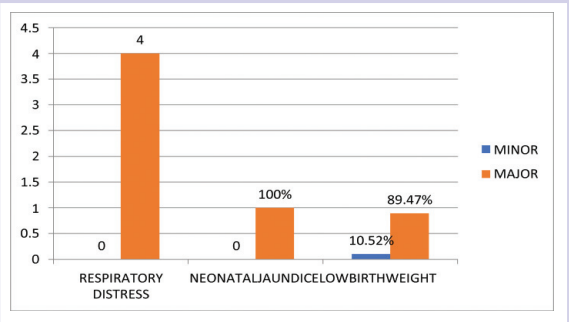
Table 4: Neonatal outcome

Gestational age	Minor		Major			Total	Mean Gest. age	Mean Birth weight
	I	2A	2A	3	4			
Term live Births	1	5	3	9	12	30	37.4	3.23 kg
Live pre term births	3 (13.84%)	1 (7.69%)	3 (16.92%)	5 (24.61%)	7 (36.92%)	19	36.2	2.18 kg
Neonatal Death		0	0	0	1	1	27wks	1

Total neonatal deaths 1. Neonatal mortality rate in placenta previa1.72 % NICU admissions 19(37.35 %).

Table 5: Neonatal morbidity

	Minor	Major	Total
Respiratory distress	0	4	4 (19.29)
Neonatal Jaundice	0	2 (100%)	2 (11.68%)
Low birth weight	2 (10.52%)	14 (89.47%)	16 (74.02%)
Total	2 (9.09 %)	20 (90.90%)	22 (100%)



Graph 2: Neonatal Morbidity

DISCUSSION

Placenta previa is one of the dreaded complications in obstetrics due to its associated adverse maternal and perinatal outcome. [6] The incidence of placenta previav aries with the availability of antenatal care and sonographic evaluation. Das B etal from 1940-1970 analysed and gives incidence of placenta previa (1:139-(0.7%).[7] Bhaskar Rao et al K (1988) from Maternity Hospital, Chennai reported the incidence of placenta previa–1:192 (0.52%). [8]

In the present study, our hospital being a tertiary care centre, the incidence is 1:490-2.00 %. In the present study the incidence of placenta previa was highest in the age group of 20-29 years i.e., 72.9%, followed in descending order by women in the 30-35 year age group, above 35 year age group and less than 19 year age group, i.e., 20.3%, 5.1%, 1.7% respectively. The mean maternal age in our study was 27.43+_ 4.5 SD years which is similar to observation made by Das et al (1999) [7] with the main age of 28.6 years.

In a recent study showed that the maternal age, the maximum number of Patients i.e., 35 (70%) women were between the age group of 20-29 years, followed in descending order by 8(16%) women in 30-35 years age group. 6 (12%) women were more than 35 years and one woman (2%) was less than 19 years. In the study done by Mc Shane PM et al (1985) the mean age was 29.8 years.[10]

In the present study, 3 cases, caesarean hysterectomy was done for uterineatony, after all conservative measure to arrest bleeding with uterotonic drugs, haemostatic sutures failed, both had total hysterectomy. The Histopathology reports both these hysterectomy specimens were showing edematomyometrial tissues. For 2 patient shysterectomy was done later, as one presented with postpartum haematuria, and one presented with severe painful micturition and high grade fever.

Bleeding episodes leading to emergency cesarean section as well as elective cesarean sections contribute to the increased risk of preterm delivery with placenta previa. [9]Uterineatony is an indication for emergency peripartum hysterectomy in 27.8% of all the cases. As per ACOG committee opinion, July 2012, the incidence of Placenta accrete has increased and seems to parallel the increasing caesarean delivery rate. Researchers have reported the incidence of placenta accrete as 1 in 533 pregnancies for the period of 1982-2002. This contrasts sharply with previous reports, which ranged from 1 in 4,027 pregnancies in 1970s, increasing to1 in 2,510 pregnancies in1980s.

In the study done by McShane PM et al (1985) 22% of babies required resuscitation. The Mean+/-SD of Apgar at 1'and 5'was 5.0+/-1.3 and 6.7+/- 1.0 respectively. [10] When the placenta is in anterior position, through direct placenta incision, quickly causing maternal and fetal hemorrhage.[9] Although mothers can sometimes tolerate this hemorrhage, it might be sufficient to cause neonatal anemia. Thus to manage neonatal anemia, obstetricians should make every effort to detect anterior placental location rather than complete previa and develop better surgical methods to avoid direct placental incision. [11]

Jang DG et al (2011) anterior placental location or 2.48, 95% CI 1.20–5.11 was an independent risk factor of neonatal anemia.[9] Placenta previa with preterm birth with neonatal anemia is a major factor of 4-8% risk of neonatal mortatility in placenta previa patient.

In present study, compared to the placenta previa, placenta accreta is less contributing to caesarean hysterectomy was1.72 %. The presence of a second obstetric consultant among the multispecialty team may help in taking rapid action to control bleeding and in taking the decision for hysterectomy. [10] Neonatal morbidity in placenta previa yielded the following results. In the present study, 1.6%, 44.3% of babies received resuscitation and NICU admission.3 9.34% of babies recovered.

CONCLUSION

Placenta previa leads to increased maternal morbidity due to Antepartum haemorrhage, Operative procedures, multiple blood transfusions. Neonatal morbidity depends on gestational age at the time of delivery. Delivery should be conducted in a tertiary care centre where facilities like blood Bank, Intervention Radiology, Neonatal Intensive Care Unit are available round the clock. Optimum care during the antepartum and intrapartum period reduces maternal and fetal morbidity and mortality. Placenta previa poses danger to both the mother and the baby with high maternal morbidity and adverse perinatal outcome.

CONFLICT OF INTEREST:

The authors declared no conflict of interest.

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