



FETO-MATERNAL OUTCOME OF PLACENTA PRAEVIAS CASES IN A TERTIARY CARE HOSPITAL OF MUMBAI, INDIA

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ABSTRACT Obstetric hemorrhage is one of the leading causes of maternal mortality and accounts for 25% of maternal deaths. It is also the most preventable cause. Ante Partum Hemorrhage (APH) constitutes bulk of these cases and placenta previa is one of the major conditions associated with it. This retrospective study presents the 2 years data (August 2009-2011) of placenta previa cases, which underwent caesarean section. Out of 87, 50% cases presented in the emergency department and underwent emergency LSCS, while rest of the patient underwent expectant management in the ward. placenta previa cases accounted for 0.73% deliveries during the study period. Multipara, previous endometrial scar and advanced age were major risk factors. 50% cases were managed expectantly and had better maternal and fetal outcome compared to patients who presented in the emergency. As many patients required blood transfusion, emergency LSCS and obstetric hysterectomy, placenta previa cases should be managed carefully.

KEYWORDS : Ante Partum Hemorrhage, Placenta Previa, Feto-maternal outcome

INTRODUCTION

Obstetric hemorrhage is one of the leading causes of maternal mortality and accounts for 25% of maternal deaths. It is also the most preventable cause of maternal mortality. Prompt diagnosis, resuscitation and management are essential to save the mother and fetus. Obstetric hemorrhage can occur in first, second, or third trimester. However, if bleeding occurs from or into genital tract after 24 weeks of gestation (Period of fetal viability) and prior to delivery of the baby, it is known as Ante Partum Hemorrhage (APH). Some guidelines define APH as bleeding occurring after 20 weeks of pregnancy. APH occurs in 3-5% of pregnancies. The two most conditions causing APH are placenta previa and placental abruption.⁽¹⁾

Placenta previa defined as placenta that is implanted over or adjacent to the internal os. Since the placenta lies in the lower segment, it can separate before or in early labor and cause significant hemorrhage, resulting in various maternal and fetal complications. Common maternal complication are hemorrhagic shock, preterm labor, prelabor rupture of membranes, operative vaginal delivery, cesarean section, amniotic fluid embolism and placenta accreta. Fetal complications are prematurity, fetal growth restriction, mal-presentation, hypoxia and perinatal death etc.

Placenta previa complicates approximately 0.3-0.5% of pregnancies.⁽²⁾ It is classified into 4 types according to williams's, depending upon the degree of extension of placenta to the lower segment.⁽³⁾

Type I – (low lying) – The major part of the placenta is attached to the upper segment and only the lower margin encroaches onto the lower segment but not up to the OS.

Type II – (Marginal) – The placenta reaches the margin of the internal OS but do not cover it. Dangerous placenta praevia is the name given to type II posterior placenta praevia.

Type III – (incomplete or partial central) – The placenta covers the internal OS partially (covers the internal OS when closed but does not entirely do so when fully dilated)

Type IV- (Central or total) – The placenta completely covers the internal OS even after it is fully dilated.

For Clinical purposes, the types are divided into minor degree Placenta previa (Type I and Type II anterior) and major degree Placenta previa (Type II posterior, Type III and Type IV).

With the availability of routine ultrasonography, blood transfusion, safe anesthesia, antibiotics and timely resort to caesarean section and also with availability of neonatal intensive care unit facilities, perinatal mortality which has most due to asphyxia and prematurity have reported in improvement of maternal and fetal outcome and thus

decrease maternal and fetal morbidity and mortality.

This study was done with intend of developing insight into risk factors, clinical presentations and associated with morbidity and mortality of mother and fetus in cases of placenta previa and also, to intervene in the management of placenta previa for the improvement of maternal and fetal outcome.

MATERIAL AND METHODS:

In this retrospective study, 87 cases of placenta previa who underwent caesarean section from a time period extending from August 2009 to August 2011 in tertiary care hospital were taken. All cases of APH in whom diagnosis of placenta previa was made clinically and/

The management of placenta previa cases was decided, mainly on the basis of gestational age and severity of bleeding. Expectant or conservative management was done in placenta previa cases with fetal immaturity and slight, controllable bleeding. These cases were admitted in the ward and advised bed rest. Recourse was taken to immediate termination of pregnancy if, fetal maturity was at least about 35 weeks and/or if bleeding was severe and uncontrollable (in the maternal interest).

Fetal gestational age was calculated by using the date of LMP, Uterine size and/or Ultrasonography consistent with dates within 10 days before or at 23 weeks, with at least 2 criteria have to be fulfilled.

Maternal morbidity was measured by number of blood transfusions, episodes and severity of bleeding prior to delivery, presence and severity of PPH and any other intraoperative / postoperative complications like need for internal artery ligation, caesarean hysterectomy, packing for control of PPH during caesarean section etc. Fetal outcome was measured by estimated gestational age on clinical examination after birth, birth weight and Apgar score at 1 minutes and 5 minutes. In case of fetal death, it was documented as fresh still birth or macerated still birth or neonatal death. Also, the cause of death was noted. Follow up of live, viable births was noted till either the mother and/or baby was discharged from the hospital.

OBSERVATIONS:

During the study duration of 2 years total 87 patients underwent caesarean section in view of placenta previa. During this time, total numbers of deliveries conducted in the hospital were 11,934, incidence of placenta previa 0.73%. Out of 87 cases, 44 (50.5%) presented in the emergency department and were admitted.

TABLE – 1 GENERAL CHARACTERISTICS

Group Variables	Number of cases	%	
Age group (Years)	<19	3	3.45
	20-24	17	19.54
	25-29	34	39.08
	>30	33	37.93

Gravida	Primi	17	19.54
	G2	19	21.84
	G3-G4	39	44.83
	> G4	12	13.79
Type of placenta Previa	TYPE I	4	4.60
	TYPE II	26	29.88
	TYPE III	41	47.12
	TYPE IV	16	18.39

TABLE – 2 GENERAL CHARACTERISTICS-2

Group Variables	Number of cases	%	
Degree of Placenta Previa	Minor	30	34.45
	Major	57	65.5
Fetal Presentation	Breech	16	18.39
	Oblique	3	3.45
	Transverse	6	6.90
	Other	2	2.30
	Vertex	60	68.97
Period of gestation (Weeks) at admission	< 29	5	5.75
	30 - 33	29	33.33
	>34 - < 37	33	37.93
	>37	20	22.98
Period of gestation (weeks) at LSCS	<= 29	2	2.30
	30-33	24	27.59
	34-37	37	42.53
	>37	24	27.59

The mean age of the study population was 28.1 years, > 3/4th cases were above 25 years, while 10% cases were more than 35 years. 80% cases were multigravida. Type III and Type IV placenta previa cases constituted more than 50% of total cases. (Table - 1) Though, malpresentation is common in placenta previa cases, in this study it was only 31%. At the time of admission 3/4th cases were between 30-37 weeks of gestational age. However, only 23% cases were term at the time of admission. (Table - 2)

Among the 87 cases, 53 (61%) had history of uterine scarring, check curettage- 38 cases (43.7%) and previous LSCS in 26 cases (30%). Among 53 cases, 13 women had history of LSCS and Check curettage.

Maternal Outcome:

All the 44 cases, who were admitted through emergency department, had to undergo emergency lower segment caesarean section (LSCS). Rest of the 43 cases was admitted in the ward for the expectant management. Out of these 40 cases had to undergo emergency LSCS.

TABLE – 3 MATERNAL OUTCOME

Complication	Maternal Complication (n=87)		Total
	Management		
	Active (n=44)	Expectant (n=43)	
Blood transfusion	32 (72.7%)	26 (60.4%)	54 (62%)
PPH	15 (34.1%)	9 (21%)	24 (27.6%)
Obstetric Hysterectomy	5 (11.4%)	0	5 (5.8%)
ICU admission	4 (9.1%)	0	4 (4.6%)

Among the 87 cases, 62% received at least 1 blood transfusion during the course in the hospital; however, this was more common among emergency admitted cases (72.7% vs 60.4%). Similarly, the PPH also was more common among emergency admitted case (34.1% vs 21%). All the PPH cases had to undergo one or another intra-operative measures i.e. bilateral uterine artery ligation, lower segment compression stitch, placental bed stitch, packing etc. However, obstetric hysterectomy was required only in case of emergency admitted patients (5 out of 15 PPH cases). (Table -3)

TABLE - 4 MATERNAL COMPLICATION WITH TYPE OF PLACENTA

Maternal Complication	Type I (n=4)	Type II (n=26)	Type III (n=41)	Type IV (n=16)
Blood Transfusion	2 (50%)	16 (61.5%)	25 (61%)	15 (93.8%)
PPH	0	3 (11.5%)	8 (19.5%)	13 (81.3%)
IntraOp Intervention	0	3 (11.5%)	8 (19.5%)	13 (81.3%)
OH	0	0	0	5 (31.3%)
ICU Admission	0	0	1 (2.4%)	4 (18.8%)

All the maternal complications were most prevalent in Type IV placenta previa, followed by Type III and Type II. (Table – 4)

TABLE – 5 FETAL COMPLICATIONS

Complication	Management	Total (N=89)	
		Active (n=44)	Expectant (n=45)
Low Birth Weight	35 (79.5%)	24 (53.3%)	59 (66.3%)
Pre Term Birth	13 (29.5%)	13 (28.9%)	26 (29.2%)
Fetal Death	11 (25%)	2 (4.4%)	13 (14.6%)
NICU admission	28 (63.6%)	20 (44.4%)	48 (54%)

Among the 87 cases, there were 2 twin deliveries. Similar to maternal complication, foetal complication were more prevalent among emergency admitted cases. Overall, 2/3rd newborns were LBW and > 50% required NICU admission. Fetal death was 5 times more prevalent among emergency admitted patients. Preterm birth rate was almost equal among both the groups. Overall 29.2% newborns were preterm while 39 (44%) newborns were near term. (Table – 5)

Hospital Stay: The mean hospital stay among 44 actively managed cases was 17 days. This stay was almost exclusively post-delivery stay. Among the expectant managed cases, hospital stay was 25 days, however, antepartum stay constituted a major part.

DISCUSSION:

There were 87 cases presented with placenta previa and incidence amounting to 0.73%. various studies has shown incidence of placenta previa from 0.33 to 0.9%. [4-6] Increasing age and number of pregnancies have been shown to be important risk factors for placenta previa. This study has > 1/3rd cases above 30 years of age and 80% of women were multipara. Multiple have studies have shown increasing parity an important risk factor. [7-9]

Regarding past obstetric history, 43.67% women had undergone check curettage following MTP & abortion, and 30% had prior LSCS. Uterine scars, previous miscarriages, terminations, and dilatation and curettage are reported as predisposing factors, possibly due to endometrial damage. Various studies have shown increased risk of placenta previa with increasing number of LSCS and check curettage. [5,9-14]

In this study, 50% cases were managed conservatively by adequate rest in the hospital and necessary supportive treatment. Maternal and fetal complications were more prevalent among actively managed patients, admitted through emergency department. Macafee and Johnson [15] introduced expectant management of placenta previa with the aim of achieving maximum fetal maturity possible while minimizing the risks to both mother and fetus, the overall objective being to reduce perinatal mortality, and, at the same time, reducing maternal mortality. D’Angelo and Irwin [16] suggested keeping the mother in hospital until delivery was justified, on the grounds that neonatal mortality and morbidity and cost of treatment were reduced. Besinger et al [17] demonstrated that tocolytic use delayed delivery and was associated with an increase in birth weight.

Varma[18] – Fetal growth restriction occurs in 16% of women with placenta previa and is correlated with the number of antepartum bleeding episodes. In this study, 66.3% newborn were low birth weight and 14% died in perinatal period. Similar results were seen by Rajeshwari RR et al with 64% LBW and 10% neonatal death.[6] Preterm delivery [4,19] remains one of the main problems. 41.9% of women with placenta previa delivered prematurely and 19.2% of newborn had neonatal mortality.

CONCLUSION:

Placenta previa cases accounted for 0.73% deliveries during the study period. Multipara, previous endometrial scar and advanced age were major risk factors. 50% cases were managed expectantly and had better maternal and fetal outcome compared to patients who presented in the emergency. As many patients required blood transfusion, emergency LSCS, obstetric hysterectomy, ante partum hemorrhage cases should be evaluated carefully with ultrasonography and placenta previa cases should be managed at a higher centre with intensive care services for both mother and newborn, along with emergency surgical services.

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CONFLICT OF INTEREST-None declared

ETHICAL APPROVAL: The study was approved by the institutional ethical committee.

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