

Obstetric factors and pregnancy outcome in placenta previa

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Abstract

Introduction: Placenta previa is one of the major causes for maternal morbidity and mortality. The aim of this study was to analyze the obstetrical factors associated with placenta previa and to find out the maternal and perinatal outcome of these cases.

Methods: This was a retrospective study conducted in the Department of Obstetrics and Gynecology of TUTH. Hospital chart records of four years (1st January 2008 to 31st December 2011) were collected. Chart records of all women who had undergone cesarean section for placenta previa were reviewed. Relevant clinical findings were noted.

Results: During the study period, there were 82 cases of cesarean sections done for placenta previa, which is 0.55% of the total deliveries.

Of the eighty two cases, charts could be obtained of the 70 patients for the analysis. 21.4% had total placenta previa. Maximum women were in age group 26-30 years. Sixty one percent of the patients were multipara. Sixteen patients had history of cesarean section and 20 cases had abortions in previous pregnancy. Malpresentation was present in more than one fifth (21.4%) of the patient.

45.7% of the babies were preterm and 27% were low birth weight babies. Seven babies had neonatal death.

Almost one third (31.4%) of the patient had blood loss ≥ 500 ml. There were four cases with blood loss ≥ 1000 ml. Among them two had loss of more than two liters. Ten patients required blood transfusion. One patient had cesarean hysterectomy.

Conclusion: Placenta previa poses danger to both the mother and the baby. There is high maternal morbidity and adverse perinatal outcome.

Key words: maternal and perinatal outcome, placenta previa, risk factors

Introduction

Placenta previa is used to describe a placenta that is implanted over or very near the internal os.¹ It is one of the major cause for antepartum hemorrhage, which complicates two to five percent of the pregnancies.² The incidence of placenta previa is approximately 4-5 per 1000 deliveries.^{3, 4} Placenta previa is graded into different types depending on how close is the lower margin of the placenta to the internal os and whether it is situated anterior or posterior wall of the uterus.⁵

There are several factors, especially obstetrical, which has been found to be associated with placenta previa. Advancing maternal age, multiparity, previous cesarean delivery, previous abortions etc has been associated with increased risk of placenta previa. The adverse maternal outcome like postpartum hemorrhage, cesarean hysterectomy, increased need for blood transfusion are dreaded complications.^{2,6} Higher risk of preterm birth, low apgar score, congenital malformation increases the perinatal morbidity and mortality.^{2,7}

The objective of the study was to analyze the obstetrical factors associated with placenta previa and to find out the maternal and perinatal outcome of these cases.

Methods

This was a retrospective descriptive study conducted in the Department of Obstetrics and Gynecology of TUTH. Hospital chart records of four years (1st January 2008 to 31st December 2011) were collected. Chart records of all women who had undergone cesarean section for placenta previa were reviewed. Detail information regarding patient's management and other relevant clinical findings were noted.

Results

During the study period, there were a total of 4847 cesarean sections among 14,948 deliveries which accounts for 34.4% cesarean section rate. Among these, there were 82 cases of cesarean sections done for placenta previa, which is for 0.55% of the total deliveries.

Of the eighty two cases, charts could be obtained of the 70 patients for the analysis of this study. Of the total LSCS 40 (57%) cases were emergency operations. Twenty nine (41%) cases presented with bleeding per vagina.

Table 1 shows the type of placenta previa. Major placenta previa (total and partial) constituted 35.7% of the all placenta previa cases. Of these 21.4% had total placenta previa. Maximum women presented with marginal placenta previa (38.6%).

Table 1: Type of placenta previa

Type of placenta previa	N (%)
Low lying	18 (25.7)
Marginal	27 (38.6)
Partial	10 (14.3)
Total	15 (21.4)
Total	70 (100.0)

Maximum women were in age group 26-30 years. Five patients were above 35 years old. (Figure 1)

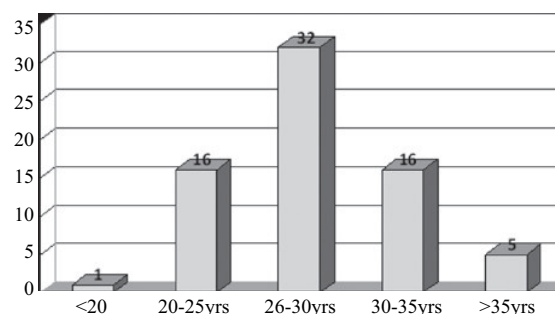


Fig. 1: Age distribution of the patient

Table 2 shows the obstetric factors related to placenta previa: Forty three (61%) of the women were multipara. Sixteen patients had history of cesarean section (two cases had previous two cesarean section) and 20 cases had abortions in previous pregnancy. Of these 8 had both cesarean section and abortion.

Table 2: Obstetric profile of the women

Obstetric profile		N (%)
Parity	primipara	27(38.6)
	multipara	43(61.4)
Previous LSCS		16 (22.8)
Previous abortion		20 (28.6)
Previous LSCS and abortion		8 (11.4)
Previous MRP		1 (1.4)
Uterine anomaly		1 (1.4)
Malpresentation		15 (21.4)
Placental factors (placenta succenturata, morbidity adhesion, vasa previa each)		3 (4.3)

Regarding abortion, 37% of cases had induced abortion and 50% of cases had more than one abortion. One patient had up to four abortions.

Malpresentation was present in more than one fifth (21.4%) of the patient. There were three cases with placental abnormality as seen in table 2.

Table 3 shows neonatal outcome. 45.7% of the babies were preterm and 27% were low birth weight babies. Seven (10%) of the babies had apgar score <5 at 5 minutes. There were seven neonatal deaths. One baby was anomalous with club foot and ambiguous genitalia.

Table 3: Neonatal outcome

Factors	N (%)
Maturity (Weeks) <28	3 (4.3)
28-33	13 (18.6)
34-36	16 (22.8)
>37	38 (54.3)
Birth weight (kg) <1.5	9 (12.8)
1.5-2.4	10 (14.3)
2.5-3.5	49 (62.0)
>3.5	2 (2.8)
Preterm birth	32 (45.7)
Low birth weight babies	19 (27.1)
Apgar score (<7 in 5 minutes)	7 (10)
Early neonatal death	7 (10)
Still birth	1 (1.4)
Male babies	40 (57.1)
Congenital anomaly	1 (1.4)

Looking at the obstetric complications shown in Table 4, almost one third (31.4%) of the patient had blood loss ≥ 500 ml. There were four cases with blood loss ≥ 1000 ml. Among them two had loss of more than two liters. Ten patients required blood transfusion. One patient required cesarean hysterectomy.

Table 4: Obstetrical complications

Factors	N (%)
Postpartum hemorrhage ≥ 500 ml	22 (31.4)
≥ 1000 ml	4 (5.7)
Blood transfusion	10 (14.3)
Associated abruptio placenta	3 (4.3)
Cesarean hysterectomy (ass morbid placental adhesion and bladder injury)	1 (1.4)

Discussion

Placenta previa is one of the dreaded complications in obstetrics due to its associated adverse maternal and perinatal outcome. In this study, the incidence of placenta previa undergoing cesarean section was found to be 0.55% of total deliveries. Various studies have shown the incidence of placenta previa ranging from 0.33 to 0.38%

of deliveries.^{2,6} In the meta analysis reviewing studies on placenta previa between 1950-1996, among 13,992 patients diagnosed with placenta previa the reported incidence of placenta previa ranged from 0.28-2.0% or approximately 1:200 deliveries.⁴ This incidence is similar to this study.

Increasing age and number of pregnancies have been shown to be an important risk factor for placenta previa. This study had one third of the patient above 30 years age group and almost two third (61%) of the women were multipara. According to Cleary et al, a prospective database from multicenter investigations of 36,056 women with singletons showed increasing age was significantly associated with placenta previa comparing women less than 35 years to 35-29 years and 40 years and older (OR 1.8 and 2.8 respectively).⁸ Multiple studies have shown increasing parity to be an important risk factor for placenta previa.^{9, 10, 11}

Regarding previous obstetric history, 22.8% had previous LSCS while more than one fourth (28.6%) had history of abortion. In a retrospective cohort study of 399,674 women, the rate for placenta previa at second birth for women with first vaginal birth was 4.4 per 1000 births, compared to 8.7 per 1000 birth for women with cesarean section at first birth. After adjustment cesarean section at first birth remained associated with increased risk of placenta previa (OR 1.6 95% CI 1.44-1.76).¹² Previous history of abortions (both spontaneous and induced) have been significantly associated with up to three times risk of placenta previa.^{2,4,13,14}

In population based retrospective cohort study in Nova Scotia, Canada from 1988-1995, 308 cases of placenta previa were identified. Maternal complications included postpartum bleeding (RR-1.86), hysterectomy (RR-33.26), blood transfusion (RR-10.05), septicemia (RR-5.55). Risk factor for hysterectomy in women with placenta previa included presence of placenta accrete and previous cs.⁶ This is similar to the case of cesarean hysterectomy this study who had history of previous cesarean section and there was morbid placental adhesion. Sheiner et al found pregnancies complicated by placenta previa had significantly higher rate of postpartum hemorrhage (OR3.8, 95%CI 1.2-10.5), malpresentations (OR7.6, 95%CI 5.7-10.1), abruptio placenta (OR 13.1, 95% CI 8.2-20.7).²

A population based retrospective cohort study among singleton 544,734 mother-infant pair showed that the association between low birth weight and placenta previa is chiefly due to preterm delivery and to lesser extend to fetal growth restriction.⁷ Sheiner showed that congenital malformations and perinatal mortality was 2.6 times more common among cases with placenta previa as compare to

those without it.² In this study 27% of babies had low birth weight and 10% of the babies had neonatal death. Increased perinatal mortality as well as neonatal death has been noted in other studies.^{15,16}

Conclusion

There were 82 cases of cesarean sections done for placenta previa, which is for 0.55% of the total deliveries. 21.4% had total placenta previa. There were four cases with blood loss ≥ 1000 ml. Among them two had loss of more than two liters. Ten patients required blood transfusion. One patient required cesarean hysterectomy. 45.7% of the babies were preterm and 27% were low birth weight babies. Seven babies had neonatal death and there was one anomalous baby.

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