



Observation of Fetal Outcome and Post-Partum Complications among Patients with Placenta Previa After Cesarean Section

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Abstract

Background: Placenta previa and its associated complications present significant risks to both maternal and fetal health, especially in cases following a cesarean section. Despite the high prevalence of this condition, there is a lack of comprehensive studies focusing on fetal outcomes and post-partum complications in a Bangladeshi context. **Material & Methods:** This cross-sectional, hospital-based observational study was conducted at the Department of Obstetrics and Gynecology, Dhaka Medical College Hospital, Dhaka, Bangladesh, over a period of six months. A total of 50 pregnant women diagnosed with placenta previa and with a history of previous cesarean section were included. Data were collected using a structured questionnaire and analyzed using SPSS software. **Results:** The study found that 86% of the participants were diagnosed with placenta previa, and 14% had placenta accreta. The most common presenting complication at admission was P/V bleeding (88%). A majority of the participants (90%) did not experience any postpartum complications. The study also revealed that most participants had a hospital stay of ≤ 7 days (84%) and favorable fetal outcomes, with 88% resulting in live births. **Conclusion:** The study provides valuable insights into the maternal and fetal outcomes among patients with placenta previa undergoing cesarean sections in Bangladesh. The findings underscore the need for targeted interventions and ongoing research to improve both maternal and fetal outcomes. Early diagnosis and understanding of presenting complications like P/V bleeding are crucial for effective clinical management.

Keywords:- Pregnancy, Previa, Placenta, Uterine, Cesarean.



INTRODUCTION

Placenta previa is a significant obstetric condition characterized by the abnormal positioning of the placenta in the lower uterine segment, often covering the cervix either partially or entirely.^[1] This condition has been the subject of extensive research due to its critical implications for both maternal and fetal health. The placenta serves as the lifeline between the mother and the fetus, facilitating the exchange of nutrients, oxygen, and waste. When the placenta is abnormally positioned, it can obstruct the natural birth canal, leading to complications that necessitate medical intervention.^[2] Globally, the incidence of placenta previa is estimated to be around 0.4% to 0.5% of all pregnancies.^[3] However, in Asia, the incidence is relatively higher, with some studies reporting rates as high as 1.2%.^[4] This geographical variation suggests that environmental and genetic factors may contribute to the condition's prevalence. Risk factors associated with placenta previa include advanced maternal age, high parity, previous C-sections, and a history of abortion.^[4,5] The management of placenta previa often involves a cesarean section (C-section) to mitigate the risks of severe bleeding and other complications. While C-sections are generally considered safe, they are not without risks. Studies have shown that maternal and fetal complications, including infection and respiratory distress, are significantly higher in emergency C-sections compared to elective ones.^[6,7] Fetal outcomes in pregnancies complicated by placenta previa are also a subject of concern. Early diagnoses and pre-planned modes of delivery have been shown to decrease the risk of low birth weight and low APGAR score infants. However, the

comprehensive impact of placenta previa on fetal outcomes following a C-section remains inadequately studied.^[8,9] Moreover, post-partum complications such as hemorrhage are prevalent among patients with placenta previa. Invasive monitoring systems have been employed to manage high risks of post-partum hemorrhage during C-section. These systems have shown promise in reducing maternal mortality rates associated with the condition.^[10,11] This study aims to fill the existing gaps in literature by observing fetal outcomes and post-partum complications among patients with placenta previa who have undergone cesarean sections at the Department of Gynecology, Dhaka Medical College Hospital, Dhaka. The findings of this study are expected to contribute to the existing body of knowledge and inform clinical practices for better maternal and fetal outcomes.

MATERIAL AND METHODS

This cross-sectional, hospital-based observational study was conducted over a six-month period from January 2013 to June 2013 at the Department of Obstetrics and Gynecology, Dhaka Medical College Hospital, Dhaka, Bangladesh. The target population included all pregnant women admitted to the hospital who were diagnosed with placenta previa and had a history of a previous cesarean section. Utilizing a purposive sampling technique, a total of 50 samples were included in the study. Inclusion criteria were women who were clinically diagnosed with placenta previa, further confirmed by Ultrasonography (USG), and had a history of prior cesarean section. Exclusion criteria ruled out cases of placenta previa without a history of a previous cesarean section

and antepartum hemorrhages unrelated to placenta previa. Data collection was carried out using a structured questionnaire, which was finalized after pretesting to capture all variables of interest. Data analysis was performed using the Statistical Package for Social Sciences (SPSS) software, focusing on descriptive statistics as the primary test statistics. Ethical considerations were aligned with the Helsinki Declaration for medical research involving human subjects from 1964; verbal consent was obtained from all study participants, who were informed about the study's design, its purpose, and their right to withdraw at any time for any reason. Only subjects who provided informed consent were included in the study sample.

RESULTS

In the sample of 50 participants, the majority fell within the age range of 26-30 years, constituting 44% of the total. This was followed by those aged 31-35 years, making up 32% of the sample. Participants aged 21-25 and those 20 or below were less common, comprising 20% and 4% of the sample, respectively. When examining socioeconomic status, the sample was almost evenly split, with a slight majority (52%) belonging to a low socioeconomic class and the remaining 48% falling into the middle class. In terms of gestational age, more than half of the participants (52%) were between 35-38 weeks of gestation. Those between 31-34 weeks and above 38 weeks represented 24% and 16% of the sample, respectively, while only 8% were between 27-30 weeks. Regarding antenatal care history, the vast majority (88%) had a regular history, contrasting with a small minority (12%) who had an irregular antenatal care history. [Table 1]

A significant majority of the participants, 86% (n=43), were diagnosed with Placenta Previa. In contrast, a smaller proportion, 14% (n=7), were found to have Placenta Accreta. Noticeably, all the participants had undergone cesarean section. [Table 2]

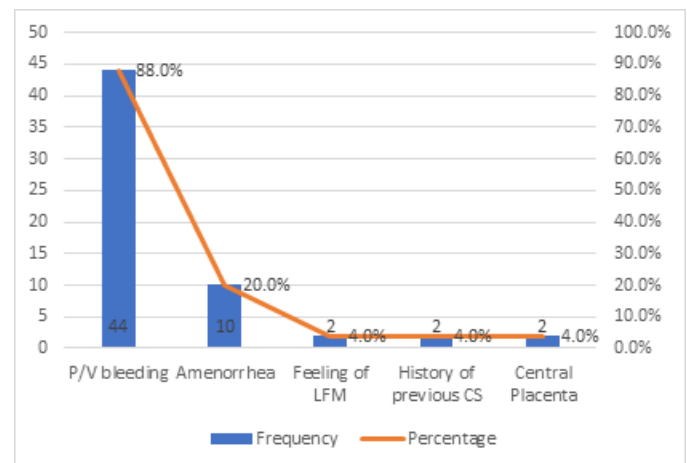


Figure 1: Distribution of participants by presenting complications at admission

In terms of presenting complications at admission, the most prevalent issue was per vaginal (P/V) bleeding, affecting a substantial 88% (n=44) of the participants. Amenorrhoea was the next most common complication, noted in 20% (n=10) of the sample. Other complications were considerably less frequent: Feeling of Light Fetal Movements (LFM), history of previous Cesarean Section (CS), and Central Placenta each accounted for 4% (n=2) of the participants.

Regarding clinical presentations during admission, the most prevalent condition was Gestational Hypertension, observed in a striking 96% (n=48) of the participants. Anemia was also notably common, affecting 80% (n=40) of the sample. In contrast, Edema and Stage 1

Hypertension were relatively rare, each occurring in only 4% (n=2) of the participants.

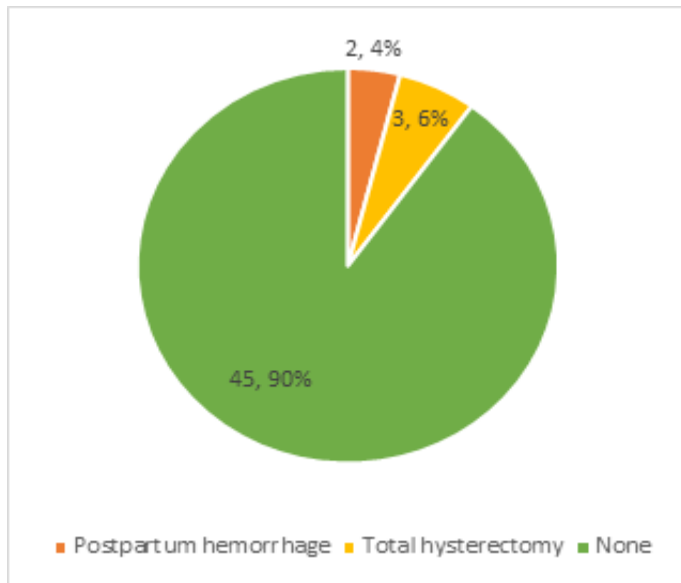


Figure 2: Distribution of participants by postpartum complications

In the area of postpartum complications, the majority of participants, 90% (n=45), did not experience any complications. However, a small percentage did face serious issues: Postpartum hemorrhage was observed in 4%

(n=2) of the participants, and Total Hysterectomy was required for 6% (n=3) of the sample.

Concerning the duration of maternal hospital stay, a large majority of participants, 84% (n=42), were discharged within 7 days. A smaller proportion, 8% (n=4), had a hospital stay extending between 8 to 14 days, and an equal percentage stayed for more than 14 days. [Table 4]

In terms of fetal outcomes among the participants, the majority resulted in live births, accounting for 88% (n=44) of the cases. Stillbirths and neonatal deaths were considerably less frequent, making up 8% (n=4) and 4% (n=2) of the outcomes, respectively. When examining birth weight, nearly half of the newborns (48%, n=24) weighed between 2.1 to 2.5 kg. Those weighing between 1.5 to 2 kg and above 2.5 kg represented 20% (n=10) and 28% (n=14) of the sample, respectively. Only a small percentage, 4% (n=2), had a birth weight of less than 1.5 kg. [Table 5]

Table 1: Distribution of participants by baseline maternal characteristics (N=50).

Variable	Frequency	Percentage
Age		
≤20	2	4.0%
21-25	10	20.0%
26-30	22	44.0%
31-35	16	32.0%
Socioeconomic Class		
Low	26	52.0%
Middle	24	48.0%
Gestational Age		
27-30 weeks	4	8.0%
31-34 weeks	12	24.0%
35-38 weeks	26	52.0%



>38 weeks	8	16.0%
Antenatal Care History		
Regular	44	88.0%
Irregular	6	12.0%

Table 2: Distribution of participants by finding of Placenta Previa during operation (N=50)

Gravidity	Frequency	Percentage
Placenta Previa	43	86.0%
Placenta Accrete	7	14.0%

Table 3: Distribution of participants by clinical presentations during admission

Variable	Frequency	Percentage
Anemia	40	80.0%
Edema	2	4.0%
Gestational Hypertension	48	96.0%
Stage 1 Hypertension	2	4.0%

Table 4: Distribution of participants by duration of maternal hospital stay

Duration	Frequency	Percentage
≤7 days	42	84.0%
8-14 days	4	8.0%
>14 days	4	8.0%

Table 5: Distribution of fetal outcome among the participants

Variable	Frequency	Percentage
Fetal Outcome		
Live Birth	44	88.0%
Still Birth	4	8.0%
Neonatal Death	2	4.0%
Birth Weight		
<1.5 kg	2	4.0%
1.5-2 kg	10	20.0%
2.1-2.5 kg	24	48.0%
>2.5 kg	14	28.0%

DISCUSSION

The discussion aims to provide an in-depth analysis of the study's findings, which focused on fetal outcomes and post-partum complications among patients with placenta

previa after cesarean section. The study's demographic profile revealed that the majority of participants were between the ages of 26-30 and at 35-38 weeks of gestation. These findings align with a study by Nandmer and Kanhere, which also reported a higher incidence of twin



pregnancies in the same age group and gestational age.^[12] The importance of maternal age and gestational age in the context of placenta previa has been emphasized in various studies, suggesting that these factors could influence the risk and outcomes of placenta previa.^[13,14,15,16] The study found that 86% of the participants were diagnosed with placenta previa, and 14% had placenta accreta. Understanding the distinction between these two conditions is crucial for clinical management. Placenta previa involves the placenta partially or completely covering the internal cervical os, posing a risk for postpartum hemorrhage.^[17] In contrast, placenta accreta is a more severe condition where the placenta abnormally attaches to the uterine wall, often necessitating more aggressive surgical interventions like cesarean hysterectomy.^[18] The expression of β -catenin, a protein involved in cell adhesion, is notably lower in both conditions compared to normal pregnancies, potentially contributing to complications.^[19] These differences underscore the need for tailored clinical approaches to improve maternal and fetal outcomes.^[20] This higher incidence of placenta previa is consistent with a study by Osman et al., which reported a higher incidence of placenta previa and accreta in women undergoing their sixth or more cesarean sections.^[21] In the context of the present study, the most common presenting complication at admission was P/V bleeding, accounting for 88% of cases. This prevalence can be attributed to the nature of placenta previa, where the placenta's position near or over the cervical os can lead to bleeding, especially during the later stages of pregnancy. The high incidence of P/V bleeding in our study population underscores the importance of early

diagnosis and intervention to mitigate the risks of maternal and perinatal morbidity and mortality. This high incidence of P/V bleeding was supported by the finding of another study, which emphasized the importance of early diagnosis to prevent maternal and perinatal morbidity and mortality.^[22] Interestingly, 90% of the participants did not experience any postpartum complications, a finding that diverges from the study by Osman et al., which reported higher maternal and fetal morbidities with an increasing number of cesarean sections.^[21] This discrepancy could be attributed to the smaller sample size in the present study or effective medical interventions. The role of medical interventions in reducing postpartum complications has been highlighted in several studies, suggesting that timely and appropriate medical care can significantly improve outcomes.^[12,22] The majority of the participants had a hospital stay of ≤ 7 days, which is similar to the findings of Nandmer and Kanhere, who reported no increased maternal morbidity in terms of transfusion rate and hospital stay in emergency cesarean delivery for women with placenta previa.^[12] The majority of fetal outcomes were live births, which is encouraging but also highlights the need for ongoing research and intervention strategies to minimize adverse outcomes like stillbirths and neonatal deaths. In conclusion, the study provides valuable insights into the maternal and fetal outcomes among patients with placenta previa undergoing cesarean sections. The findings underscore the need for targeted interventions and ongoing research to improve both maternal and fetal outcomes in such cases.



Limitations of the Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSIONS

In conclusion, this cross-sectional observational study provides valuable insights into the fetal outcomes and post-partum complications among patients with placenta previa after cesarean section. Conducted at the Department of Obstetrics and Gynecology, Dhaka Medical College Hospital, the study highlights the significance of early diagnosis and tailored clinical management. The findings reveal that

placenta previa and its more severe form, placenta accreta, are prevalent conditions requiring specialized care. The study also emphasizes the importance of understanding the presenting complications, such as P/V bleeding, to improve maternal and fetal outcomes. The majority of the participants experienced favorable outcomes, indicating the effectiveness of the current clinical practices. However, the study also identifies areas for further research and intervention strategies to minimize adverse outcomes. Overall, the study contributes to the existing body of knowledge and has implications for improving healthcare protocols for managing patients with placenta previa after cesarean section.

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