

Incidence, Risk Factors and Post-Operative Outcome of Cesarean Hysterectomy Among Placenta Previa Patients at a Tertiary Hospital

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Abstract:

Introduction:

Placenta previa remains a significant obstetric complication associated with maternal morbidity, particularly when coupled with abnormal placentation and previous cesarean deliveries.

Objective:

This study aimed to assess the incidence, risk factors, and postoperative outcomes of cesarean hysterectomy among placenta previa patients at a tertiary hospital in Bangladesh.

Methods:

The cross-sectional observational study was conducted in the Department of Obstetrics and Gynaecology at Dhaka Medical College and Hospital, over a period of six months, from July 2017 to December 2017, including 50 pregnant women with confirmed placenta previa.

Results:

Cesarean hysterectomy was required in 20% of placenta previa cases, predominantly among patients with central placenta previa and prior cesarean deliveries. Multiparity, irregular or absent antenatal care, and a history of uterine curettage were prominent risk factors. Postoperative complications occurred in 50% of hysterectomy cases. Despite a high live birth rate (90%), 30% of newborns had low birth weight, and 24% required NICU admission.

Conclusion:

Cesarean hysterectomy remains a vital but high-risk intervention in managing complicated placenta previa. Early identification of high-risk patients, rational use of cesarean sections, and coordinated multidisciplinary care are essential to reduce maternal and perinatal complications.

Keywords: Placenta previa, Cesarean hysterectomy, Risk factors, Maternal morbidity, Perinatal outcome

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Introduction:

Placenta previa is a major obstetric complication linked to substantial maternal and perinatal morbidity and mortality. It involves partial or complete placental coverage of the cervical os, occurring in 0.3% to 0.5% of pregnancies, with incidence rising alongside increasing cesarean section (CS) rates.¹ As a leading cause of antepartum hemorrhage, placenta previa significantly contributes to maternal deaths, particularly in low-resource settings. Risks escalate when combined with abnormal placental adherence, placenta accreta, increta, or percreta known collectively as placenta accreta spectrum

(PAS) disorders.² These disorders involve invasive placental implantation, often causing life-threatening hemorrhage. The situation is especially dire in countries like Bangladesh, where maternal health services are uneven and antenatal care (ANC) coverage is limited. Studies from Bangladeshi tertiary hospitals report a high burden of placenta previa, often with severe hemorrhage requiring cesarean hysterectomy. At Dhaka Medical College, 22% presented with hemorrhagic shock and 37% experienced stillbirths or neonatal deaths, largely due to absent ANC in 40% of cases.³ Similarly, Enam Medical College found 84% of patients were unbooked, highlighting late

referrals and poor risk detection.⁴ These findings reflect broader systemic challenges in Bangladesh, including poor prenatal surveillance, delayed referrals, and limited access to transfusion and surgical services. Rising cesarean delivery rates globally have significantly contributed to increased placenta previa and PAS cases. Uterine scarring from repeat cesareans heightens the risk of both conditions.⁵ Clark et al found accreta risk rose from 5% with one prior CS to 67% with four or more, in cases with placenta previa.⁶ Yeaton-Massey and Lyell similarly linked accreta spectrum disorders to rising CS trends.⁷ This trend is particularly concerning in countries like Bangladesh, where cesarean rates have surged over the past two decades, often in the absence of clear obstetric indications. Cesarean hysterectomy removal of the uterus during cesarean is often life-saving in cases of PAS or uncontrollable bleeding from placenta previa.⁸ Though rare (0.5–5 per 1,000 deliveries), it carries high maternal risks such as transfusions, bladder injury, and prolonged hospitalization.⁹ It also ends fertility, with serious psychosocial impacts where childbearing is culturally vital. In Bangladesh, multiple case reports and institutional audits have highlighted placenta previa and accreta as primary indications for cesarean hysterectomy, accounting for most peripartum hysterectomies in high-risk obstetric units.^{9,10} The aim of the study is to assess the incidence, risk factors, and postoperative outcomes of cesarean hysterectomy among placenta previa patients at a tertiary hospital in Bangladesh.

Methods:

This cross-sectional observational study was conducted in the Department of Obstetrics and Gynaecology at Dhaka Medical College and Hospital, over a period of six months, from July 2017 to December 2017. The study included 50 pregnant women diagnosed with placenta previa, confirmed either through antenatal ultrasonography or intraoperative findings during cesarean section. Patients were selected using purposive sampling. Inclusion criteria were: (i) pregnant women with a confirmed diagnosis of placenta previa, and (ii) those who delivered at the study hospital by cesarean section. Exclusion criteria included: (i) patients with antepartum hemorrhage from causes other than placenta previa, and (ii) those referred after delivery or managed elsewhere. Data were collected using a

structured data sheet and entered into SPSS version 26.0 for analysis. Descriptive statistics were used to summarize the data. Continuous variables were presented as mean±standard deviation, and categorical variables were expressed as frequencies and percentages. Chi-square tests were used to assess associations and a p-value <0.05 was considered statistically significant. Ethical approval was obtained from the hospital's ethics review committee before starting the study. Written informed consent was taken from all participants.

Results:

Most participants (62%) were above 35 years old. Education levels varied, with 30% having no formal education and 18% reaching higher secondary. The majority were housewives (68%), with 30% employed and 2% as day laborers. Monthly income ranged mostly between 15,001–20,000 taka (36%). Urban residents made up 42%, rural 32%, and urban slums 26% (Table-I).

Table-I: Distribution of participants by baseline characteristics (N=50)

Patient characteristic	no. (%)
Age in years	
<30	9(18)
31- 35	10(20)
>35	31(62)
Education	
No education	15(30)
Primary	12(24)
Secondary	14(28)
Higher secondary	9(18)
Occupation	
Housewife	34(68)
Service	15(30)
Day laborer	1(2)
Others	0(0)
Monthly income (Taka)	
50,00-10,000	11(22)
10,001-15,000	13(26)
15,001- 20,000	18(36)
>20,001	8(16)
Residence	
Urban slum	13(26)
Urban	21(42)
Rural	16(32)

Only 20% received regular antenatal care, while 46% had irregular visits and 34% had none. P/V bleeding was reported in 74% of patients, with 36% mild, 20% moderate, and 18% severe (Table-II).

Table-II: Antenatal care and P/V bleeding status of the patients (N=50)

Variables	no. (%)
Antenatal check up	
Regular	10(20)
Irregular	23(46)
Never received	17(34)
P/V bleeding	
No bleeding	13(26)
Mild	18(36)
Moderate	10(20)
Severe	9(18)

Half of the patients (50%) delivered at term (>37 weeks), 40% between 33–37 weeks, and 10% before 33 weeks (Figure-1).

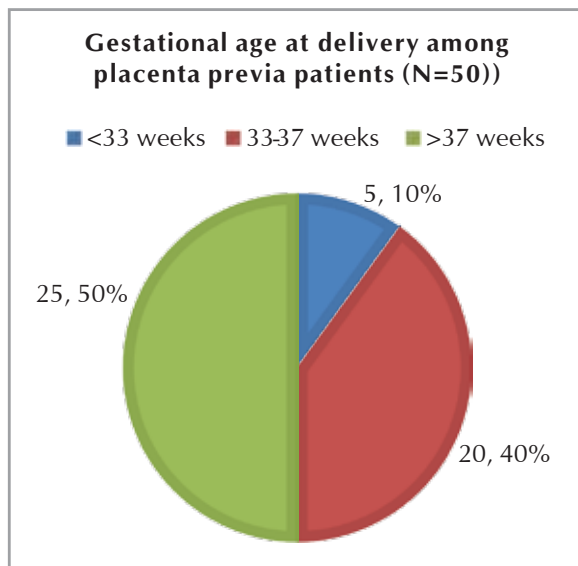


Figure-1: Gestational age at delivery among placenta previa patients (N=50)

More than half (52%) had parity above two. Prior cesarean history was common, with 28% having one and 42% having two or more. Previous curettage and uterine surgery were noted in 18% and 8%, respectively (Table-III).

Table-III: Risk factors for placenta previa (N=50)

Risk factors	no. (%)
Parity	
0	4(8)
1-2	20(40)
>2	26(52)
Previous CS	
1	14(28)
2 or more	21(42)
Previous curettage	9(18)
Previous uterine surgery	4(8)

Cesarean hysterectomy was performed in 20% of cases. Central placenta previa accounted for 50% of these, followed by type III (30%) and type I anterior with accreta (20%). Most (60%) had ≥ 2 prior cesareans (Table-IV).

Table-IV: Occurrence of cesarean hysterectomy among placenta previa patients (N=50)

Category/Details	no. (%)	%
All placenta previa cases	50(100)	100
Cesarean hysterectomy among placenta previa	10(20)	20
Type of placenta previa (among the 10 hysterectomies)		
Type I anterior with accreta	2(20)	20
Type III	3(30)	30
Central placenta previa	5(50)	50
History of previous cesarean (among the 10 hysterectomies)		
None (Only vaginal delivery)	1(10)	10
1 previous cesarean	3(30)	30
≥ 2 previous cesareans	6(60)	60

Postoperative outcomes were uneventful in 50% of hysterectomy cases. Complications included wound infections (20%), DIC (10%), transfusion reactions (10%), and psychiatric issues (10%) (Figure-2).

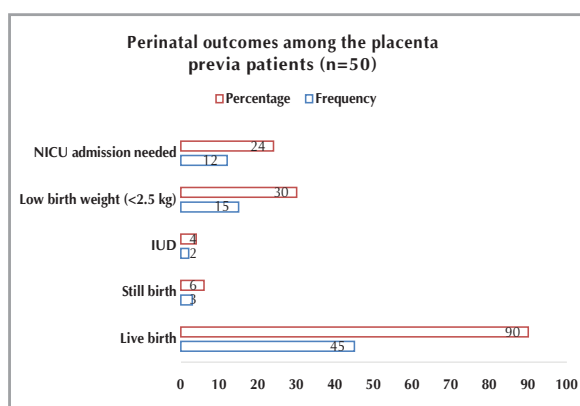


Figure-3: Perinatal outcomes among the placenta previa patients (N=50)

Live births occurred in 90% of cases, with stillbirths and IUDs in 6% and 4%, respectively. Low birth weight was seen in 30% of neonates, and 24% required NICU admission (Figure-3).

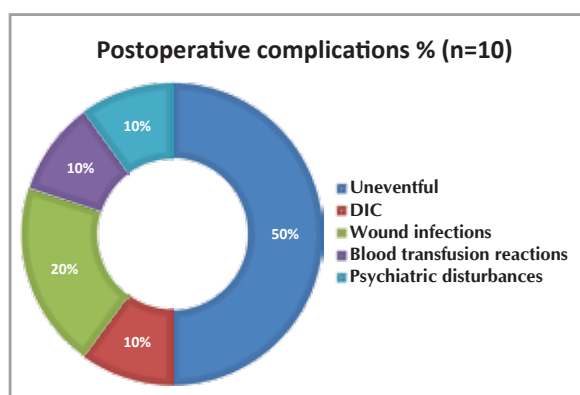


Figure-2: Postoperative complications in cesarean hysterectomy patients (n=10)

Discussion:

Most patients were over 35 years (62%), with low education and income levels, and primarily housewives. These features were consistent with South Asian and low-resource settings, where advanced maternal age and low socioeconomic status were linked to placenta previa.¹¹⁻¹³ Only 20% received regular antenatal care, reflecting similar findings by Parvin et al. and Lad and Shinde, who linked poor ANC to delayed diagnosis, worse maternal outcomes, and more bleeding complications.^{14,15} Vaginal bleeding occurred in 74% of cases, including 18% with severe hemorrhage, echoing Verma et al and Lam et al, who reported similar presentations requiring

emergency intervention.^{16,17} Half delivered at term, 40% late-preterm, and 10% early-preterm, similar to Jansen et al, who reported 46% preterm births and 17% before 34 weeks.¹⁸ Parvin et al and Syed et al also found increased preterm risk from bleeding and placental instability.^{14,19} Most patients had parity over two (52%) and 70% had prior cesareans, aligning with Halimi and Islam, who identified both as key risk factors.^{20,21} Prior curettage (18%) also matched findings by Gul et al and Akhtar et al on its link to abnormal placental implantation.^{22,23} Cesarean hysterectomy was performed in 20% of cases, mostly involving central placenta previa and multiple prior cesareans. Mohammed et al also found hysterectomy linked to placenta accreta and surgical history.²⁴ Yeaton-Massey and Lyell, and Miller et al confirmed rising hysterectomy and accreta risks with repeat cesareans and central previa.^{7,25} Half of the hysterectomy cases had complications, mainly wound infections (20%), with DIC, transfusion reactions, and psychiatric issues in 10% each. Similar morbidity rates were reported by Eller et al and Mohammed et al.^{24,26} Although planned approaches reduce risk, they are challenging in low-resource settings.^{10,27} Perinatal outcomes showed 90% live births and 10% fetal loss. Low birth weight occurred in 30%, and 24% needed NICU care. These rates aligned with findings by Kumari et al and Maiti et al,^{11,28} and with Roustaei et al and Victor et al, who emphasized neonatal risks in abnormal placentation.^{29,30} Overall, the study supported existing evidence on how obstetric history and sociodemographic factors influence outcomes in placenta previa.

Limitations:

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

Conclusion:

This study highlighted the significant clinical and public health burden associated with placenta previa, particularly among women with multiple prior cesarean deliveries, advanced maternal age, and limited access to quality antenatal care. These findings underscored the importance of strengthening antenatal surveillance, minimizing unnecessary cesarean sections, and ensuring timely referral to tertiary centers equipped for

managing high-risk pregnancies. A multidisciplinary approach and surgical preparedness are essential to reducing maternal morbidity and improving neonatal outcomes in placenta previa cases.

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