ORIGINAL ARTICLE

Incidence and Related Factors of Placenta Praevia Observed at a Tertiary Care Hospital

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ABSTRACT

Background: Obstetrics haemorrhage is one of the important causes of maternal death and morbidity. Placenta praevia is one of the important causes of obstetric haemorrhage. Incidence of placenta praevia is increasing due to advance maternal age, multiparity, H/O previous caesarean delivery, H/O myomectomy repeated abortion, repeated D&C and multiple pregnancy. This study was conducted to have a look into the high risk group of pregnancies for the development of placenta praevia who should be monitored carefully.

Methods: This cross sectional study was conducted from January 2024 to December 2024 at the department of Obstetrics and Gynaecology, Shaheed Ziaur Rahman Medical College Hospital, Bogura. 120 patients were identified as placenta praevia out of 170 APH patients. Painful abrubtio placenta was excluded, ethical clearance was obtained.

Results: Incidence of placenta praevia was 3.7% out of 3240 obstetrics patients. In this study placenta praevia complicated 8% of cases with H/O previous caesarean delivery, 6.46% pregnancies with H/O abortion, 2.7% with high age group (>35 years), 4.91% cases with multigravida, 8.33% patients with H/O manual removal of placenta, 0.83% with H/O myomectomy and 13.15% patients with multiple pregnancy.

Conclusion: This study showed that advance maternal age, multiparity, H/O previous caesarean delivery, abortion multiple pregnancy, H/O scaring of endometrium due to operation should be regarded as high risk for development of placenta praevia.

Keywords: Placenta praevia, caesarean section, abortion, M/R, D&C, Myomectomy, Hysterotomy, Retained Placenta, Gravidity, Multiple Pregnancy.

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INTRODUCTION

Placenta praevia, a leading cause of obstetric hemorrhage, occurs when the placenta implants partially or completely over the lower uterine segment.

Its incidence in pregnancies beyond 24 weeks ranges from 0.3% to 0.6%, and it remains a significant cause of maternal mortality in developing regions.[1,2,3]

Incidence of different types of placenta praevia[4,5]

Total placenta preavia	23.0% - 31.3%
Partial placenta preavia	20.6% - 33.0%
Low lying placenta preavia	37.0% - 54.9%

Risk Factors:[6,7]

Key risk factors include multiparity, advanced maternal age (>35 years), previous uterine surgery (especially caesarean section), multiple curettages, multiple gestation, closely spaced pregnancies, and smoking.

Classification & Clinical Significance:[8,9,10]

Classification guides management:

- **Type I (Low-lying):** Within 5cm of the internal os.
- **Type II (Marginal):** Reaches the os margin.
- **Type III (Partial):** Partially covers the os.
- **Type IV (Total):** Completely covers the os.

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Types I and II anterior are "minor," while Types II posterior, III, and IV are "major," associated with significant bleeding risk. The risk of placenta praevia and morbidly adherent placenta (accreta) increases substantially with prior cesarean sections.

Maternal Dangers:[11,12]
Major risks include antepartum and postpartum hemorrhage, shock, need for urgent intervention, preterm delivery, morbid placental adhesion (accreta spectrum), puerperal sepsis, and complications of anesthesia.

Fetal Dangers:[13]
Primary risks are prematurity, fetal distress, birth asphyxia (from placental compression), malpresentation, intrauterine growth restriction, and increased perinatal mortality.

Pathophysiology of Bleeding:[14]
Bleeding typically results from mechanical separation of the placenta during lower uterine segment formation in the third trimester, or from trauma/ manipulation of the engorged decidual venous sinuses.

Management Principles:[15]
Modern management aims to achieve fetal maturity while safeguarding maternal safety. It is based on:
Early diagnosis via ultrasound.
Avoidance of digital vaginal examination.
Expectant management with readiness for emergency intervention.
Elective delivery (typically by cesarean section) at term, or urgently in cases of severe, uncontrolled hemorrhage regardless of gestational age.
Advances in anesthesia, blood transfusion, antibiotics, and surgical expertise have significantly improved outcomes.

This study may help us find out the high risk group of pregnancy for the development of placenta praevia those may be monitored carefully.

MATERIALS & METHODS

This study was undertaken at the Department of Obstetrics & Gynaecology, Shaheed Ziaur Rahman Medical College Hospital from January 2024 to December 2024. It is a hospital based cross sectional study. Ethical clearance was obtained from ethical review committee. A total of 120 patients were identified as placenta praevia out of 170 antepartum haemorrhage (APH) patients and with due consent from the patient they were included in this study; painful abrubtio-placenta cases were excluded. Total 3240 obstetric patients were admitted in obstetrics ward during that period. Immediately after admission in labour ward with active p/v bleeding or H/O p/v bleeding relevant information, clinical examination and investigation findings were recorded in predesigned questionnaire.

Collected data was corrected and edited manually. Then data was analyzed by the SPSS program. Data was presented in tabular and graphical form.

RESULTS

Incidence of placenta praevia was 3.7% out of total obstetrics patients in 1 year 88.33% were associated with risk factors among them 16.67% had H/O pre caesarean delivery, 35% had H/O Abortion. Most of them were multigravida 41.67% placenta praevia occurred in gravida >3rd.

About 33.33% were associated with working outside the house. 31.67% had no ANC checkup, 2.5% patients had H/O assisted conception. 41.67% patients were admitted with severe anaemic condition, 7.50% patients had history of recurrence, 4.16% patients had history of multiple pregnancy, 8.33% patients had history of manual removal of placenta, 1.67% patients had history of uterine fibroid and uterine anomaly, 0.83% patients had history of myomectomy, 10.00% patients had history of pelvic inflammatory disease and endometritis.

In this study placenta praevia complicated 8.00% of cases of pregnancy with history of previous caesarean delivery. And placenta praevia complicated 6.46% of cases of pregnancy with history of abortion. And complicated 2.70% of cases of pregnancy with high age group (>35 yrs). And placenta praevia complicated 4.91% of cases of multigravida. 13.15% patients of multiple pregnancy had risk of occurrence of placenta praevia. In this study 53.33% patients were associated with central type of placenta praevia. Regarding management 76.67% patients were actively managed and 23.33% patients were treated by expectant method. Only 32.50% patients delivered vaginally and 67.50% patients delivered by caesarean section. Among 120 patients (including 5 twin pregnancy) 125 babies were born. One patient was died due to irreversible shock following massive PPH. In this study 31.20% perinatal death occurred. Maternal mortality was 0.83% and morbidity was 32.50%; among them 10.84%

patients were PPH with shock, two patients needed caesarean hysterectomy for uncontrolled PPH due to morbid adhesion of placenta.

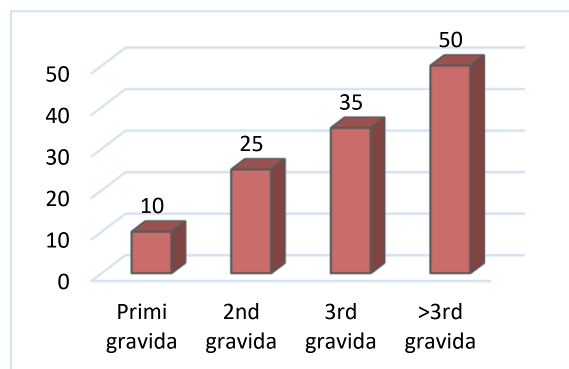

Figure-1: Bar diagram showing relationship between placenta praevia and gravidity of patients.

Table I: Risk factors predisposing to placenta preavia

Risk factors	No. of patients N (%)
H/O abortion, M/R, D&C	42 (35.00%)
H/O caesarean section	20 (16.67%)
H/O manual removal of retained placenta	10 (8.33%)
H/O uterine fibroid or any other anomaly	02 (1.67%)
Multiple pregnancy	05 (4.16%)
H/O myomectomy	01 (0.83%)
H/O endometritis and PID	12 (10.00%
Previous H/O Placenta Preavia	09 (7.50%)
Cigarette smokers	02 (1.67%)
H/O assisted conception	03 (2.50%)
No risk factors	14 (11.67%)

Table 2 shows -
650 pregnant patients with H/O abortion were admitted in 1 year and placenta praevia with H/O abortion were 42. So risk of occurrence of placenta praevia of those patients was 6.46%. 250 pregnant patients with H/O previous C/S were admitted in SZMCH, Bogura in 1 year and placenta praevia with H/O prior C/S were 20. So risk percentage were 8.00%.

Total 360 pregnant women with age >35 years were admitted in 1 year and placenta praevia with high age group (>35yrs) were 10. So risk percentage were 2.70%.

Table-2: Relation of placenta praevia with conditions.

Different conditions	No. of cases (n) & risk %
Relation of placenta praevia with abortion:	
Total admitted pregnancy	650
No. of placenta praevia in 1 year	120
Placenta praevia with H/O abortion	42
Risk percentage	6.46%
Relation of placenta praevia with previous caesarean section:	
Total admitted pregnancy	250
No. of placenta praevia in 1 year	120
Placenta praevia with H/O prior C/S	20
Risk percentage	8.0%
Relation of placenta praevia with high age:	
Total admitted pregnancy with >35 yrs of age in 1 year	360
No. of placenta praevia in 1 year	120
Placenta praevia with high age group up (>35yr)	10
Risk percentage	2.7%
Relation of placenta praevia with gravidity:	
Total admitted multigravida patients in 1 year	2240
No. of placenta praevia in 1 year	120
Placenta praevia of multigravida	110
Risk percentage	4.91%
Relation of placenta praevia with multiple gestation:	
Total admitted multiple gestation in 1 year	38
No. of placenta praevia in 1 year	120
Placenta praevia with multiple gestation	5
Risk percentage	13.15%
Relation of placenta praevia with recurrence:	
No. of placenta praevia in 1 year	120
Recurrence	9
Risk percentage	7.5%

Total admitted multigravid patients in 1 year 2240 and multigravid placenta praevia 110. So risk percentage were 4.91%.
Total admitted multiple gestation in 1 year 38, placenta praevia with multiple gestation 05. So risk percentage were 13.15%
Total number of placenta praevia were 120, and H/O previous placenta praevia were 09. So risk percentage were 7.50%.

DISCUSSION

The 3.7% PP incidence in the SZMCH Bogura exceeds estimates from population studies (≈0.5–1%) This discrepancy likely reflects the tertiary-hospital setting, which concentrates high-risk referrals, and possibly regional factors. In Asia, PP prevalence is indeed higher; a 2023 meta-analysis found Asian rates (~1.2%) roughly triple those in Europe. More recent data from Pakistan reported a 6.3% frequency in a small hospital. Nonetheless, the Bogura rate is still unusually high. It may partly result from high fertility rates and limited contraception use, as suggested in the original study's recommendations. Internationally, rising caesarean delivery rates have driven increases in PP incidence.[17,18] A recent review notes that PP "surged due to escalating caesarean sections and advancing maternal age. Bangladesh has seen growing C-section rates in the past decades, which may contribute to higher PP. In this hospital-based study (2024) placenta praevia incidence was 3.7%—higher than typical population estimates—likely reflecting referral bias and local obstetric factors (high parity, prior uterine surgery). Most cases had identifiable risks: multiparity, previous abortion, and prior caesarean section, with many women presenting late and with severe anaemia. Maternal morbidity (PPH, morbidly adherent placenta, hysterectomy) and substantial perinatal mortality were notable. [19,20] These findings highlight the importance of early sonographic diagnosis, close antenatal surveillance of high-risk pregnancies, and delivery planning by a multidisciplinary team with blood-bank and ICU readiness. Preventive efforts should focus on reducing unnecessary primary caesareans, improving family-planning uptake to limit unwanted pregnancies and unsafe abortions, and strengthening antenatal care and timely referral.[20] Overall, SZMCH Bogura experience corroborates contemporary evidence linking rising caesarean rates and advancing maternal age, high parity with increased placenta praevia risk. [18,20]

Conclusion

Although the aetiology of placenta praevia largely remain obscure and speculative, there is a strong association between advanced maternal age (>30 years), multiparity, H/O previous caesarean delivery and abortion with the subsequent development of placenta praevia. Multiple pregnancy, H/O scaring in the endometrium due to operation must be regarded as high risk for placenta praevia.

Recommendation

Hence this study advocated the low number of birth, unwanted pregnancy thus reducing M/R, induced abortion or D&C which is important factor for placenta praevia. Delivery by caesarean section should be justified in order to prevent placenta praevia in subsequent pregnancy so pregnancy with mentioned risk factors should be monitored carefully. Regular antenatal care, prior detection of blood group diagnosis by USG, early transfer the patient to hospital avoidance of P/V examination modern surgical techniques, safe anaesthesia blood transfusion can significantly reduce the maternal and foetal morbidity and mortality.

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