

## ORIGINAL RESEARCH

# Investigation of situation of placenta and result of pregnancy with past Caesarean Delivery

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### ABSTRACT

**Introduction:** The objective of the study was to examine the condition of the placenta and the outcome of pregnancy in women who had previously undergone a Caesarean delivery. **Materials and methods:** The specific positions of the placentas are documented apart from other factors. We classified each placenta as anterior, posterior, or fundal. Placentas located on the left or right side of the front and back walls of the uterus were referred to as anterior and posterior, respectively. The data obtained included mother age, gravidity, parity, number of miscarriages, gestational age at delivery, maternal blood group, birth weight (BW) of the baby, and 1 minute and 5 minute Apgar scores. **Result:** The socio-demographic information indicates that the average (standard deviation) age of the participants was 32 (5.3) years. Approximately 28.6% of the participants were between the ages of 31 and 35, while 27.3% were above the age of 35. All the participants were well-informed and nearly half of them (52%) had received education up to the primary level. **Conclusion:** The study indicates that there was a higher occurrence of maternal problems and foetal complications in patients with placenta praevia.

**Keywords:** placenta praevia, foetal issues, pregnancy, Caesarean section

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### INTRODUCTION

Placenta previa affects around 1 in 200 deliveries and is a major source of vaginal haemorrhage throughout the second and third trimesters. It is linked to higher chances of health problems for both mothers and infants. Placenta previa is a condition in which the placenta is positioned in the lower region of the uterus and blocks part or all of the internal cervical opening. Placenta previa is linked to significant maternal difficulties, such as bleeding that may necessitate blood transfusions, and the need for a hysterectomy during pregnancy. It is also related with negative outcomes for the baby, such as premature birth and neonatal death. In recent years, a growing number of academics hold the belief that the position of the placenta previa has a significant impact on the outcome of pregnancy.<sup>1,2</sup> Throughout the clinical treatment of placenta previa, it is important for obstetricians to have knowledge of the different types of placenta previa (complete and partial or marginal placenta previa) as well as the position of the placental attachment (such as the anterior uterine wall, posterior wall, and whether the

placenta overlaps a surgical scar from a previous caesarean section). Certain researchers have proposed that placenta previa, where the placenta is attached to the front wall and covers the uterine scar, should be referred to as pernicious placenta previa. Prior research has indicated that placenta previa is frequently associated with placenta accreta. Placenta accreta spectrum (PAS) is the most recent word used to refer to placenta accreta, increta, and percreta. The idea of "PAS disorders", which was suggested by FIGO in 2018,<sup>3</sup> was initially defined by Luke et al,<sup>4</sup> This involved unusual sticking together and invasive placenta. The American College of Obstetricians and Gynaecologists (ACOG)<sup>5</sup> The Royal College of Obstetricians and Gynaecologists (RCOG)<sup>6</sup> have released recommendations to improve the clinical treatment of PAS diseases using evidence-based approaches.

Postpartum bleeding (PPB) is more frequent and is linked to maternal death and health problems. Women who have had a previous caesarean section delivery are at a greater risk of experiencing PPH

compared to women who have not had a previous caesarean section.<sup>7,8</sup>The occurrence of PPH has also risen in recent decades.<sup>9,10</sup>In a recent study, we found that women who had previously given birth via caesarean section had a higher chance (3.44%) of experiencing retained placenta.<sup>11</sup>

The risk of retained placenta was greater in cases of postpartum haemorrhage compared to cases of retained placenta with normal blood loss. The causes of this higher risk are not completely known, although speculations centre around the damaged uterine wall and are similar to talks about the pathophysiology behind placenta previa and accreta.<sup>12</sup>

The long-term health complications and future reproductive outcomes of women who have undergone a previous caesarean birth require additional assessment. Majeed et al discovered a noticeably greater occurrence of placenta praevia in patients with a history of a scarred uterus. There is a relationship between the risk of placenta praevia and the number of previous caesarean deliveries. While few case-control and cohort studies have found a link between past CS and various placental problems, the findings are limited and inconclusive. The potential for catastrophic sequels of placental abnormalities and the rising caesarean delivery rates thus provides the justification to undertake further such studies to validate findings of previous researchers.

## MATERIALS & METHODS

150 pregnant patients who had previously had at least one caesarean section and visited the Gynaecology Department at Icare Institute of Medical Sciences and Research and Dr. Bidhan Chandra Roy Hospital, Haldia, West Bengal. We were included in a potential long-term study. Excluded from our study were individuals who smoke, patients with a birth order greater than four, those with repeated pregnancies, and patients who have both superimposed hypertension and preterm premature rupture of membranes. The specific positions of the placentas are documented apart from other factors. We classified every placenta as anterior, posterior, or fundal. Placentas located on the left or right side of the front and back walls of the uterus were referred to as anterior and posterior, respectively. The data collected include the age of the mother, the number of times she has been pregnant, the number of times she has given birth, the number of miscarriages she has had, the length of the pregnancy at the time of delivery, the blood group of the mother, the weight of the baby at birth, and the Apgar scores at 1 minute and 5 minutes.

The patients were monitored till delivery and the results for both the mother and baby were recorded. The maternal results, such as vaginal or caesarean delivery, postpartum haemorrhage, necessary interventions (such as B Lynch suture, internal iliac or internal base iliac artery ligation, or placental bed suturing), intraoperative identification of placenta accreta, postpartum hysterectomy, and requirement for blood transfusions, are recorded. The foetal outcomes such as premature birth (before 37 weeks), babies with low birth weight (less than 2.5 kg), babies with low Apgar scores, the necessity for admission to the neonatal intensive care unit (NICU), stillbirth, or neonatal mortality are examined. Analysed were the descriptive statistics of the position of the placenta and the proportion of aberrant placentation in patients with previous caesarean deliveries. A chi-square test will be employed to determine the relationship between aberrant placentation and the outcome of pregnancy in individuals who have previously undergone a caesarean delivery.

## INCLUSION CRITERIA

Pregnant women with 28 or more weeks of gestation who were diagnosed with placenta praevia were included in this study.

## EXCLUSION CRITERIA

1. All pregnant women who experience vaginal bleeding before 28 weeks of pregnancy.
2. APH caused by placental abruption, vasa previa, or any other local factor.
3. Pregnancy complicated by another medical condition such as diabetes mellitus.

## STATISTICAL ANALYSIS

The data was examined using SPSS for Windows, version 10. A chi-squared test was employed to compare groupings of data. A P value less than 0.05 was considered to demonstrate statistical significance.

## RESULTS

A total of 150 patients took part in the trial. The socio-demographic information indicates that the average (standard deviation) age of the participants was 32 (5.3) years. Approximately 28.6% of the participants were between the ages of 31 and 35, while 27.3% were above the age of 35. All the participants were well-informed and nearly half of them (52%) had received education up to the primary level. Approximately two-thirds (54%) of the participants are homemakers while 14.6% relied on daily wage labour for income.

**Table 1: Distribution of socio-demographic details (N=150)**

Variable	Frequency	Percentage
<b>Age group (in years)</b>		
≤ 25	28	18.6
25-30	38	25.3
31-35	43	28.6

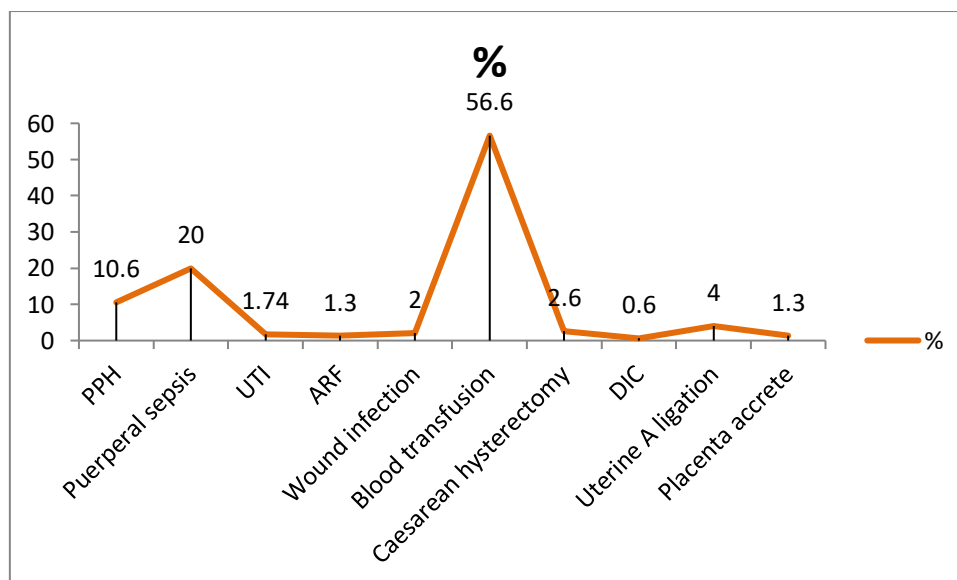
> 35	41	27.3
<b>Educational status</b>		
0-7	23	15.3
8-10	55	36.6
11-12	44	29.3
Graduation and above	28	18.6
<b>Occupational Status</b>		
Home Maker	81	54
Govt Salaried	18	12
Pvt salaried	29	19.3
Daily waged	22	14.6

Maternal health complications were frequently observed in the elder age group. 16 patients (10.6%) experienced postpartum bleeding, while 4 instances (2.6%) required obstetrical hysterectomy due to severe placenta praevia. These patients were grand multipara. Had a history of a previous caesarean

section, 30 patients (20%) experienced puerperal sepsis, 0.6% experienced disseminated intravascular coagulation (DIC), 1.3% experienced severe renal failure, and wound infection occurred in 1.3% of the patients (Figure 1).

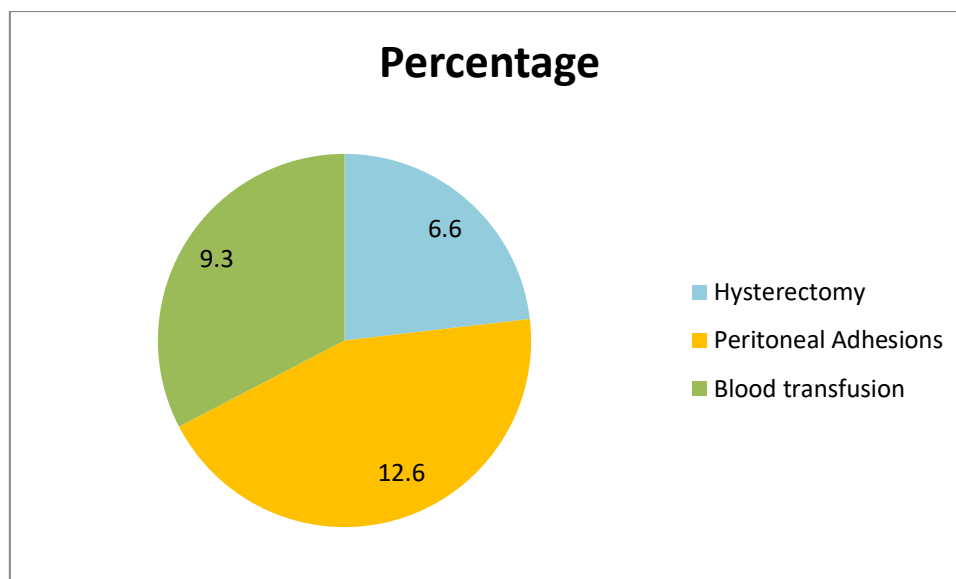
**Table 2: Maternal morbidity or outcome in placenta praevia**

Maternal morbidity	No. of cases	%
PPH	16	10.6
Puerperal sepsis	30	20
UTI	1	1.74
ARF	2	1.3
Wound infection	3	2
Blood transfusion	85	56.6
Caesarean hysterectomy	4	2.6
DIC	1	0.6
Uterine A ligation	6	4
Placenta accrete	2	1.3



**Figure 1: Maternal morbidity or outcome in placenta praevia**

Out of the total number of patients, 9.3% needed a blood transfusion while undergoing caesarean sections. Two women had to undergo hysterectomy and 12.6% experienced peritoneal adhesions. The average length of hospital stay was 6.9 (3.8) days. (Figure 2)



**Figure 2: Distribution of hysterectomy, peritoneal adhesions and blood transfusion (N=100)**

## DISCUSSION

54 patients had a past of over 2 caesarean sections, and having more children independently raises the chance of placenta praevia, as shown by Martinelli's study.<sup>13</sup> 38 patients had a long-term medical problem that made their pregnancy more complicated, so they were not included in the study. Those with scarred uterus had a risk that was three times greater than those with unscarred uterus. The occurrence of placenta praevia significantly rose in the study done by Kollmann et al.<sup>14</sup> From 0.36% in 2003 to a maximum of 0.74% in 2011, there was an increase in caesarean deliveries from 24.2 to 31.9%. Chen and colleagues<sup>15</sup> It was determined that having a previous caesarean delivery during pregnancy was linked to a two-fold increase in the chances of developing placenta praevia. Specifically, the risk after a vaginal birth was 0.9%, after an antepartum caesarean delivery was 2.0%, and after an intrapartum caesarean delivery was 1.6% ( $P < 0.001$ ). Yang and colleagues,<sup>16</sup> It was observed that in cases of multiple births where the mother has had a previous caesarean surgery, there is a 79% higher chance of placenta praevia and a 46% higher risk of placental abruption. The research conducted by Gurol-Urganci and colleagues,<sup>17</sup> The rate of placenta praevia in second births for women who had a vaginal first delivery was 4.4 per 1000 births, while it was 8.7 per 1000 births for women who had a caesarean section for their first pregnancy. In this examination of placenta praevia from different perspectives, we assessed this intriguing obstetric issue with the intention of uncovering the information and elements that can assist us in enhancing the outlook for both the mother and baby. The whole sample size was 15000, with 115 cases of placenta praevia. The occurrence of placenta praevia in our study was 0.76% (1 out of 130 pregnancies). Bahar and colleagues<sup>18</sup> exhibited a same pattern of occurrence (0.73).

The occurrence of placenta praevia varies among different publications. The prevalence of women with at least one prior caesarean section in our study, 2.0%, is comparable to the rate reported by To et al. in earlier research. (1.31 percent)<sup>19</sup> but significantly lower than the 5% observed by Jauniaux and Jurkovic.<sup>20</sup> We were unable to verify the findings of Naji et al.<sup>21</sup> Indicating that there is a higher occurrence of posterior placentae in women who have had a previous caesarean operation. However, we discovered that most of the placentae are positioned in the front, which is also the case for placenta praevia. The cause of this variation could be that Naji et al.<sup>21</sup> We evaluated the position of the placenta at 12 weeks and again at 28 weeks. Our percentage, 5.3%, for fundal placentae is, however, consistent with the 4.7% reported by Naji et al.<sup>21</sup> In addition, the rate of placental migration from a low-lying position is similar, around 60%, to the findings of Naji et al.<sup>21</sup> even though the time period between the observations varies.

## CONCLUSION

In situations where placenta praevia occurs, the rate of perinatal mortality is elevated. Factors that contribute to the higher rate of infant mortality include inadequate prenatal care, premature birth, and low birth weight. The study indicates that there was a higher occurrence of maternal problems and foetal complications in patients with placenta praevia. The study also indicates that maternal problems such as post-partum haemorrhage and interventions were more frequent in patients with placenta praevia and a prior history of caesarean delivery.

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