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Original Article

Outcome of Placenta Percreta Management by Planned Peripartum Hysterectomy in a Tertiary Level Hospital

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Abstract:

The incidence of placenta accreta spectrum is gradually increasing due to increased rate of caesarean sections (CS). Due to torrential haemorrhage, placenta percreta is one of the main reasons for emergency peripartum hysterectomies and mostly results in subsequent maternal mortalities and morbidities. In such cases, caesarean hysterectomy leaving the placenta in situ without any separation of placenta is preferred. We observed the outcome of such patients managed with planned caesarean hysterectomy. This cross-sectional observational study was conducted at the Department of Obstetrics, Faridpur Medical College Hospital, Bangladesh. A total of 14 patients who underwent planned caesarean hysterectomy due to placenta percreta were studied. We performed delivery of the baby through upper segment transverse incision without placental separation. The umbilical cord was ligated leaving the placenta in the uterine cavity and cut margins of the uterus was closed with few interrupted sutures and then hysterectomy was performed. Among 14 cases, the mean age was 30 years, mean gestational age at the time of delivery was 36 weeks, and all had a history of one or more CS. Before operation, mean Hb% was 8.9 g/dl. A mean of 1.5 units pre-operative and 1.2 units post-operative blood transfusions was needed. Post-operative mean Hb% was 10.5 gm/dl. Half of the women were discharged on their 3rd post-operative day. None of them had serious pre- and post-operative complications. In light of our findings, we recommend managing placenta percreta by planned caesarean hysterectomy with the placenta left in situ to minimise blood loss and subsequent maternal mortality and morbidity.

Key words: Placenta percreta, Planned peripartum hysterectomy.

Introduction:

Placenta accreta spectrum (PAS) is also known as morbidly adherent placenta, ranging from placenta accreta, placenta increta and placenta percreta[1,2]. This classification is usually based on the degree of placental invasion to the myometrium; placenta accreta when placenta invades the decidual layer, placenta increta when invades the myometrium and placenta percreta when it invades the serosa and adjacent organs[3]. The incidence of placenta accreta spectrum has gradually been increasing due to increased rate of caesarean sections throughout the world[2,4-6]. In cases of abnormally adherent placenta, the incidences are, placenta accreta (79%), placenta increta (14%) and placenta percreta (7%)[7,8].

For women with placenta praevia, the risk of placenta accreta is 3%, 11%, 40%, 61% and 67%, for the first, second, third, fourth, and fifth or more caesarean sections respectively[9]. Although incidence of placenta percreta is the lowest among these three conditions, in terms of previous caesarean sections, its incidence is very high[10]. Recent studies have suggested that placenta percreta resulting from an increased number of caesarean sections is the main reasone for emergency peripartum hysterectomies[11,12]. Consequently, management of this abnormally adherent placenta, particularly placenta percreta is highly related to maternal morbidity and maternal mortality. Maternal morbidity and mortality occur due to life threatening haemorrhage followed by massive blood transfusion, DIC, acute kidney injury, cardiorespiratory failure, septic shock and injury to the urinary bladder and surrounding structures[13-17]. Besides, caesarean hysterectomy is needed to manage torrential bleeding during operation which ultimately causes prolong hospital stay[18,19].

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In Bangladesh, haemorrhage is still the leading cause of maternal mortality[20-22]. The diagnosis of placenta accreta is made on obstetric ultrasonography, usually in the second and third trimester of pregnancy[23]. Sometimes, patients present with acute emergency that is mild to severe antepartum haemorrhage with features of shock without having any investigations. Therefore, managing such cases is challenging for obstetricians, particularly where the intensive care unit is not available. Moreover, torrential haemorrhage occurs when the baby is delivered by cutting the placenta; ultimately, this situation needs to be managed by emergency hysterectomy.

However, to reduce profuse intra-partum or post-partum haemorrhage and reduce maternal morbidity and mortality, it is preferable to perform caesarean hysterectomy leaving the placenta in situ without any separation of placenta. This management method of this life-threatening condition can also reduce a great number of maternal morbidity and mortality[24-26]. This is the preferable management method of placenta accreta spectrum for reducing operative blood loss, maternal morbidity and mortality.

In our country, the specific method of management of placenta percreta has not been established yet. Traditionally, our attitude is a little bit conservative. During caesarean operation in patients with placenta percreta, delivery of the baby is done by cutting the placenta and then separation of the placenta is tried. But it usually requires emergency peripartum hysterectomy in order to save the patient's life due to uncontrolled bleeding. In this study, we observered the outcome of patients with placenta percreta managed by planned caesarean hysterectomy. Understanding the outcomes will help to reduce maternal morbidity and mortalities.

Materials and methods:

This cross-sectional observational study was conducted at the Department of Obstetrics, Faridpur Medical College Hospital, Bangladesh from 1 February to 30 June 2021.

All patients who provided consent to participate in the study and underwent planned caesarean hysterectomy due to placenta percreta were included.

We performed delivery of baby through upper segment transverse incision without placental separation, then umbilical cord was ligated leaving the placenta in the uterine cavity. Subsequently, cut margins of the uterus was closed with few interrupted sutures and then hysterectomy was performed.

Outcome measures were operation time, estimated blood loss, injuries to the neighboring organs, associate morbidity, transfusion rates, length of hospital stay and re-admission. All data were collected in a pre-structured data collection form and statistical analysis of the outcome measures are presented as mean, standard deviations and percentages. SPSS version 21 (SPSS Inc., Chicago, IL, USA) was used for statistical analysis. The study protocol was approved by the Ethical Review Committee of Faridpur Medical College, Bangladesh.

Results:

A total of 14 cases of placenta accreta spectrum were included in this analysis, among 14 cases, the mean age of the participants was 30 ± 3.9 years. More than half of them have completed secondary schooling and women from urban area were more than women from rural areas (Table I).

Table I: Demographic characteristics of the participants

Characteristics	Value
Age (years), mean ± SD	30.1 ± 3.9
Level of education	
Primary, n(%)	4 (28.6)
Secondary, n(%)	8 (57.1)
Graduate, n(%)	2 (14.3)
Residency	
Rural, n(%)	6 (42.9)
Urban, n(%)	8 (57.1)

None of the participants was nulliparous and all of them had a history of one or more cesarean sections. Approximately 36% of them had a history of abortion (Table II).

Table II: Pregnancy history of the participants

Characteristics	Number	Percentage
Live birth counts		
0	1	7.1%
1	3	21.4%
2	7	50.0%
3	3	21.4%
Abortion counts		
0	8	57.1%
1	5	35.7%
2	1	7.1%
IUD counts		
0	13	92.9%
3	1	7.1%
Previous CS count		
1	3	21.4%
2	9	64.3%
3	2	14.3%

The mean gestational age at the time of delivery was 36± 2.2 weeks. Before operation, mean Hb% level was 8.9±1.7 g/dl with 50% of them had mild anemia, 21.4% had moderate anemia and 21.4% had severe anemia. A mean of 1.5-unit pre-operative blood transfusions was needed, where 21.4% needed no per-operative blood transfusion. Only 21.4% needed 3 units of blood transfusion. During post-operative period, a mean of 1.2 units of blood transfusion were needed; among them 37.7% were transfused a maximum of 2 units of blood. Regarding anesthesia, 78.6% needed regional anesthesia and only 21.4% were needed general anesthesia. Mean post-operative Hb% of the patients was 10.5±0.5 gm/dl. More than 71% had no per-operative organ injury and half of the participants left the hospital within 3 days of operation (Table III).

Table III: Requirement of blood and clinical characteristics of the participants

Characteristics	Mean±SD
Gestational age (weeks), mean ± SD	36 ± 2.2
Anemia level	
None, n (%)	1 (7.1)
Mild, n (%)	7 (50.0)
Moderate, n (%)	3 (21.4)
Severe, n (%)	3 (21.4)
Hb% before operation (g/dl), mean ± SD	8.9 ± 1.7
Per operative blood needed (units)	
0, n (%)	3 (21.4)
1, n (%)	4 (28.6)
2, n (%)	4 (28.6)
3, n (%)	3 (21.4)
Anesthesia	
GA	3 (21.4)
Spinal	11 (78.6)
Post operative blood needed (units)	
0, n (%)	2 (14.3)
1, n (%)	7 (50.0)
2, n (%)	5 (35.7)
Per-operative organ injury	
Bladder, n (%)	4 (28.5)
None, n (%)	10 (71.4)
Post-operative Hb% (g/dl), mean ± SD	10.5 ± 0.5
Post-operative hospital stay (days)	
3, n (%)	7 (50.0)
4, n (%)	2 (14.3)
5, n (%)	5 (35.7)

None of them had serious pre-and post-operative complications where ICU was needed as well as no complicated post-operative recovery.

Discussion:

Women who presented with antepartum haemorrhage due to placenta percreata with or without urinary bladder invasion. Placenta parcreata was diagnosed previously by USG and colour doppler or found incidentally after opening the abdomen due to emergency cause who presented with APH with shock. However, in both cases, planed peripartum hysterectomies were performed.

In our study we found the mean age of the women is 30.1±3.9 years; minimum and maximum ages were 25 years and 38 years respectively. The mean gestational age at the time of delivery was 36±2.2 weeks which was similar to study done by Sak et al., where they found mean gestational age 34.9±3.2[27]. It is worth mentioning that those who underwent caesarean hysterectomy before 37 weeks, mostly presented with severe antepartum haemorrhage with or without shock.

This study shows that 21.4 % had a history of one caesarean section, 64.3% had two prior caesarean sections, and 14.3% had a history of 3 caesarean sections. If caesarean rates continue to increase, the annual incidence of placenta praevia and placenta acreta and incidence of maternal death will also increase sustaintially.

In this study, we found 50% women had mild anaemia before surgery, ranging from 8 gm/dl to 10 gm/dl. Mean hemoglobin level before surgery was 8.9±1.7 gm/dl. However, those who presented with severe haemorrhage with shock had Hb% <7 gm/dl. Study also showed that only 21.4% of the women needed general anaesthesia, particularly in those women who had been admitted with massive APH with collapse. Otherwise those who were stable before operation, had undergone surgery by spinal anaesthesia (78.6%).

In our study, about 80% patients needed blood transfusion ranging from 1-3 units due to moderate to severe haemorrhage pre-operatively. Moreover, hemodynamically stable women (about 21.4%) did not need any blood transfusion during operation. In addition, only 21.4% required 3 units of per-operative blood transfusion.

Per-operative bladder injuries were observed in 28.6% of cases; particularly where placental tissue was invading the bladder and separating the bladder from the lower uterine segment was impossible. Sak et al. also observed that most common complication was bladder injury followed by infection[27].

Figure 1: Placenta accreta spectrum disorder (placenta percreta) involving whole thickness of myometrium and serosa with engorged vessels.

Figure 2: Uterus with placenta in situ after planned peripartum hysterectomy.

Other challenging issues were post-operative blood transfusion and early recovery. In our study, during post-operative period, a mean of 1.2 units of blood transfusion was required and only 37.7% women needed a maximum of 2 units of blood. Moreover, all women were discharged between 3rd and 5th post-operative day with a good recovery rate. Other research also supports that the patients with planned cesarean hysterectomies had minimal complications compared to conserving caesarean sections[28-30].

Conclusion:

Placenta acreta spectrum is a life-threatening pregnancy complications and one of the major causes of maternal mortality due to massive haemorrhage. Proper diagnosis and well-planned management are essential to minimise the amount of blood loss. We recommend that planned caesarean hysterectomy with the placenta left in situ can minimise blood loss with excellent recovery. Planned manual removal of placenta is discouraged due to association with increased maternal haemorrhagic mortality and morbidity.

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