

Risk factors and pregnancy outcome in patients having Placenta Previa along with Placenta Accreta

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Abstract

Objective:

The objective of the study was to determine the risk factors and pregnancy outcome in patients having placenta previa along with placenta accreta.

Material and Methods:

A cross sectional study was carried out at Obstetrics & Gynecology Department, Sir Ganga Ram Hospital Lahore. Total 50 pregnant women with singleton pregnancy and >24 weeks gestation. Patients having placenta previa on trans abdominal ultrasound and during caesarean section were included in the study. Placenta previa-accreta was clinically diagnosed while doing caesarean section.

Results:

The age of patients was from 20 to 50 years, with 42.0% >36 years. Majority of the patients were multipara while primipara with placenta previa were only 3.6%. All patients with placenta previa gave the history of cesarean section. Age, parity and previous history of cesarean section has significant relation with placenta previa. 12(24.0%) and 15(30.0%) of patients showed grade-III and grade-IV placenta previa respectively. 36(72.0%) had anterior previa and 14(28.0%) had posterior previa. 16 patients underwent caesarean hysterectomy. 11(22.0%) patients were diagnosed as having placenta accreta along with placenta previa.

Conclusion:

Risk of placenta previa along with accreta rises with previous cesarean sections, age and parity. Sonographic detection of abnormal placenta should be carried out for diagnosis to avoid massive maternal hemorrhage to reduce the morbidity linked with placenta previa.

Key Words: *Placenta Previa, Maternal Outcomes, placenta accreta*

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INTRODUCTION

Placenta previa may lead to substantial maternal morbidity and even mortality as it occurs in 0.3-1.5% of the pregnancies. Poor neonatal outcomes, including preterm/ premature delivery, low APGAR score, congenital abnormalities, low birth weight and perinatal death, are associated with it (Ananth et al., 2001; Jauniaux et al., 2019). Moreover, placenta-previa is also a complication of pregnancy often associated with postpartum hemorrhage endangering the lives of women (Sheineret al., 2015; Baumfeld et al., 2017). Placenta previa was originally defined, a placenta formed in the lower uterine segment using transabdominal scan (TAS) and classified on basis of relationship and distance from the lower edge of placenta upto uterine cervix's internal os. Grades I and II are called as minor degree placenta previa while grades III and IV are called as major degree placenta previa (Vahanian et al., 2015; Ruiter et al., 2016). Increased risk of placenta previa has been associated with increasing maternal age, multiparity, prior delivery of cesareans, previous abortions, other factors. Worse maternal outcome such as postpartum hemorrhage, obstretical hysterectomy, higher demand for blood transfusion are anticipated complications (Sheineret al., 2015; Crane et al., 2016).

Placenta accreta is a histopathological term. It was first defined by Irving and Hertig in 1937 as the unusual attachment of placenta to the underlying uterine wall in whole or partly (Luke et al., 1966; Fox & Sebire, 2007; Benirschke et

al., 2012). Placenta accreta is also divided into absolute and partial on basis of amount of placental tissue attached to underlying uterine bed and in same case varying depths of placenta accrete can coexist (Luke et al., 1966; Zosmer et al., 2018). Several risk factors are identified like advance multiparity, multiple gestation, maternal age previous abortions, previous caesarean sections and placenta previa in previous gestation (Hung et al., 2008). Damage to myometrium after dilatation and curettage is also one of the main risk factors (Palacioc-Jaraquemada, 2008).

Placenta previa itself is the risk factor for placenta accreta. In Asian countries, about 30% of mothers die because of antepartum or postpartum haemorrhage due to placenta previa. In a meta-analysis, the frequency of placenta previa ranged from 0.28% to 2.0% and about 1 in 200 pregnancies (Ananth et al., 2017). Thus, in the present study, we aimed to determine the risk factors and pregnancy outcome in patients having placenta previa along with placenta accreta.

MATERIALS & METHODS

Study Design & Population:

A descriptive case series study was carried out at Obstetrics & Gynecology Department, Sir Ganaga Ram hospital Lahore during the period from August 2019 to February 2020. Total 50 pregnant women with singleton pregnancy and >24 weeks gestation admitted to the labour ward were found to have placenta previa on trans abdominal ultra sound and in those

patients the diagnosis was found while doing caesarean section were included in study. Ultrasound tests were done with partially filled bladder and the distance was determined from lower edge of placenta upto internal os. If the women have multiple ultrasound, the most recent ultrasound results were used.

Ultrasound findings were used to classify the degree of placenta previa. Placenta previa was graded as major degree placenta previa when it covered the internal cervical os in whole, when the placenta penetrated only the internal cervical os or the margin was < 3cm from the internal cervical os then it was called as a minor degree placenta previa. Placenta parea accrete was clinically diagnosed while doing caesarean section. Included in the study are demographic characteristics of women along with description of procedure and intraoperative findings. The amount and complications of blood transfusions have been reported.

Statistical analysis:

Statistical analysis was carried out using SPSS v25.0, using the Chi-Square method. p-value equal or less than 0.05 was considered statistically significant. The numbers and %ages are presented, and Chi-square test was used to compare the results.

Operational definitions:

Placenta previa was classified as:

Grade-I when the placental margin was < 3cm above the internal so,

Grade-II when the placenta just reaches the internal os,

Grade-III when the placenta partially covered the internal os and

Grade-IV when the placenta completely covered the internal os.

RESULTS

The study population was divided into different maternal characteristics such as age groups, parity and gestational age as given in Table 1. Majority of the patients were between age of 31-35 years (36%) and >36 years (42.0%). Majority of the patients were multipara while primipara with placenta previa were only 3.6%. Interestingly all of the patients with placenta previa were with the history of previous Cesarean sections. Importantly in our study, age, parity and previous history of cesarean section has significant relation with placenta previa while gestational age has not significantly related to it.

Table 2 shows the grading and types of placenta previa in the studied patients. Majority of patients showed grade-IV placenta previa i.e. 15(30.0%), while 36(72.0%) had anterior previa and 14(28.0%) had posterior previa.

Pregnancy Outcome is given in the Table 3. Our data shows that 11 patients were diagnosed as having placenta accreta along with placenta previa. Sixteen patients underwent caesarean hysterectomy. 47 patients were recovered after successful surgery. While the rate of maternal mortality was 3(6.0%), all of them were with placenta accreta.

Table 1: Maternal characteristics/ risk factors of the patients with placenta previa

Characteristic /risk factors	Frequency (%)	P-value
Age groups		0.014
20-25 years	4(8.0%)	
26-30 years	7(14.0%)	
31-35 years	18(36.0%)	
>36 years	21(42.0%)	
Parity		0.045
0	3(6.0%)	
1	5(10.0%)	
2	17(34.0%)	
3	15(30.0%)	
4	10(20.0%)	
Gestational age (weeks)		0.678
<37	20(40.0%)	
>37	30(60.0%)	
No. of previous Cesarean Sections		0.034
0	0(0.0%)	
1	14(28.0%)	
2	22(44.0%)	
3	9(18.0%)	
4	4(8.0%)	
5	1(2.0%)	

DISCUSSION

It is well known that placenta praevia is one of the major reason of haemorrhage during the 3rd trimester, and it is associated with serious complications in pregnant mother and many adverse perinatal outcomes (Sheiner et al., 2015; Baumfeld et al., 2017). Our study indicates that maternal morbidity is high if placenta previa is associated by placenta accreta. The deaths in our study was linked to excessive blood loss. Similar results were mentioned by

Kiondo and colleagues, as they studied different risk factors that are linked with the placenta praevia presenting with severe bleeding (Kiondo et al., 2008). In our study, age, and parity are the risk factors which are significantly associated with it. Most of the studies found similar results (Neilson, 1999; Ananth et al., 2001) Although most studies have reported an association of increased presentation of placenta praevia with increasing maternal age and also with high parity (Neilson, 1999;

Ananth et al., 2001; Baumfeld et al., 2017) but there are few studies which shows no relationship at all (Kiondo et al., 2008). A history of dilation and curettage (D & C) of the uterus for any reason is associated increased risk of placenta praevia in subsequent pregnancies. Surgical manipulation leads to scarring of the uterus, and this insult of scarring of the uterus is associated with abnormal placenta and may predisposes women to placenta praevia (Faiz & Ananth, 2003). In a meta-analysis of more than 170 thousands pregnancies, placenta praevia was found in increased number of deliveries by caesarean sections. Similarly, our study showed that the history of previous cesarean sections, a surgical manipulation of uterus, are found to be risk factors which significantly associated with placenta praevia.

Table 2: Grading and types of placenta praevia in the studied patients

Grading	
I	13(26.0%)
II	10(20.0%)
III	12(24.0%)
IV	15(30.0%)
Type	
Anterior	36(72.0%)
Posterior	14(28.0%)

Table 3: Pregnancy Outcomes in the patients of placenta praevia

OUTCOME	Frequency (%)
Cesarean section	16(32.0%)
Placenta accreta	11(22.0%)
Maternal mortality	3(6.0%)

In our study, 72% of the patients were found with anterior wall placenta. It is already well described that the rate of complications is higher in placenta praevia patients as the placenta is attached to anterior wall of uterus as compared to the posterior wall (Jing et al., 2018). In many other studies, it was found that anterior wall placenta is associated with a significant higher rates in bleeding and ultimately linked with higher hysterectomy rates as compared to posterior placenta position (Baba et al., 2014; Liu & Xie, 2014). In the line with above published findings, current study shows that 32% of the patients underwent hysterectomy. Ultrasonography imaging is the mainstay of screening for abnormal placenta including placenta accreta, and thus should be employed for the diagnosis during prenatal period for optimal obstetric management.

This study depicts a glimpse of a larger problem in society. There are few limitations in our study, that are important to be considered. Firstly, only patients from a single tertiary hospital

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was studied. Secondly, it has limitations due to the small sample size and ignores other related socioeconomic factors. More studies are needed, so that the findings of this study and similar studies can be applied to the whole community.

CONCLUSION

Risk of placenta previa along with accreta rises with previous cesarean sections. Sonographic detection should be carried out to diagnose placenta accreta so that the obstetricians can be aware to reduce the morbidity associated with placenta previa. The patients should be educated and should be made aware of the importance of antenatal care for the early diagnosis of placenta previa for better management to avoid complications.

Conflict of interest

Authors declare that there is no conflict of interest.

Ethical approval

Ethical and other necessary approvals were taken from the Ethical Review Board of the Fatima Jinnah Medical University, Lahore, Pakistan.

Consent for Publication

All the authors approved the manuscript for publication.

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