MATERNAL AND NEONATAL OUTCOME OF PATIENTS HAVING PLACENTA PREVIA LYING OVER THE UTERINE SCAR

KARMAKER A[1], EUSUFZAI FK[2], SULTANA F[3]

Abstract

Background: *Placenta previa (PP) is defined as placenta implantation in the lower uterine segment with or without overlying the endocervical os. It is a significant cause of severe fetal and maternal morbidity and mortality.*

Objective: *To evaluate the maternal and neonatal outcome of placenta previa lying over the uterine scar due to previous one or two caesarean sections.*

Material and Methods: *This descriptive type of observational study was done in the Department of Obstetrics & Gynaecology, Enam Medical College & Hospital, Savar, Dhaka, from December 2020 to June 2021. All relevant data were collected prospectively in a prescribed form (questionnaire). Data were processed and analysed with the help of the computer program SPSS (Statistical Package for Social Sciences) windows version 25.*

Results: *This study shows the most familiar age group was 26-30 years, which included 46%, and 38% belonged to the 31-35 age group. The average age was 29.93 years. Maximum (54%) number of cases were admitted during the gestational period of 35-38 weeks. It was observed that maternal outcome was profuse intraoperative blood loss (100%), post-partum haemorrhage (26%), transfusion requirement (100%), and post-partum anaemia (28%). In addition, the outcome was fetal distress (36%) and lower Apgar scores at 1 min (24%).*

Conclusion: *This study shows women with placenta previa lying over the uterine scar were more likely to have poorer maternal and neonatal outcomes. To counsel their patients appropriately, healthcare providers should be aware of possible complications of placenta previa lying over the uterine scar.*

DOI: https://doi.org/10.3329/jdmc.v31i1.65468
J Dhaka Med Coll. 2022; 31(1) : 56-60

Introduction

Placenta previa is an obstetric complication in which the placenta is inserted partially or wholly in the lower uterine segment, and it is a leading cause of antepartum haemorrhage.[1] Hemorrhage is a significant complication of abnormal placentation. Early diagnosis and intervention in these conditions can more readily enable the physician to minimise the risks to the mother and fetus.[2]

Morbidly adherent placenta (MAP) occurs when the placenta fails to detach from the uterine wall due to abnormal implantation at the basal plate. It is one of the most devastating complications in pregnancy. A morbidly adherent placenta includes placenta accreta (chorionic villi attach to myometrium), increase (chorionic villi invade more profoundly into the myometrium) and per cent (chorionic villi invade through the myometrium to surrounding organs).

The most important risk factors for placenta previa and accreta are age, parity, and a history of uterine surgery. The identified risk factors included previous caesarean section, grand-multiparity, previous uterine evacuation of retained products of conception and multiple pregnancies.[3] Maternal complications had post-partum anaemia, post-partum haemorrhage & operative site infection.[4]

1. Dr. Anuradha Karmaker, Assistant Professor, Gynae & Obstetrics, Enam Medical College, Savar, Dhaka.
2. Dr. Farzana Khan Eusufzai, Student (MS Course-Gynae & Obstetrics), Mymensingh Medical College, Mymensingh.
3. Dr. Fahmida Sultana, Assistant Professor, Gynae & Obstetrics, Enam Medical College, Savar, Dhaka.

Correspondence: Dr. Anuradha Karmaker, Assistant Professor, Gynae & Obstetrics, Enam Medical College, Savar, Dhaka. Mobile-01717496151, E-mail: anuradha.karmaker@gmail.com

Received: *10-01-2022* ***Revision:*** *16-02-2022* ***Accepted:*** *01-04-2022*

The primary diagnostic modality is transvaginal ultrasound.[5] Early prenatal diagnosis allows for timely management, thus reducing perinatal and maternal morbidity and mortality by keeping an eye on the need for blood transfusion and arranging for a team of an experienced surgeon, anaesthesiologist and paediatrician.[6]

Placenta previa (PP) is subdivided into four types depending upon the degree of extension of the placenta to the lower segment: type I-low lying, type II- marginal placenta, type III-partial Previa, and type IV-complete Previa. However, PP is particularly dangerous when covering a uterine scar. Placenta previa, which attaches to the previous uterine scar, is also called pernicious placenta previa (PPP), one of the most hazardous types of PP. The incidence of placenta previa lying over the uterine scar has increased correspondingly with the increase of cesarean section and often leads to unexpected bleeding during delivery and increased risk for peripartum hysterectomy.[7,8]

Several previous studies have reported the clinical outcomes and associated risk factors of PP.[9-13] Therefore, the present study aimed to evaluate the maternal and neonatal effect of placenta previa lying over the uterine scar.

Material and methods

It was the descriptive type of observational study carried out in the Department of Obstetrics and Gynecology, Enam Medical College & Hospital, Savar, Dhaka, from December 2020 to June 2021. Admitted cases of pregnant women with >28 weeks of gestation were diagnosed as placenta previa lying over the uterine scar due to previous one or two caesarean sections, and uterine scar due to other causes (myomectomy, hysterotomy) was excluded. A total of 50 patients were included. Data were collected using a structured questionnaire containing all the variables of interest. Data were processed and analysed with the help of the computer program SPSS fo r windows version 25.

Results

Age in this study ranged from 21-35 years. The commonest age group was 26-30 years, which included 46%, 38% belonged to 31-35 years age group. The (Table I) mean age was 29.80±3.91 years. The maximum number of cases 54% was admitted at the gestational period between 35-38 weeks (Table II). Majority (64%) patients were multipara and 28% placenta praevia occur in parity ≥4 (Table III). More incidence of placenta praevia with anterior location (52%) (Table IV). 58% of cases were placenta accreta and 42% of them were not placenta accreta (Table VI). Regarding neonatal outcome LBW was 30%, fetal distress found in 36% cases, and in 4% cases perinatal death occurred.

Table-I

Age distribution of the patients (n=50)

Age group (years)	Number of patients	Percentage (%)	Mean±SD
21-25	8	16.0	29.93±3.84
26-30	23	46.0	
31-35	19	38.0	

Table-II

Gestational age at admission (n=50)

Gestational age in weeks	Number of patients	Percentage (%)
28-30 week	3	6.0
31-34	12	24.0
35-38	27	54.0
≥38	8	16.0

Table-III

Distribution of placenta praevia according to gravidity (n=50)

Gravidity	Number of patients	Percentage (%)
Multigravida (2-3)	34	68.0
Grandmultigravida (≥4)	16	32.0

Table-IV

Mode of delivery (previous) in multigravida and grandmultigravida (n=50)

Mode of delivery	Multigravida		Grandmultigravida	
	No	%	No	%
CS	34	100	16	100
One time	34	100	16	100
Two time	16	47.1	10	62.5
Vaginal delivery				
One time	18	52.9	8	50.0
Two time	0		2	12.5

Table IV

Location of placenta praevia (n=50)

Location	Number of patients	Percentage (%)
Anterior	32	64.00
Central	18	36.0

Table V

Mode of delivery in placenta praevia (n=50)

Mode of delivery	No. of patients	Percentage
Caesarean section	41	82.0
Vaginal delivery	9	18.0

Table VI

Distribution of types of placenta preoperatively (n=50)

Type	No. of patients	Percentage (%)
Accreta	29	58.0
Not accreta	21	42.0

Table-VII

Maternal outcome of study subjects (n=50)

Outcome	No. of patients	Percentage %
Intraoperative blood loss>1000 mL	44	88.0
Intraoperative blood loss > 3000 mL	6	12.0
Postpartum hemorrhage	13	26.0
Transfusion	50	100.0
Hemorrhagic shock	6	12.0
Postpartum anemia	24	48.0
Hysterectomy	12	24.0

Table VIII

Neonatal outcome of study subjects (n=50)

Neonatal outcome	Number of patients	Percentage (%)
Birth weight		
<1500 gm	4	8.0
1500–2500 gm	11	22.0
2500–4000 gm	34	68.0
>4000 gm	1	2.0
Fetal distress	18	36.0
APGAR <7 at 1 min	12	24.0
APGAR ≥7 at 1 min	38	76.0
APGAR <7 at 5 min	3	6.0
APGAR ≥7 at 5 min	47	94.0
NICU admission	14	28.0
Perinatal death	2	4.0

Discussion

Placenta praevia (PP) is regarded as one of the causes of uterine bleeding during the later stages of gestation and has been recognized as an important determinant of maternal morbidity and adverse perinatal outcome of a newborn.14 Prior studies have shown that PP was significantly associated with a range of adverse outcomes for both mothers and neonates. This descriptive type of observational study was carried out in the Department of Obstetrics and Gynecology, Enam Medical College & Hospital,

Savar, Dhaka, to evaluate the maternal and neonatal outcome of placenta previa lying over the uterine scar. The present study findings were discussed and compared with previously published relevant studies.

In this series, the commonest age group was 26-30 years. These findings are consistent with Zhang et al.[15] studies, which showed that advancing maternal age hurts the risk of placenta praevia, regardless of other known risk factors. Previous studies reported risk of placenta praevia increased dramatically with advancing maternal age. Placenta praevia occurs 2-3 times more commonly in those above 35 years than in those at age 20 years or less.[16,17] Increased maternal age & high parity-appeared to be equally important in raising the incidence of placenta praevia.

A meta-analysis by Faiz et al. found that advancing maternal age, multiparity, previous caesarean delivery, and abortion increased the risk of placenta previa.18 Another meta-analysis by Ananth CV found an increased risk of placenta previa with the increasing number of caesarean deliveries.[19] Due to the comparatively shorter duration of the current study, the number of patients was insufficient to determine the effect of an increasing number of caesarean sections on the development of placenta previa.

This study shows 58% were placenta accreta. Placental accreta is a serious obstetrical complication, and its management is challenging, with more difficult surgical operations and higher hysterectomy rates.[20,21]

This study shows that women with placenta previa lying over the uterine scar had a higher rate of intraoperative blood loss, postpartum haemorrhage, transfusion, and hysterectomy and that the infants born to women with placenta previa with coverage of uterine scar had lower Apgar scores at 1 min. These findings are consistent with another study.[7] Some studies have addressed which types of placenta previa are associated with the severity of symptoms in mothers and neonates. However, data aimed at understanding placenta previa lying over the uterine scar were insufficient. Nevertheless, these results showed that the proportion of women with hysterectomies (24%) was higher than that reported in most other studies. For example, Ling Li[12] reported that the hysterectomy rate was 8.47% in women with placenta previa lying over the uterine scar. Another study[13] in China reported hysterectomy rates were 11.9% in women with placenta previa lying over the uterine scar.

Conclusion

This study shows that women with placenta previa lying over the uterine scar were likelier to have poorer maternal and neonatal outcomes. Women with these conditions should be considered high-risk and delivered to institutions with skilled personnel, adequate blood transfusion facilities, and good neonatal resources. An emergency referral system should be established from the union and Upazila health centre to the district hospital. Early diagnosis and proper monitoring of these patients could minimize the possibility of poor outcomes.

References

1. Leela R, Mamata N, Rani V and Reddy P. Pre-Operative Detection of Placental invasion by USG & MRI in Case of Placenta Previa and its Correlation with Clinical Findings and Outcome. British Biomedical Bulletin 2015;3(1): 94-104.
2. Saleh H, Haney E. Placenta Previa and Accreta. Evanston Northwestern Healthcare, Evanston, Illinois 2008;2:1-6.
3. Anzaku AS, Musa J. Placenta Previa: Incidence, Risk factors, Maternal and Fetal Outcomes in a Nigerian Teaching Hospital. Jos Journal of Medicine, 2012; 6(1):42-45
4. Anderson J, Etches D. Prevention and Management of Postpartum Hemorrhage. Am Fam Physician. 2007;75(6):875-882.
5. Rajeshwari RR, Rubini M. Maternal and perinatal outcome in placenta previa - one year study in tertiary care center in Tamil Nadu, India. Int J Reprod Contracept Obstet Gynecol 2016;5:2819-22.
6. Hasegawa J, Matsuoka R, Ichizuaka K, Mimura T, Sekizawa A, Farina A, et al. Predisposing factors for massive haemorrhage during cesarean section in patients with placenta previa. Ultrasound Obstet Gynecol. 2009;34(1):80-4.
7. Rao J, Fan D, Zhou Z, Luo X, Ma , Wan Y. Maternal and Neonatal Outcomes of Plac ta Previa with and without Coverage of a Uterine S r: A Retrospective Cohort Study in a Tertiary Ho ital. International Journal of Women's Health 202 13 671–681.

8. Yu L, Hu K, Yang H. A retrospective analysis on the pernicious placenta previa from 2008 to 2014]. Zhonghua Fu Chan Ke Za Zhi. 2016;51(3):169–173.

9. Baldwin HJ, Patterson JA, Nippita TA. Maternal and neonatal outcomes following abnormally invasive placenta: a population-based record linkage study. Acta Obstet Gynecol Scand. 2017;96:1373–1381

10. Rosenberg T, Pariente G, Sergienko R. Critical analysis of risk factors and outcome of placenta previa. Arch Gynecol Obstet. 2011;284(1):47–51.

11. Daskalakis G, Simou M, Zacharakis D. Impact of placenta previa on obstetric outcome. Int J Gynaecol Obstetr. 2011;114 (3):238–241.

12. Li L, Liu Y, Yu N. Analysis of risk factors for pernicious placenta praevia. Int J Clin Exp Med. 2017;10(2):3575–3581.

13. Zhu CK, Wang F, Zhou YM. Maternal outcomes in pregnant women with pernicious placenta previa. Journal of Zhejiang University (Medical Sciences). 2015;44(3):253–257.

14. Brenner WE. Characteristics of patient with placenta praevia and results of expectant management. Am J Obstet Gynaecol 2008;132:180-191.

15. Clark SL, Koonings PP, Phelan JP. Placenta praevia/ accrete and prior caesarean section. Obstet Gynaecol 2015;66:89-92.

16. Tuzovic L, Djelmis J, IIijic M. Obstetric risk factors associated with placenta Praevia development: Case-Control study. CMJ. 2003;44(6):728-733.

17. Chattopadhyay SK, Karif H, Sherbeeni MM. Placenta praevia and accrete after previous caesarean section. Eur J Obstet Gynaecol Reprod Biol 2013;52:151-6.

18. Faiz AS, Ananth CV. Etiology and risk factors for placenta previa: an overview and meta-analysis of observational studies. J Matern Fetal Neonatal Med 2003;13:175–90.

19. Ananth CV, Smulian JC, Vintzileous AM. The association of placenta previa with the history of cesarean delivery and abortion: a meta-analysis. Am J Obstet Gynecol 2017;177:1071–8.

20. Shazly SA, Hortu I, Shih JC. Prediction of success of uterus-preserving management in women with placenta accreta spec- trum (CON-PAS score): a multicenter international study. Int J Gynaecol Obstetr. 2020.

21. Cirpan T, Akdemir A, Okmen F. Effectiveness of segmental resection technique in the treatment of placenta accreta spectrum. J Maternal Fetal Neonat Med. 2019;1–7.