

Original Article

SCARRED UTERUS-A RISK FACTOR FOR PLACENTA PREVIA

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ABSTRACT

Objective: To compare the incidence of placenta previa in pregnant women with previously scarred and unscarred uterus.

Methodology: Prospective cohort study conducted at GGH, Department of OBG, Kurnool from December 2020 to December 2022. 1000 patients (500 PVD depicts previous vaginal delivery and 500 PSU depicts previous scarred uterus). All patients were admitted through emergency or OPD.

Results: There is an increased risk of placenta previa and related complications in scarred uterus when compared to vaginal deliveries.

In our study age is mostly found to be between 26 to 30 years, gestational age between 33 to 36 weeks, placenta previa is 6 to 8% in PSU according to placenta localization by USG. Maternal complications are more in PSU group like PPH, interventions required in PSU are 35.3%, 29.4% respectively. Risk of Placenta previa is 69.2%, 27.6%, 1.2% and 2% in 1,2,3 c-sections and D&C respectively.

Conclusion: Increase in the incidence of placenta previa is in rising trends with increase in number of c-section and surgeries on uterus.

Key words: PSU, PVD, PLACENTA PRAEVIA

INTRODUCTION

Placenta previa is the medical term when placental tissue covers the internal cervical os. Consequences may include the necessity for a cesarean delivery, significant bleeding, and preterm birth. Any lady who is over 20 weeks pregnant and has painless vaginal bleeding should have placenta previa suspected.¹ Antepartum bleeding after 20 weeks of pregnancy should prompt sonographic determination of placental location in women who have not had a second trimester ultrasound examination because palpating the placenta can result in serious hemorrhage.

This should be done before performing a digital vaginal examination. One of the well-known "triad" causes of maternal fatalities in both industrialized and developing nations remains to be obstetrical bleeding, along with hypertension and infections. The frequency of emergency hysterectomy has grown in cases where there has been increases in the cesarean section rate, abnormal placentation rate, and cesarean section rate.² As a result, pregnancy morbidity and death rates are rising.³ As of the third

trimester, P.previa is an obstetric problem caused by an aberrant placentation close to the internal cervical region os, typically manifested as painless of the vaginal bleeding. However, because of technological advancements in ultrasonography, placenta previa is now frequently diagnosed before the pregnancy. The three forms of a placenta previa that have been recognised historically are total, partial and a marginal. These concepts have recently been combined into the two terms full and a slight previa.⁴ Full previa is when the placenta completely covers cervical os.To be classified marginal previa, the placenta's leading edge must be less than 2 cm from the internal os, but it need not entirely cover.

The P.previa may results in substantial mortality and the mortality for both the mother and the foetus due to the inherent risk of haemorrhage.³ Because prompt care will have a better impact on maternal and perinatal health, the primary need of a study is to understand the association or relationship between the placenta previa is more common in prior cesarean section. As a result, this study primarily evaluates P. previa in a prior section along with other risk factors such abortions, D&C, and myomectomy.

MATERIALS AND METHODS

- Sample size is 1000 with 500in each group
 - This study conducted in Department of OBG Kurnool which include study group with history of previous scar in uterus after crossing 28 weeks of gestation.
 - Includes previous dilatation and curettage.
 - Previous myomectomy
 - Control Group includes all pregnant women with no history of previous scar in uterus after 28 weeks of gestation.
 - Primi gravida are excluded.
 - Patients with bleeding prevaginum before 28 weeks were excluded.
 - APH due to abruption were excluded
 - All data of the patients collected in a systematically designed proforma.
- Results were analyzed by descriptive statistics.

RESULTS

Table 1: Distribution of study subjects by age

Table 2: Distribution of study subjects in Group PSU by history of number of previous

Age (in years)	Group PVD	Group PSU
Number of previous sections and D&C	Group PSU	Group PSU
	Number	Percentage
1	346	69.2%
2	138	27.6%
3 and above	6	1.2%
D&C (Dilatation & Curettage)	10	2%
Total	500	100%

Table 3: Distributions with study subjects by gestational age

Gestational age (in weeks)	Group PVD		Group PSU	
	Number	Percentage	Number	Percentage
28 – 32 weeks	28	5.6%	32	6.4%
33 – 36 weeks	228	45.6%	252	50.4%
37 – 40 weeks	244	48.8%	216	43.2%
Total	500	100%	500	100%

Yates' chi-square = 2.837, p = 0.24

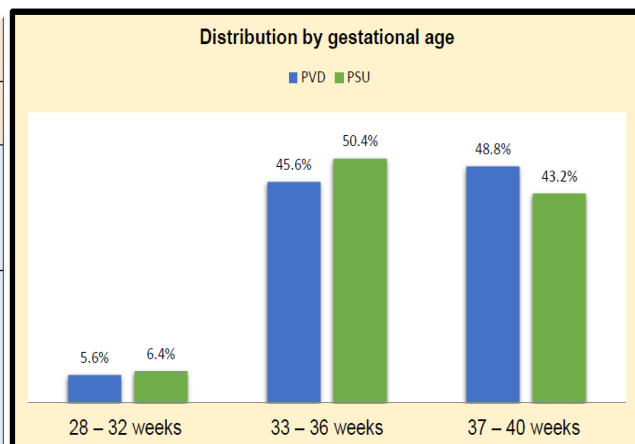


Table 4: Distributions with study subjects according to Placental location in USG

Placenta location	Group PVD		Group PSU	
	Number	Percentage	Number	Percentage
Placenta previa	12	2.4%	34	6.8%
Normal placenta	488	97.6%	466	93.2%
Total	500	100%	500	100%

Yates' chi-square = 10.049, p = 0.001

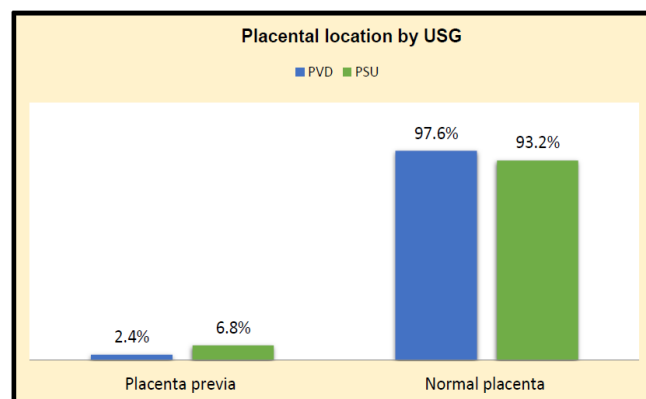


Table 5: Distribution by history of ante- partum hemorrhage (APH)

APH	Group PVD		Group PSU	
	Number	Percentage	Number	Percentage
Present	8	1.6%	22	4.4%
Absent	492	98.4%	478	95.6%
Total	500	100%	500	100%

Yates' chi-square = 0.523, p = 0.46

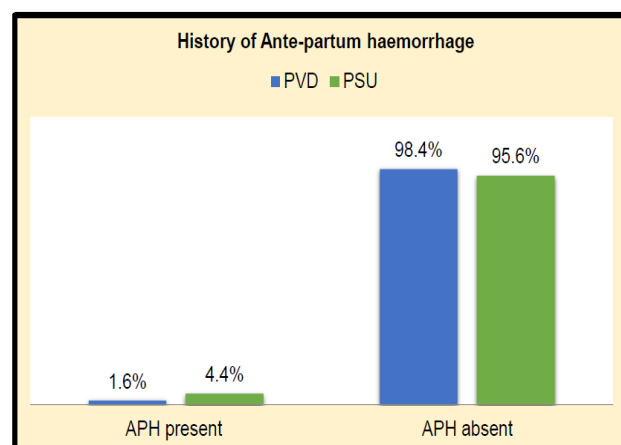


Table 9: Maternal complications with normal and abnormal placentation in group PVD and group PSU

Group	Placental location	Maternal complications			
		PPH		Intervention	
		Number	Percent	Number	Percent
PVD (n = 500)	Placenta previa (n = 12)	4	33.3%	1	8.3%
	Normal placenta (n = 488)	2	0.4%	1	0.2%
PSU (n = 500)	Placenta previa (n = 34)	12	35.3%	10	29.4%
	Normal placenta (n = 466)	4	0.8%	2	0.4%
Total (n = 1000)		22	2.2%	14	1.4%

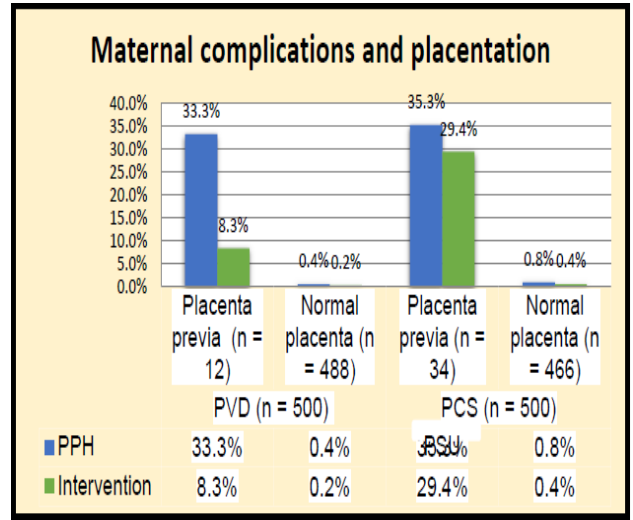
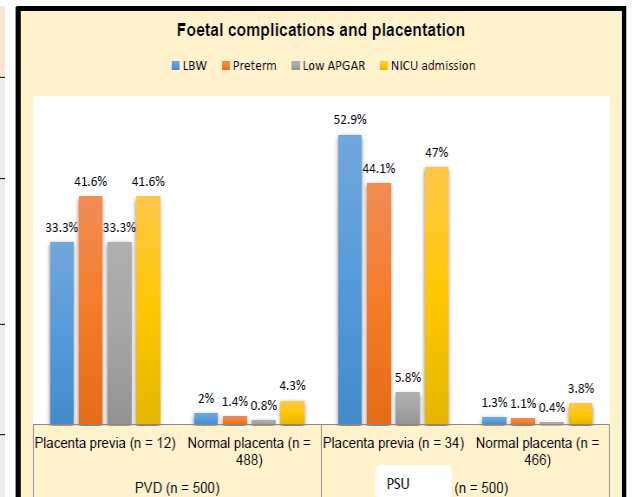


Table 10: Foetal complications with normal and abnormal placentation in group PVD and group PSU

Group	Placental location	Foetal complications			
		LBW	Preterm	Low APGAR	NICU admission
PVD (n = 500)	Placenta previa (n = 12)	4 33.3%	5 41.6%	4 33.3%	5 41.6%
	Normal placenta (n = 488)	18 2%	7 1.4%	4 0.8%	21 4.3%
PSU (n = 500)	Placenta previa (n = 34)	18 52.9%	15 44.1%	2 5.8%	16 47%
	Normal placenta (n = 466)	6 1.3%	5 1.07%	2 0.4%	18 3.8%
Total (n = 1000)		46 (4.6%)	32 (3.2%)	13 (1.3%)	60 (6%)



DISCUSSION

Placenta previa, a serious pregnancy issue where the placenta is developing partially or absolutely attached to the interior cervical ostium(os), can have adverse effects on both the maternal and the foetus beyond 20 weeks of gestation. About 0.3- 0.5% of pregnancies experience it, with senior age being the main risk factor. Conditions that may cause endometrial tissue damage include mother age, male foetus during pregnancy foetuses, smoking, multiparity, previous history of cesarian procedures (C- sections), along with ongoing abortion.

The reason is likely that the placenta moves to more vascularized regions of the uterus. The fundus, which has the capacity to supply more blood, is often where the placenta develops. Defective vascularization of the endometrium as a result of scarring or atrophy brought on by earlier surgeries or infections may be the cause of reduced differential growth of a portion of the lower uterine segment, less of an upward shift in placental positioning. A prospective cohort study was carried out at The Department of Obs and Gynae, Kurnool Medical College and associated hospital, Kurnool from March 2021 to March. The result and analysis can be discussed under the following subheadings.

Demographic Data

In the current study, 32.4%, 26.8%, 3%, and 0.8% of the women in this age group of 21-25 years, 31-35

years, < 20 years, and 36 and above years respectively, were PVD. In the group PVD, 37% of the women with PVD 25 in this age group of 26- 30 years. In the PSU group, 39.6% of the women PVD in this age range of 26-30, followed by 29.2%, 27.8%, 1.6%, and 1.8% of the women in the 21-25, 31-35, 20, and 36-and-above age ranges, respectively. In another study the age distribution revealed that 26 women (34.0%) were between the ages of 26-30, 23 (30.0%) were between the ages of 36-40, 17 (22.4%) were between the ages of 31-35, and 10 (13.0%) instances were between the ages of 21-25.^{4,5}

History of Previous Scarring

Placenta previa was observed in 25 cases of this current study in 3.1%, 12.3%, 33.3%, and 10% of the cases, respectively, with histories of one, two, three, or more cesarean sections and histories of DC. The differences were determined to be statistically significant. There were 59 patients of previous cesarean section in research of a comparable nature conducted by Sasindra Kumar Das et al. was 2100.⁶ There were 66 of these patients who had placenta previa. 3.14% of pregnancies end with placenta previa. According to the study, there were 60, 5, and 1 patients with P. previa with prior one, two, and three prior cesarean deliveries. This is consistent with a study by Chen X et al.⁷

Ante-Partum Haemorrhage

1.6% of the women in group PVD and 4.4% of the women in group PSU in the current study had ante-partum hemorrhage, although the difference was found to be statistically insignificant. Study by Saima Aziz et al. lends support to our investigation.⁸ In our study, 18.2% of cases were asymptomatic, while 81.8% of cases had bleeding when they were admitted. Our research is consistent with those of Kavitha and colleagues.⁹ 80.3% of patients in the current study had cephalic presentations, 15.2% had breech presentations, and 4.5% had transverse lie.

Maternal Complications

In the current study, the postpartum hemorrhage and intervention rates (35.3% and 29.4%, respectively) were higher in the placenta previa group of women with prior uterine scarring than in the vaginal birth group (33.3% and 8.3%). The study by Matalliotakis M et al., which found that 54.0% of women with two or more prior C-sections had had at least one, supports our research.¹⁰ Six (8.0%) of these patients experienced placenta percreta, seven (9.0%) were moved to the intensive care unit (ICU), 14 (18.0%) of the females. So, this can be summarized as below:

- In order to examine the prevalence of placenta previa and its effects during the current pregnancy women with previously scarred uteruses and those who had not, a prospective cohort research with a total 1000 participants in the trial, of which 500 had a history of vaginal delivery in the past (Control Group PVD) and 500 had a history of uterine scarring in the past (Study Group PSU)
- In this current study, there were no significant differences in these patients
- distribution between the two groups based on presenting complaints like APH, and mean age, parity, GA, and foetal appearance were comparable in two groups.

Previous cesarean sections were performed on 69.2% of the women in group PSU, followed by two and more on 27.6% and 1.2% of the women, respectively, while 2% of the women who had a history of D&C. With their history of one, two, three, or more cesarean sections or history of DC, placenta previa was observed in 3.1%, 12.3%, 33.3%, and 10% of instances, and the difference was determined to be statistically significant, indicating that scarring is a substantial risk factor for previa. Placenta prevalence was 2.4% in the PVD group and 6.8% in the PSU group, indicating a higher prevalence in the PSU group.

- The Placenta Previa group of PSU had more postpartum hemorrhage cases and interventions than the PVD group.
- Low birth weight (LBW), preterm, low APGAR scores, and NICU admissions were comparable in both groups.

CONCLUSION

According to the results of the current study, uterine scarring in the past significantly increased the likelihood of placenta previa in a subsequent pregnancy. Therefore, it is important to promote vaginal delivery as much as possible. The key to better maternal care is regular antenatal checkups, early diagnosis, and competent management of previa.

REFERENCES

1. 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.
2. Ananth CV, Smulian JC, Vintzileos AM. The association of placenta previa with history of cesarean delivery and abortion: a metaanalysis. *Am J Obstet Gynecol* 1997; 177:1071.
3. National Institutes of Health Consensus Development Conference Statement. NIH Consensus Development Conference: Vaginal Birth After Cesarean: New Insights. March 8-10, 2010.
4. Lavery JP. Placenta previa. *Clin Obstet Gynecol* 1990; 33:414.
5. Ananth CV, Demissie K, Smulian JC, Vintzileos AM. Placenta previa in singleton and twin births in the United States, 1989 through 1998: a comparison of risk factor profiles and associated conditions. *Am J Obstet Gynecol* 2003; 188:275.
6. [https://www.worldwidejournals.com/indian-journal-of-applied-research-\(IJAR\)/recent_issues_pdf/2019/November/incidence-of-placenta-previa-in-post-caesarean-pregnancy-and-maternal-outcome_November_2019_1572595873_9801480.pdf](https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/recent_issues_pdf/2019/November/incidence-of-placenta-previa-in-post-caesarean-pregnancy-and-maternal-outcome_November_2019_1572595873_9801480.pdf)
7. Chen X, Gao J, Liu J, et al. Previous mode of delivery affects subsequent pregnancy outcomes: a Chinese birth register study. *Ann Transl Med.* 2021 Jul;9(14):1135.
8. Siddiqui SA, Soomro N, Shabih-ul-Hasnain F. Severe obstetric morbidity and its outcome in patients presenting in a tertiary care hospital of Karachi. *J Pak Med Assoc.* 2012 Mar;62(3):226-31. PMID: 22764453.
9. <https://doi.org/10.18203/2320-1770.ijrcog20203293>
10. M M, A V, Gn G, E N, Ae P, I M. Association of Placenta Previa with a History of Previous Cesarean Deliveries and Indications for a Possible Role of a Genetic Component. *Balkan J Med Genet.* 2017 Dec 29;20(2):5-10.

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