

# Comparison of Fetomaternal Outcome Between Scarred and Unscarred Uterus in Placenta Parevia Cases

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## Abstract

**Objective:** To compare the incidence of placenta parevia, placental position, fetal and maternal outcome in cases of scarred uterus (group A) and unscarred uterus (group B)

**Study design:** It was a comparative cross sectional retrospective study

**Place and duration of study:** This study was conducted in Gynae/Obs Unit-II Holy Family hospital from 1<sup>st</sup> August 2014 to 31<sup>st</sup> July 2015.

**Methodology:** Demographic details, obstetric history like parity and number of previous cesarean section, gestational age, maternal complications like morbidly adherent placenta, post partum hemorrhage, obstetric hysterectomy, number of blood transfusion, need of uterine artery ligation and internal iliac artery ligation, maternal mortality and fetal outcome were compared in both groups.

**Results:** Data was analyzed on SPSS version 16.0. Chi-square test was used to compare different quantitative data variable.

**Conclusion:** Our study concludes that all efforts should be made to reduce the rate of operative deliveries like careful evaluation of indication of caesarean section, ethical clinical practice and counseling of woman for prevention through family planning as there is a greater risk of placenta previa in scarred uterus in subsequent pregnancies.

**Keywords:** Placenta parevia, Postpartum haemorrhage, Endometrium.

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## Introduction

Placenta parevia is an obstetric complication that occurs in the second and third trimester of pregnancy. It may cause serious maternal morbidity or mortality.<sup>1,2</sup> It's a condition in which placenta is inserted partially or wholly in lower uterine segment.<sup>3</sup> it's a leading cause of antepartum haemorrhage. It occurs in 0.3-0.5% of all pregnancies.<sup>4</sup>

The risk increases 1.5-5 folds with a history of cesarean delivery. With an increase number of

deliveries, the risk can be as great as 10%. Exact etiology of placenta parevia is unknown. It is said to be related to abnormal vascularization of the endometrium caused by scarring or atrophy from previous trauma, surgery or infection. These factors may reduce differential growth of lower segment, resulting in less upward shift in placental position as pregnancy advances.<sup>5</sup>

The maternal mortality rate secondary to placenta

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parevia is 0.03% which is either due to haemorrhage or complication of cesarean delivery.<sup>6</sup>

Women at greatest risk of morbidly placenta are those who have myometrial damage caused by previous cesarean delivery with either anterior or posterior placenta overlying the uterine scar. The value of making the diagnosis of placenta parevia before delivery is that it allows for multidisciplinary planning in an attempt to minimize potential maternal or neonatal morbidity or mortality.<sup>7-9</sup>

Diagnosis is established on history, clinical examination and few investigations that include ultrasonography (Trans abdominal and Transvaginal ultrasonography) and MRI.<sup>10</sup>

These women are at increased risk of spontaneous abortion, fetal malpresentation, cesarean delivery, increased loss of blood, peripartum hysterectomy and prolonged hospitalization. It also leads to increased risk of perinatal morbidity and mortality. The frequency of this condition may be increasing so we need to identify and allow optimal management because timing and site of delivery, availability of blood products and recruitment of skilled anesthetist and surgical team can be arranged in advance.<sup>9,11</sup>

We also need to target preventive intervention among women with increased risk of this condition.

## Methodology

**Inclusion criteria:** All patients undergoing cesarean section with placenta parevia at or beyond 28 weeks of gestation with singleton pregnancy were included.

**Exclusion criteria:** Second trimester bleeding and scars other than cesarean section like myomectomy were excluded.

In retrospective study, 109 cases of pregnancy beyond 28 weeks of gestation complicated by placenta parevia were identified. These were divided in two groups Group A included patient with unscarred uterus (n=69), Group B included patients with previously scarred uterus (n=40)

## Results

Total number of deliveries during the study period was 9816. Total LSCS performed during the study period were 3198. LSCS performed for placenta parevia were 109. So over all incidence of placenta parevia was 3.4%

Majority of patients in group A were >35 years of age (17.4% of total) while 18 patients in the other group were between 31-35 years of age (16.5% of total) p

value of 0.009 which is statistically significant. Primipara with placenta parevia were 0 in group B and 13 in group A (p value =.004).

**Table I: Maternal characteristics of the two groups**

Maternal characteristics	Unscarred uterus Group A(n=69)	Scarred uterus Group B (n=40)	P value
<b>Age in years</b>			
<25 yrs	14(20.3%)	0	.009 (S)
25-30 yrs	18(26%)	13(32.5%)	
31-35 yrs	18(26%)	18(45%)	
>35 yrs	19(27.5%)	9(22.5%)	
<b>Parity</b>			
Para 0	13(18.8%)	0	.004 (S)
Para 1-5	48(69.9%)	38(95%)	
Para>5	8(11.6%)	2(5.0%)	
<b>Gestational age</b>			
28-37 weeks	35(50.7%)	20(50%)	.94 (NS)
>37weeks	34(49.3%)	20(50%)	
Previous history of uterine curettage	17(24.6%)	4(10%)	

There was no definitive association of placenta parevia with H/O previous curettage in group B found in our study (p value NS).

Majority of cases in Group B 25(62.5%) cases were of anterior placenta parevia, while in non scarred uterus both anterior and posterior parevia were same in number i.e. 31(44.9%) p value .012(S) (Table II).

18 patients with grade IV parevia were in Group B, while 30 women had grade III parevia in group A (Table II).

**Table II: Comparison of type and grading of parevia**

Type of parevia	Unscarred uterus Group A (n=69)	Scarred uterus Group B (n=40)	P value
<b>Type of parevia</b>			
Anterior	31(44.9%)	25(62.5%)	.012 (S)
Posterior	31(44.9%)	7(17.5%)	
Central	7(10.1%)	8(20%)	
<b>Grading</b>			
I	4(5.8%)	1(2.5%)	.072 (NS)
II	20(29%)	10(25%)	
III	30(43.5%)	11(27.5%)	
IV	15(21.7%)	18(45%)	

Postpartum haemorrhage was statically significant in group B when compared to group A (Table III). Caesarean hysterectomy was done in 57.5% of patients in group B when compared to group A where only 5.8% of patients required hysterectomy which is statically highly significant (Table III).

**Table III: Related Complications**

Complications	Unscarred uterus Group A (n=69)	Scarred uterus Group B (n=40)	P value
Post partum haemorrhage	28(40.6%)	27(67.5%)	.007 (S)
Morbidly adherent placenta	1(1.4%)	22(55%)	.000 HS
Cesarean hysterectomy	4(5.8%)	23(57.5%)	.000 (HS)
C section with uterine a ligation	8(11.6%)	4(10.6%)	.798 (NS)
C section with internal iliac a ligation	2(2.9%)	5(12.5%)	.049 (S)
Maternal mortality	0	1	.187 (NS)

Four patients in group B needed 5 or more blood when compared to group A where no patient required blood transfusion which is statistically highly significant (Table IV).

**Table IV: Number of blood transfusion needed**

	Unscarred uterus Group A(n=69)	Scarred uterus B(n=40)	P value
5 or >than 5 units needed	0	4	0.00(HS)

**Table V: Fetal Outcome**

Fetal outcome	Group A	Group B	P value
Alive	53(76.8%)	28(70%)	.249
Still birth	5(7.2%)	7(17.5%)	
ENND	11(15.9%)	5(12.5%)	

## Discussion

Increasing maternal age is a well known risk factor for placenta parevia. It has been found that women who are 35 years of age or greater are at increased risk of placenta parevia<sup>12</sup> as was found in our study (36 patients were between 31-35 years of age and 20 patients were > 35 years of age.<sup>13,14</sup> This is also consistent with study conducted by Cleminski A. Ageing of musculature of uterus is considered to be associated with increased frequency of placenta parevia in aged and multi parous women. This leads to hypertrophy and enlargement which leads to possibility of extension into the lower part of uterus. This may attribute to scarred and poor vascularization of uterus due to ageing progress.<sup>15</sup>

Our study shows increasing parity is associated with increased risk of placenta parevia (p value is 0.004) which is comparable to Reddy et al.<sup>16,17</sup>

We found 19.2% association of placenta parevia with previous history of curettage which is consistent with Taylor<sup>18</sup> et al study who also found that women with one or more spontaneous miscarriage or induced miscarriage are 30% more likely to have placenta parevia in subsequent pregnancies.

Incidence of morbidly adherent placenta parevia is greater in patients with prior cesarean section. In our study 55% of patients in Group B were with morbidly adherent placenta which is in accordance with the study of Clark et al.<sup>19</sup>

In our study incidence of postpartum haemorrhage was significantly higher in Group B when compared to Group A which is in accordance to Zallop et al, who found morbidly adherent placenta is associated with massive postpartum haemorrhage and has become one of the most common indication for peripartum hysterectomy<sup>20, 21</sup> as was also evident from our study where peripartum hysterectomy was performed in 57.5% of cases in Group B when compared to 5.8% cases in Group A( p value 0.000 which is statistically highly significant)

We found 62.5% of cases have anterior placenta parevia in Group A when compared to 44.9% of same in Group B( p value 0.12 S). Increased incidence of anterior placenta parevia in cases with prior cesarean sections is more dangerous as it may lead to serious maternal morbidity such as excessive bleeding, Massive transfusion placenta accreta and hysterectomy.<sup>22</sup> 10% of patients in Group B needed massive blood transfusion where as no patient in Group A needed massive transfusion ( p value is 0.000 HS). Same finding was also observed by CC Umezurike et al.<sup>23</sup>

The average number of blood required for transfusion in case of placenta accreta is put at 6.6 units with some cases requiring over 20 units of blood. This massive transfusion classically illustrates the high demand this condition may have on the meager health resources of developing countries where homologous blood is not available due to difficulties in recruiting and screening donors and in the collection and storage of blood.

## Conclusion

Our study concludes that all efforts should be made to reduce the rate of operative deliveries like careful evaluation of indication of caesarean section, ethical clinical practice and counseling of woman for

prevention through family planning as there is a greater risk of placenta previa in scarred uterus in subsequent pregnancies.

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