



COMPARATIVE STUDY OF OBSTETRICS OUTCOME IN CASES OF PLACENTA PREVIA WITH AND WITHOUT SCARRED UTERUS

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ABSTRACT

Objective: To compare the incidence of placenta previa, associated factors, complications, placental position, mode of delivery and fetal and maternal outcome in scarred (Group A) and unscarred uterus (Group B) in 12 months of hospital based study.

Material and methods: In a one year prospective study, 86 cases of pregnancies beyond 28 weeks of gestation complicated by placenta previa were identified. These cases were divided into two groups, scarred uterus (Group A), 48 cases and unscarred uterus (Group B), 38 cases.

Results: The incidence of placenta previa in scarred cases is significantly higher than overall incidence. Majority of scarred cases had anterior placenta. The number of unbooked cases was high in both the groups. There was one mortality each in both the groups. Results showed a favourable fetal outcome.

Conclusion: An increase in the incidence of prior caesarean section and advanced maternal age probably contribute to a rise in the number of pregnancies complicated with placenta previa and its association with adverse maternal and perinatal outcome.

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INTRODUCTION

Placenta previa is an obstetric complication in which the placenta is inserted partially or wholly in lower uterine segment.¹ It can sometimes occur in later part of first trimester, but usually occurs during the second or third. It is leading cause of antepartum haemorrhage. It affects approximately 0.4-0.5% of all labours.² It is hypothesized 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.³ Traditionally, placenta previa has been classified according to the degree to which the placenta encroaches upon the cervix in labour, but in recent times, due to easy availability of ultrasound, types and grades of placenta previa have been defined. Colour Doppler and MRI have been used in patients with placenta previa especially to diagnose adherent placenta. Factors like advanced maternal age, previous placenta previa, multiparity, multiple gestation, previous abortion and curettage and smoking during pregnancy have also been associated with placenta previa.^{4,5} The aim of this study was to examine the risk factors and outcomes in placenta previa in previously scarred uterus and compare them to placenta previa in unscarred uterus.

METHODS

This prospective study was conducted in the department of Obstetrics and Gynaecology, Govt. Medical College Patiala. Cases of placenta previa from Feb 2016 to Jan 2017 were studied.

Women over 28 weeks of gestation with all types of placenta previa were identified. They were divided into two groups. Group A In which placenta previa occurred in previously scarred uterus and Group B in which placenta previa in an these patients. Risk factors in terms of maternal age, parity, gestational age, previous placenta previa, multiple pregnancies, previous curettage and previous uterine surgery were compared.

Chi square test was used to compare quantitative data and $p < 0.05$ was determined to be statistically significant.

Data Tabulation

Total number of deliveries =3784

Total number of scarred cases=1525

Total number of unscarred cases=2259

Total number of placenta previa = 86

Total number of placenta previa in scarred uteri = 48

Total number of placenta previa in unscarred uteri = 38

Incidence in scarred uteri=3.14%

Incidence in unscarred uteri= 1.62%

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Observations

Table 1 Comparison According To Age

Age (in years)	Group A (Scarred Uterus)		Group B (Unscarred Uterus)	
	No. of Subjects	%age	No. of Subjects	%age
≤ 25	15	31.25	23	60.53
>25-30	24	50	10	26.32
>30-35	6	12.5	4	10.53
>35	3	6.25	1	2.62
Total	48	100	38	100

Both booked and unbooked cases were included. Placental localization was achieved by transabdominal ultrasounds in

Table 2 Comparison According To Gravidity

Gravidity	Group A (Scarred Uterus)		Group B (Unscarred Uterus)	
	No. of Subjects	%age	No. of Subjects	%age
1	0	0	11	28.96
2	24	50	8	21.05
3	11	22.91	10	26.31
≥ 4	6	12.5	9	23.68
H/O curettage	7	14.59	0	0
Total	48	100	38	100
Chi-square			25.834	
p-value			<0.001	
Sig.			HS	

There were no primigravida in group A and 28.96% in group B, which is statistically highly significant. A definite association of placenta previa following curettage was observed.

Table 3 Comparison According To Type of Placenta Previa

Type of placenta Previa	Group A (Scarred Uterus)		Group B (Unscarred Uterus)	
	No. of Subjects	%age	No. of Subjects	%age
Anterior	39	81.25	13	34.21
Posterior	9	18.75	25	65.79
Total	48	100	38	100
Chi-square			19.632	
p-value			<0.001	
Sig.			HS	

In Group A (scarred uterus) majority of subjects (81.25%) had anterior placenta previa while in Group B (Unscarred uterus) majority (65.79%) had posterior placenta previa,

Table 4 Comparison According To Placental Invasion

Placental invasion	Group A (Scarred Uterus)		Group B (Unscarred Uterus)	
	No. of Subjects	%age	No. of Subjects	%age
No Invasion	43	89.59	38	100
Accreta	3	6.25	0	0
Increta	0	0	0	0
Percreta	2	4.16	0	0
Total	48	100	38	100
Chi-square			4.203	
p-value			0.122, NS	

The above table shows that placental invasion was present in 10.41% cases in group A (Scarred Uterus) only i.e. placenta accreta in 6.25% and percreta in 4.16% as compared to group B (Unscarred uterus) in which incidence of adherent placenta was 0%. Placenta accreta was diagnosed in the subjects by colour doppler during antenatal period.

The difference was not significant statistically, however incidence of invasive placenta is definitely higher in scarred uterus as compared to unscarred uterus in our study.

Table 5 Comparison According To Complications

Intraoperative/ Postoperative complication	Group A (Scarred Uterus)		Group B (Unscarred Uterus)	
	No. of Subjects	%age	No. of Subjects	%age
	No. (%)	No. (%)	No. (%)	No. (%)
Placenta accreta	3	6.25	0	0
Placenta percreta	2	4.66	0	0
Haemorrhagic shock	4	8.33	2	5.26
Bladder trauma	2	4.66	0	0
Maternal mortality	1	2.08	1	2.63
Post Partum Haemorrhage	18	37.5	10	26.31
Chi-square			3.830	
p-value			0.574	
Sig.			NS	

There were several intraoperative/ postoperative morbidities in subjects which were significantly more in the group A as compared to group B.

Group A (Scarred Uterus) had 6.25% of subjects with placenta accreta, 4.66% percreta, 8.33% had haemorrhagic shock, 2.63% complicated by bladder trauma and PPH occurred in 37.5%. While in Group B (Unscarred Uterus) haemorrhagic shock was 5.26% and PPH 26.31%.

There was one maternal death in each group due to haemorrhagic shock.

The difference was non significant statistically.

Table 6 Comparison According To Management of Complications

Management of Complications	Group A (Scarred Uterus)		Group B (Unscarred Uterus)	
	No. of Subjects	%age	No. of Subjects	%age
	No. (%)	No. (%)	No. (%)	No. (%)
Uterine Packing	1	2.08	0	0
Ballon Tamponade	3	6.25	2	5.26
Uterine artery Ligation	2	4.16	1	2.63
Internal Iliac Ligation	0	0	0	0
Caesarean Hysterectomy	5	10.41	1	2.63
Chi-square			3.830	
p-value			0.574	
Sig.			NS	

As shown above in Group A - PPH was controlled by uterotonics alone in 16.66% of cases, ballon tamponade 6.25% and uterine artery ligation 4.16% and caesarean hysterectomy done in 10.41% cases, while in Group B PPH was controlled by uterotonics alone in 13.15%, 20% ballon tamponade and uterine artery ligation done in 2.63% of cases and caesarean hysterectomy done in 2.63% case only.

Requirement of Blood transfusion was in 70% of cases in Group A and 47.36% in group B. Operative procedures for control of PPH are significantly more in the group A than the group B.

Table 7 Comparison According To the Period of Gestation At Termination

POG	Group A (Scarred Uterus)		Group B (Unscarred Uterus)	
	No. of Subjects	%age	No. of Subjects	%age
<37 weeks	28	58.33	20	52.63
>37 weeks	20	41.67	18	47.37
Total	48	100	38	100
Chi-square		1.942		
p-value		0.584		
Sig.		NS		

Above table depicts 58.33% delivered at <37 weeks period

Table 8 Comparison According To Perinatal Outcome

Perinatal outcome	Group A (Scarred Uterus)		Group B (Unscarred Uterus)	
	No. of Subjects	%age	No. of Subjects	%age
Alive births	45	93.75	36	94.74
Still births	3	6.25	2	5.26
Total	48	100	38	100
Neonatal deaths	4	8.88	3	8.82
Chi-square		0.042		
p-value		0.979		
Sig.		NS		

Majority were live babies in both groups. There were 4 neonatal deaths in group A and 3 in group B which were mainly due to complications related to prematurity. Difference was not statistically significant.

DISCUSSION

Present study depicts Incidence of placenta previa in scarred uterus is 3.14% as compared to 1.68% in unscarred uterus which is higher than found in various other studies. The higher incidence is because ours is a tertiary care referral centre which caters to large no. of referral cases from civil hospitals of Punjab and adjacent states.

Mathuria *et al*⁽⁵⁾ (2013) showed 1.2% and 0.47% in group A and B respectively. A slightly higher incidence is found in study by Ahmad *et al*⁽⁴⁾ (2015) (2.2%). Katke⁽⁶⁾ (2016) shows 1.33% in Group A and 0.47% in Group B. The mean age was 27.40 years in group A and 25.82 years in Group B. Like our study the other authors also had comparable age in both the groups. Present study is particularly comparable with the study of Mathuria *et al*⁽⁵⁾ (2013) and Hung *et al*⁽¹⁷⁾ (2007). Our study shows 85.41 % and 71.04 % of the women were multigravida in Group A and Group B respectively. The present study is comparable to Katke⁽⁶⁾ (2016) in the way that multigravida exceed primigravida in both the groups. Present study shows the risk of placenta previa increases with increased parity in both scarred as well as unscarred uterus In present study there was 10.41% incidence of morbid adherent placenta among Group A women as compared to 0% in unscarred (Group B) women, which was consistent with Parikh *et al*⁽⁷⁾ (2016) (10%). Ahmad *et al*⁽⁴⁾ (2015) reported very high incidence of 26.4% in their study. Mathuria *et al* [5] (2013) reported 5.8% incidence of adherent placenta in scarred uterus while Katke⁽⁶⁾ (2016) had incidence of 6.7% in scarred uterus and 2.5% in unscarred uterus. Morkan *et al* [38] (2001) of gestation in group A, while in group B there were 52.63% preterm births.

Significant higher number of cases 81.25% have anterior placenta previa in scarred uterus (Group A) and only 34.21%

have anterior placenta previa in unscarred uterus (Group B). This is comparable to study by Mathuria *et al*⁽⁵⁾ (2013) in which 85.3% had anterior placenta in scarred uterus and 36.8% in unscarred uterus. Jang *et al*⁽¹⁰⁾ (2011) found that anterior previa is more common in patients with prior caesarean sections.

In the present study main complication was post partum haemorrhage 37.5% and its surgical treatment like bilateral uterine artery ligation, compression sutures, caesarean hysterectomy and bladder repair were more in Group A. Blood transfusion was given in 70.8% cases. Mathuria *et al*⁽⁵⁾ (2013) had 47.05% PPH, Adherent placenta 5.8%, caesarean hysterectomy in 8.8%, fetal malpresentation 11% and blood transfusion 85% Knight *et al*⁽¹²⁾ (2007) concluded that requirement of blood and component transfusions is significantly higher in patients with morbidly adherent placenta previa. Wong *et al*⁽⁷⁾ (2011) parkland hospital also found that placenta previa with morbid adherent placenta is the most frequent indication for peripartum hysterectomy.

In present study prematurity is 58.33% in group A and 52.63% in group B which is consistent with study by Mathuria *et al*⁽⁵⁾ (2013) (58% in scarred uterus and 47% in unscarred uterus). Majority were alive births in both the groups in all studies. Fetal complications in terms of still births and neonatal deaths are comparable in both groups.

CONCLUSION

Incidence of placenta previa in scarred uterus is significantly higher than unscarred uterus. Primary prevention in the form of reduction in the rate of primary caesarean section must be done in order to prevent likelihood of placenta previa .Risk of morbidly adherent placenta appears to be raised in women with placenta previa and scarred uterus. Hence there is a need to maintain high index of suspicion of abnormal placentation in such women and preparation for delivery should be made accordingly.

The family planning services should be further improved to attain a decline in the number of women of high parity. High risk pregnancies should be identified during antenatal period. Early diagnosis by ultrasound and planned delivery should be the goal. This calls for educating our patients and making them aware of the importance of antenatal care. The emphasis should be on institutional delivery in a tertiary care centre with multidisciplinary approach i.e. involvement of senior obstetrician, anaesthetist, radiologist, haematologist and neonatologist.

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