

Placenta Previa: A Comparative Study of Obstetrics Outcome in Previously Scarred and Unscarred Uterus at Services Hospital, Lahore

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ABSTRACT

Aim: To compare the incidence of placenta Previa, placental position, maternal and fetal outcome in scarred [group A] and unscarred uterus [Group B] in one year of study at Services Hospital.

Methods: In this cohort study, 57 pregnant women beyond 28 weeks of gestation complicated by placenta Previa were identified. These cases were divided into two groups, scarred uterus [Group A, n=35] and unscarred uterus [Group B, n=22]. Total 4340 deliveries occurred, out of which 1890 had caesarean section and 57 patients had placenta Previa.

Results: The frequency of placenta Previa was significantly higher in scarred cases as compared to overall incidence. Majority of the scarred cases had anterior placenta [74.4%] and majority of unscarred uterus had posterior placenta [25.7%]. A significant association of placenta Previa following curettage in Group B were observed. There was only one maternal mortality in Group A and none in Group B.

Conclusions: The risk of placenta Previa increases with increase in number of previous cesarean section and advanced maternal age.

Keywords: Placenta previa, uterus, scarred and unscarred

INTRODUCTION

Placenta previa is one of the most common obstetrical complication faced by obstetricians. In this condition, placenta is inserted completely or partially in the lower uterine segment of uterus.¹ It usually occurs during 2nd and 3rd trimester of pregnancy.¹ It is one of the most important factor causing serious complications and mortality in the mother². Antepartum hemorrhage also occurs due to placenta previa, which is on the rise because of increase in previous cesarean sections and found in 0.4-0.5% of pregnancies³.

If placenta abnormally attaches near to internal cervical os, it relates to the abnormal vascularization of endometrium. It is caused by scarring or atrophy due to previous cesarean, trauma or infection. These factors cause reduced growth of lower segment of uterus which result in reduced upward placental migration as pregnancy advances⁴. Placenta previa and its related complications are life threatening, and need multidisciplinary approach for treatment⁵.

Diagnosis is by history which reveals an antepartum haemorrhage. Generally, examination of abdomen shows non tender, soft & relaxed uterus. Leopold's maneuvers if applied, may find the fetus in malpresentation like breech, oblique or transverse due to the presence of placenta in the lower uterine segment and reported in nearly 35% cases. It typically presents as painless bright red vaginal bleeding thought to occur because of growth of lower segment of uterus as pregnancy advances. This usually occurs in 32 weeks, but may also occur after 20 weeks. If female present with bleeding after 24 weeks, she must be evaluated for placenta previa. This placental attachment is disrupted as the uterine lining becomes thin for preparation of onset of labour. Diagnosis is established by ultrasound

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and supplemented by magnetic resonance imaging.^{6,7} Transvaginal ultrasound is more accurate for measuring the distance between the placenta and cervical os as compared to transabdominal ultrasound. The main classification of degrees of placenta previa is low lying marginal, partial & complete⁸.

Several risk factors are identified like advanced age, multiparity, multiple gestation, previous abortion, previous caesarean section & placenta previa in prior pregnancy.⁹ Damage to myometrium after dilatation & curettage is also one of the main risk factors.¹⁰ Other risk factors include teenage females or females of age >35 years, smoking, cocaine and alcohol use. 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 pregnancies¹¹.

Prior cesarean delivery increases the incidence of placenta previa from 1.9%, with two prior cesareans to 4.1% with three or more according to a study by Serojini et al., significant obstetrical complications like raised frequency of fetal mal-presentation, cesarean sections, more blood loss, peri-partum hysterectomy were noted and cause prolonged hospital stay in such cases. Preterm births also occur which cause high rate of neonatal intensive care unit admission and stillbirths¹².

Accurate discovery of placenta previa in the antenatal period is important as it helps in the management of patients on time and plan the mode of delivery and ensuring the availability of senior obstetrician and expert anaesthetist. Adequate arrangement of blood products is also necessary before delivery of such cases as antepartum and postpartum hemorrhage is common^{13,14,15}.

This study was conducted to determine the incidence of placenta previa and its complications in patients with

scarred and unscarred uterus coming to a tertiary care hospital.

MATERIALS & METHODS

This cohort study was conducted at Department of Obstetrics &Gynecology, Services hospital, Lahore during July 2015 to June 2016. All types of placenta previa were included. Subjects were enrolled and divided into two groups, Group A with scarred uterus and Group B with unscarred uterus. All patients had an abdominal ultrasound done for obstetrical reason and for exact location of the placenta. A total number of 4340 deliveries, 1890 had caesarean section,57 had placenta previa with an incidence of 43.5% in present study.809 were women with scarred uterus in whom 35 had placenta previa. Amongst the rest 1081, 22 had placenta previa.

Females aged 19-40 years, patients with placenta previa were identified and patients with history of abortions, primigravidas, singleton and multiple pregnancies of gestational age of 28 weeks onwards were included. Patients with second trimester bleeding were not included.

Informed consent and detailed history were taken. The association of placenta previa with fetal malpresentation, postpartum haemorrhage and maternal fetal outcome were also evaluated in both groups and compared. All data was gathered in performa. Data was analyzed in SPSS version 16.

RESULTS

Maternal characteristics of the two groups are given in table 1. Majority of the patients in this group were between age range of 31-35 years in Group A [51%] and > more than 36 years in Group B [31%]. Primipara with placenta previa were 0 in Group A and 5 in Group B [22.7%]. A definite association of previa with curettage was observed, Group A [20%] and Group B [59%]

Table 1: Maternal characteristics

	Group A	Group B
Age 20-25 years	4(11.4%)	5(22.7%)
Age 26-30 years	7(20%)	4(18%)
Age 31-35 years	18(51%)	6(27%)
Age >36 years	6(17%)	7(31%)
Parity		
0	0	5(22.7%)
1	5(14%)	2(9%)
2	7(20%)	5(22.7%)
3	15(42.8%)	6(27%)
4	6(17%)	4(18%)
Gestational age (weeks)		
<37	20(57%)	7(31%)
>37	15(42%)	15(68%)
History of curettage	7(20%)	13(59%)
No. of previous Cesarean Sections		
Previous 1	7(20%)	
2	11(31%)	
3	12(34%)	
4	4(11.4%)	
5	1(14%)	

Table 2 showed majority were grade IV placenta previa in scarred Group A [42%] and in Group B majority were grade 1, [45.4%] Anterior previa was maximum in scarred Group A [74.4%] and posterior previa was more in unscarred Group B [63%] The frequency of placenta previa increased with number of caesarean section and maximum in previous three CS.

Table 3 compares the related complications between the two groups. There was one maternal mortality. In Group A and none in Group B. Seven patients underwent caesarean hysterectomy in Group A [20%] and one patient underwent hysterectomy in Group B [4.5%]. Seven patients were diagnosed as having placenta accreta in Group A [20%] and one patient had accreta in Group B [4.5%]. Two patients were diagnosed to have placenta percreta in scarred group.

Table 4 compares the fetal outcome in both groups. More preterm births < 37 weeks occurred in Group A, 12 [34%] and 3 in Group B [13.6%] Perinatal death were 2 in Group A [5.7%] and none in Group B.

Table 2: Relative Frequency

	Group A	Group B
Grading		
I	3(8.5%)	10(45.4%)
II	5(14%)	5(22%)
III	12(34%)	3(13.6%)
IV	15(42%)	4(18%)
Type		
Anterior	26(74.4%)	8(36%)
Posterior	9(25.7%)	14(63.6%)

Table 3: Related Complications

	Group A	Group B
APH	14(40%)	4(18%)
Rate of emergency LSCS	11(31%)	2(9%)
Postpartum hemorrhage	13(37%)	7(31%)
Cesarean section with uterine artery ligation	3(8.5%)	0
Cesarean hysterectomy	7(20%)	1(4.5%)
Placenta accreta	7(20%)	1(4.5%)
Placenta percreta	2(5.7%)	0
Maternal mortality	1(2.8%)	0
Blood transfusion	35(100%)	19(86%)

Table 4: Fetal outcome

	Group A	Group B
Malpresentation	5(14%)	2(9%)
Preterm birth <37weeks	12(34%)	3(13.6%)
Perinatal death	2(5.7%)	0

DISCUSSION

In our study, placenta previa found in 1.31% of all pregnant females that is comparable to study of Hemmadi et al¹⁶ and Reddy et al, 13, which is 0.4% and 0.5% respectively. Rate of placenta previa is higher in patients with scarred uterus [4.3%] than unscarred uterus [0.9%].

Placenta previa is more common among increasing age group which is [51%] in age group 31-35 years in scarred cases and [27%] in unscarred cases in age group

31-35 years which is comparable with Reddy et al¹³, who reported 73% incidence in 20-29 years age group and also comparable to Rasmussen¹⁷, who showed increase incidence with increasing maternal age [20-29 years] Our study shows increasing parity increases risk of placenta previa. Para 3 in scarred uterus which is 42.8% and in unscarred cases increased incidence is found in para 3 which is 27%. The results are consistent with Reddy et al¹³, in which 69% were multiparous. In our study we found 59% had placenta previa due to previous history of dilation & curettage after missed abortion, comparable to study of Taylor et al¹⁴, who found that women with one or more spontaneous abortion or induced abortion are 30% more likely to have placenta previa in next pregnancy. Frequency of placenta accrete was greater in patients with prior cesarean than in unscarred uterus. In our study accreta was found in 20% in scarred uterus and 4.5% in unscarred uterus. Placenta percreta was found in 5.7% in scarred and 0 in unscarred uterus, which is consistent with Clark et al¹⁵, who concluded that frequency of placenta accreta is greater in patients with prior cesarean section. In evaluation of the related complications, we found that women with placenta previa were more likely to have postpartum hemorrhage, cesarean hysterectomy as diminished muscle content in the lower uterine segment causes less effective contraction to control bleeding. Anterior previa was more frequent in females with scarred uterus (previous cesarean section) as compared to unscarred uterus, 74.4% in scarred uterus as compared to 36% in unscarred uterus. Anterior previa associated with more maternal morbidity with more blood transfusion requirement, adherent placenta like accreta or percreta and more chances of hysterectomy. Table 4 shows prematurity due to placenta previa accounts for 60% of the perinatal morbidity¹³. In our study 50% cases delivered premature babies. Table 2 shows the relative frequency of major previa of 42% in scarred uterus and 18% in unscarred uterus. Minor previa is 8.5% in scarred and 45.4% in unscarred uterus.

In our study the cesarean section rate is high 43.5%, which is comparable to average global rate of cesarean section i.e. 18.6% (ranged 6% in least developed region while 27.2% in developed regions). The lowest rates of cesarean section are reported in Africa [7.3%], Asia [19.2%] while highest in Latin America & Caribbean [40.5%] and in South America [42.9%]¹⁸.

CONCLUSION

This study concluded that risk of placenta previa increases with prior cesarean deliveries and chances of previa increases in scarred uterus in succeeding pregnancies as compared to unscarred uterus so every effort must be done to decrease the number of cesarean deliveries in the first place. Sonographic detection of anterior placenta and Doppler ultrasound should be carried out to rule out placenta accreta so that the obstetricians can be aware of the massive maternal hemorrhage and to reduce the morbidity associated with placenta previa. The patients should be educated and should be made aware of the

importance of antenatal care and the diagnosis of placenta previa should be made on ultrasound in antenatal period for better management of the patient.

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