Original Article

Placenta Previa

Placenta Previa; Risks and Morbidity

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ABSTRACT

Objective: To evaluate and determine the risk factors and outcome of placenta previa in patients undergoing cesarean section at Islam Teaching Hospital. Sialkot.

Study Design: Case control, Observational and comparative study

Place and Duration of Study: This study was carried out at the Department of Obstetrics and Gynaecology, Islam Teaching Hospital, Islam Medical College, Sialkot from September 2010 to December 2014.

Materials and Methods: Our study included all the patients who underwent caesarean section for singleton pregnancy after 28 weeks of gestation during the study period, data was collected and analyzed retrospectively for determining risk factors and patients were followed prospectively to see the morbidity and outcome of cesarean section in patients with placenta previa labeled as Group I and patients without placenta previa labeled as Group II. The patients who had normal vaginal delivery were not included in the study. Data was recorded using SPSS version 20 and frequencies were calculated. Statistical analysis and significance was done using OpenEpi calculators. P value was calculated using two by two table and relevant Fischer and mid-P extract tests. P value <0.05 was used to show significant difference.

Results: During the specified period 46 patients were those whose pregnancy was complicated by placenta previa while 734 patients who underwent cesarean section were not having antenatal or peroperative evidence of placenta previa. The maternal age >35years was present in 27 patients in group 1 and 234 patients in group11 so placenta previa is associated with age greater than 35 years (OR 3.036, 95%CI 1.655-5.572, P value 0.0001700)

The multivariate retrospective analysis showed that independent factors of prior LSCS (OR 2.33, 95% CI 1.272-4.271, P value 0.003940) previous history of D&C (OR 2.341, 95% CI 1.029 -4.936, P value 0.02163) and malpresentation (OR 4.142, 95% CI 1.852-8.725, P value 0.0005307) were associated with placenta previa.

Placenta previa was associated with adverse maternal outcome. In our study postpartum haemorrhage occurred in 20 patients of group I as compared to group II (43.47% vs 5.3%, P value <0.05). But massive blood transfusion (transfusion of more than 4 units of blood) was required in 8 patients in group 1 as compared to 22 patients in group II (17.4% vs 3.0%, P value <0.05). Cesarean Hysterectomy was done in 4 patients in group I and no caesarean hysterectomy was required in group II (8.6% vs 0.00%, P value <0.005). In 3 patients, indication of hysterectomy was placenta accreta with previous history of cesarean section. In one patient there was fibroid uterus along with placenta previa; so fibroid uterus was a confounding factor in our study so that cesarean hysterectomy percentage is somewhat more in our study. In all 3 cases of placenta accreta, there was history of previous cesarean section so that there is 15% chance of placenta accreta in patients with previous history cesarean section along with placenta previa. The placenta previa was also associated with adverse fetal outcome as perinatal mortality (17.4% vs 2.9%, P value <0.05), low APGAR score at 5 min (19.6% vs 7.1%, P value <0.05) congenital anomalies (10.8% vs 4.1%, P value <0.05) was high in group I patients. Placenta previa was not associated with intrauterine growth restriction (4.3%vs 2.6%, P value 0.2379).

Conclusions: Advanced maternal age, previous caesarean section, previous history of D&C and malpresentation are associated with increased risk of placenta previa. Placenta previa is definitely associated with adverse maternal as well as neonatal outcomes. The obstetrician should be vigilant in antenatal as well as peripartum care of such patients in order to manage the associated complications and to decrease maternal and fetal morbidity and mortality.

Key Words: Placenta previa, placenta accreta, caesarean section, caesarean hysterectomy, lower segment caesarean section.

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INTRODUCTION

Placenta praevia is an obstetrical problem with known adverse consequences including high perinatal mortality rate as 12.6 to 21.3%, low APGAR score, congenital anomalies, prematurity and maternal morbidity. It is a common cause of antepartum haemorrhage which is 3-4%. Placenta praevia occurs in 0.8% of all pregnancies and is one cause for 22% cases of all antenatal haemorrhage[1].

Placenta praevia means that the placenta is situated completely or in part in the lower uterine segment at or

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after 28 weeks of gestation. Before 28 weeks, placenta may be situated in or close to the developing lower segment and is labeled as low lying. Most of the low-lying placentae are unlikely to become the placenta praevia[2].

Classification depending upon the level is important and decisive in the management and the mode of delivery in patients having placenta praevia[3]. Placenta praevia is diagnosed by trans-vaginal sonography according to classification as follows: Type-I: The edge of placenta just encroaches on lower uterine segment. Type-II: Placenta reaches the margin of the cervical os. Type-III: Partial placenta, covers the internal os partially. Type-IV: Total placenta completely covers the internal os.

The clinical course of placenta previa is highly suggestive, but the etiology of this condition still remains unclear[4]. The strongest relation was found with previous history of c-section, high parity, advanced maternal age history of previous spontaneous or induced miscarriage previous placenta previa, child sex at birth (more in baby boys). The chances of Placenta previa increase in scarred uterus after previous caesarean section and D & C (dilatation and curettage)[5]. Mal-presentations are associated with major degree placenta previa. Maternal mortality can be lessened by performing urgent caesarean section in patients having moderate to heavy vaginal bleeding, but increased perinatal mortality and morbidity are still important problems[6,7]. The introduction of Macafee's expectant management has reduced the perinatal mortality rate, but for this purpose good antenatal care is required and reduction in emergency cases is must. The most important cause of perinatal mortality and morbidity is prematurety[8,9,10].

Placenta previa is a morbid entity for the patient and at the same time; it tests the clinical acumen of obstetricians as well as dependability of obstetric unit. The magnitude of the problem of placenta previa has lead to different multivariate analytical studies worldwide. Same is the condition in our teaching hospital; so the goal of our study was to analyze risk factors in our patients, to see the morbidity associated with placenta previa and to compare the findings with those of international studies.

MATERIALS AND METHODS

It was a hospital based study, all patients who underwent cesarean section for singleton pregnancy after 28 weeks of gestation during study period were included and data was collected and analyzed retrospectively for determining risk factors and patients were followed prospectively to see the morbidity and outcome of cesarean sections in patients with placenta previa labeled as Group I and patients without placenta previa labeled as Group II.

Patients with twin or multiple pregnancies were excluded. The patients who had normal vaginal delivery were not included in the study. Similarly the patients with at least 6 weeks follow up were included in the study and those having no follow up or lost to follow up were excluded from the data.

Data was recorded using SPSS version 20 and frequencies were calculated. Statistical analysis and significance was done using OpenEpi calculators. P value was calculated using two by two table and relevant Mid Extract P& Fischer tests. P value <0.05 was used to show significant difference.

RESULTS

During the specified period 46 patients were those whose pregnancy was complicated by placenta previa while 734 patients who went LSCS were not having antenatal or peroperative evidence of placenta previa.

The maternal age >35years was present in 27 patients in group 1 and 234 patients in group11 so placenta previa is associated with age greater than 35 years (OR 3.036, 95%CI 1.655-5.572, P value 0.0001700)

The multivariate retrospective analysis showed that independent factors of prior LSCS (OR 2.33, 95% CI 1.272-4.271, P value 0.003940) previous history of D&C (OR 2.341, 95% CI 1.029 -4.936, P value 0.02163) and malpresentation (OR 4.142, 95% CI 1.852-8.725, P value 0.0005307) were associated with placenta previa..

Statistical data in general for the two groups is shown in Table 1.

Table No.1 General Data

	Group I CASES	Group II CONTROL
Total no (n)	46(100%)	734(100%)
Age>35years	27(58.69%)	234(31.88%)
History of previous LSCS	20(43.47%)	182(24.79%)
History of previous D&C	9(19.56%)	80(10.89%)

Details of group I frequencies are given in Table 2.

Table No.2: Group I frequencies

Group I – Cases n= 46		
Age	19-45 years mean 36.37 (SD 7.7)	
History of previous LSCS (n=20)	0	26 (56.5%)
	1	7 (15.2%)
	2	10 (21.7%)
	3	2 (4.3%)
	>3	1 (2.2%)
History of previous D&C	9 (19.6%)	
Malpresentations (other than cephalic)	10 (21.7%)	

Details of group I frequencies are given in Table 3

Table No.3: Frequencies

Group I1 – Control n= 734		
Age	18-41 years mean 29.24 (SD 7.246)	
History of previous LSCS(n=182)	0	552 (75.2%)
	1	62 (8.4%)
	2	85 (11.6%)
	3	25 (3.4%)
	>3	10 (1.4%)
History of previous D&C	69 (9.4%)	
Malpresentations (other than cephalic)	46 (6.3%)	

Table 4 shows maternal outcome.

Table No.4: Maternal Outcome

	Group I – Cases n= 46	Group I1 – Control n= 734
Caesarean Hysterectomy	4 (8.7%)	0
Postpartum Haemorrhage	20 (43.47%)	39 (5.3%)
Massive Blood Transfusion	8 (17.4%)	22 (3.0%)

Table V shows fetal outcome.

Table No.5: Fetal Outcome

	Group I Cases n= 46	Group I1 Control n= 734
Perinatal mortality	7 (15.2%)	21(2.9%)
APGAR score <7 at 5 mins	9 (19.6%)	52 (7.1%)
Congenital anomalies	5 (10.8%)	30 (4.1%)
Intra uterine growth restriction	2 (4.3%)	19 (2.6%)

Placenta previa was associated with adverse maternal outcome. In our study postpartum hemorrhage occur in 20 patients of group I as compared to group II (43.47% vs 5.3%, P value <0.05). But massive blood transfusion (transfusion of more than 4 units of blood) was required in 8 patients in group 1 as compared to 22 patients in group 11 (17.4% vs 3.0%, P value <0.05). Caesarean Hysterectomy was done in 4 patients in group I and no caesarean hysterectomy was required in group II (8.6% vs 0.00%, P value <0.005). In all 3 cases of placenta accrete, there was history of previous cesarean section along with placenta previa so that there is 15% chance of placenta accreta in patients with previous history cesarean section along with placenta previa. The placenta previa was also associated with adverse fetal outcome as perinatal mortality (15.2% vs 2.9%, P value <0.05), low APGAR score at 5 min (19.6% vs 7.1%, P value <0.05) congenital anamolies (10.8% vs 4.1%, P value <0.05) was high in group I patients. Placenta previa was not associated with intrauterine growth restriction (4.3%vs 2.6%, P value 0.2379).

DISCUSSION

In obstetric practice, placenta previa is associated with high maternal and fetal morbidity. So it is one cause of stress for both mother and the treating physician

1n our study the placenta previa is associated with maternal age >35years. This is comparable as in the study of Jun Zhang and David A[11] and the study of Tai-Ho Hung[12].

Previous reports by Tuzovic L[13], Jhonson LG[14] and Tai-Ho Hung[12] have identified more frequent history of evacuation of uterus of retained product of conception in women with placenta previa. This was 19.6% in our study.

In our study other identified risk factors for placenta previa are previous history of cesarean section and malpresentation.

As compared to the control, the odds of having a placenta previa are 2.33 times in prior cesarean section. This is comparable to the study of Ayesha Shaukat[15] and the study of E.Sheiner[16] in which OR is 1.8

In our study there is 15% chance of placenta accreta in patients of placenta previa with uterine scar, in other studies it is up to 25%. So if placenta previa is associated with history of previous uterine scar, then we should be more vigilant because in these cases there are more chances of placenta accreta, so these patients should be prepared thoroughly and counseled properly about the risk of hysterectomy and other associated morbidity. Senior obstetrician, surgeon, hematologist, pediatrician and anesthetist should be informed before scheduling these elective cases so that better outcome can be achieved by multidisciplinary effort.

In E.Sheiner[16] study placenta previa is associated with malpresentation (OR 7.6% 95% CI5,7-10.1). This is also confirmed by our study (OR 4.142 95% CI 1.852-8.725)

Our study showed that placenta previa is associated with adverse pregnancy outcome. This is also confirmed by studies of Tom Rosenberg[17], E Sheiner[16], Anneke Kwee[18]. In our study postpartum hemorrhage, massive blood transfusion and cesarean hysterectomy is more in patients with placenta previa. In 3 patients, indication of hysterectomy was placenta previa & accreta with previous history of cesarean section. The study by Dan O[19], also showed that cesarean deliveries especially repeat cesareans in women with placenta previa significantly increase the risk of emergency peripartum hysterectomy. In one patient, there was fibroid uterus along with placenta previa; so fibroid uterus was a confounding factor in our study so that cesarean hysterectomy percentage (8.6%) is somewhat more in our study. In one patient of placenta accreta urinary bladder was also involved (percreta) and surgeon was called for its repair. The hospital stay was prolonged in this patient and massive blood transfusion was required. This is also proved by other studies that such patients are at more risk of morbidity[20].

Our study shows that placenta previa is associated with adverse fetal outcome. In our study Perinatal mortality (15.2%), low APGAR score<5 at 5min (19.6%) and congenital anomalies (10.8%) was high in placenta previa group. In the study of Razia Mehboob[21], PNR was 12.6% and low APGAR score<5 at 5min was 21.3%. This PNMR of 15.2% is also comparable to 17.7% reported from Loto O[22].The perinatal mortality can be decreased by more conservative management in preterm cases of placenta previa and by improving the neonatal care.

CONCLUSION

Advanced maternal age, previous caesarean section, previous history of D&C and malpresentation are associated with increased risk of placenta previa. Placenta previa is definitely linked with adverse maternal as well as neonatal outcomes. The obstetrician should be vigilant in antenatal as well as peripartum care of such patients in order to manage the associated complications and to decrease maternal and fetal morbidity and mortality.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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