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Original Article

Risk Analysis of Placenta Previa in Subsequent Pregnancy with History of Cesarean Section: A Case Control Study in Faridpur Medical College Hospital

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Abstract:

Placenta previa is a life threatening pregnancy complication where placenta partially or completely covers the internal cervical os causing serious adverse consequence for both mother and baby. History of cesarean delivery is an important risk factor for placenta previa. Which have a increased chance of cesarean hysterectomy and bladder injury because of an associated accrete syndrome. The objective of this study is to analyze the outcome of placenta previa with history of cesarean section. This is a prospective study done in Faridpur Medical College Hospital, Bangladesh from 01.01.2013 up to 31.12.14. Total 18 (study group) patients had undergone cesarean delivery with placenta previa and history of previous cesarean section. Among 18 patients maternal age range was 25- 40, parity 1-4, emergency hysterectomy was done in 11, average blood transfusion 2-8 and other morbidity like urinary bladder injury was 4. So we decided to conduct the study to evaluate the frequency of the placenta previa and morbidity related to number of previous cesarean deliveries.

Key words: placenta previa, cesarean section, emergency hysterectomy.

Introduction:

Placenta previa is a potentially severe obstetric complication. Risk factors for placenta previa includes- prior cesarean delivery, pregnancy termination, intrauterine surgery, multiple gestation, increase parity and maternal age etc[1]. The higher incidence of cesarean delivery today is strongly associated with greater frequency of placenta previa from 1/10000 pregnancies in 1950 to 1/200 frequencies now a days[2]. The risk of morbidity adherent placenta, a life threatening condition increases with each previous cesarean birth[3]. nuliparous women with a placenta previa have a 1% - 3% rise in contrast with 2 or more previous deliveries who have placenta previa the risk increases to 30% - 51%[4]. This markedly increases risk for massive hemorrhage at the time of attempted placenta removal and it is the most common indication for emergency hysterectomy. The maternal mortality risk may reach 7% and surgical morbidities including massive blood transfusion, urological injuries, fistula formation and infection[5]. The risk of placenta previa in a pregnancy after a cesarean delivery has been reported to be between 1.5 and 6 times higher than after a vaginal delivery[6]. The aim of the study is to identify the risk factors for placenta previa, organize a strong team and improvise the surgical skills to reduce maternal morbidity and mortality.

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Materials and Methods:

This prospective study was carried out from 01.01.13 till 31.12.14 in Faridpur Medical College Hospital, Bangladesh. Eighteen pregnant women with placenta previa having previous cesarean section were diagnosed both clinically and by ultrasonography. Their selection criteria were: 1.3rd trimester pregnancy, 2. History of one or more cesarean section 3. Detection of placenta previa antenataly or during emergency cesarean section. Those patients who were diagnose antenataly, there anemia were corrected before surgery. The patient and her relatives were informed and counseled regarding the possible complications specially related to placenta previa with history of previous cesarean section. Risk bond were taken. About 3-5 unit of fresh human blood was managed. In all cases two channel were secured by wide bore canula. SAB and general anesthesia were selected according to patient's condition. In most of the cases incision was given in lower segment of uterus. But in some cases incision was given a little bit higher level above the attachment of placenta. In two cases classical

vertical incision were made. After delivery of baby and placenta where bleeding was massive and uncontrolled a quick decision was taken to do perform hysterectomy. In those case where uterus seems to conserve, proper haemostasis were done by various conservative methods like B-Lynch suture, various type of compression suture, bilateral uterine and ovarian artery ligation, condom catheter. In some cases there was injury to urinary bladder which was repaired by the help of general surgery team. The women were analyzed as age, parity, gestational age, type of PP, surgical outcome, blood transfusion, urinary bladder injury and fetal outcome.

Result:

Total 18 (eighteen) patients had selected for cesarean section due to placenta previa with history of previous cesarean section. Most of the patient was in between 31-35 year age (Table-1). Incidence is higher with increasing parity. Most of the baby was premature delivered between 34-37 weeks and need special neonatal care (88.8%)

Table I: Age, Parity and Gestational age (n=18) in study group.

Variable Age	Number (%)
25-30	5 (27.77%)
31-35	8 (44.48%)
36-40	5 (27.77%)
Gravid	
2nd	5 (27.77%)
3rd	7 (38.85%)
4th and above	6 (33.3%)
Gestational age	
30-34 weeks	3 (16.68%)
34-37 weeks	13 (72.28%)
>37 weeks	2 (11.12%)

Table II: Type of Placenta Previa

Variables	Percent(%)
Type I	1 (5.56%)
Type II (anterior)	3 (16.68%)
Type II (posterior)	1 (5.56%)
Type III	5 (27.77%)
Type IV	8 (44.48%)

Most of the previous cesarean section presents with Type III and central Placenta Previa.

Table III: Outlines the frequencies of placenta previa by previous cesarean section

Number of cesarean section	Patients number	Percent
1	6	6 (33.3%)
2	10	10 (55.6%)
3	2	2 (11.12%)

Result shows that increase number of cesarean section increase the incidence of placenta previa. here 55.6% patients have history of previous 2 cesarean section.

Table IV: Outlines of hysterectomy based on number of cesarean section and type of Placenta Previa

Number of cesarean section	Number of patients	No of hysterectomy	Percent
1	6	1	16.67%
2	10	8	80%
3	2	2	100%
Type of PP			
Type I	1	0	Nil
Type II (anterior)	3	0	Nil
Type II (posterior)	1	0	Nil
Type III	5	3	60%
Type IV	8	8	100%

80% of history of previous 2 cesarean section and 100% of history of previous 3 cesarean section need hysterectomy. 60-100% of the type III and central Placenta Previa needed hysterectomy.

Table V: Morbidity related to surgery

Complication	Number	Percent
Bladder injury	4	22.24%
VVF	1	5.56%
Infection	2	11.12%

Among 18 patients 22.24% were complicated with bladder injury. 5.56% patients developed VVF and infection happened in 11.12% patients.

Table VI: Blood transfusion

Unit of blood	Number of patient	Percent
1-3	8	44.48%
4-6	7	38.58%
>8		16.68%

44.48% patients needed blood transfusion about 3 unit. But most of the patients needed hysterectomy also needed massive blood transfusion.

Discussion:

The frequency of cesarean section is increasing worldwide with a parallel rise in maternal morbidity and mortality. The higher incidence of cesarean delivery today is strongly associated with greater frequency of placenta previa The incidence of morbidity of adherent placenta has increased dramatically over the last 3 decades with the increased in cesarean delivery rate[7]. This association of placenta previa and previous cesarean section is due to inhibition in placental migration and more chance of morbid adhesion. Sometimes it invades upto urinary bladder causing injury. Repeated cesarean section also cause more chance of bladder injury. In this study it is evident that there is increase association of placenta previa with increase age and parity of mother and proportionally related to number of previous cesarean section. Here among 18 patient 11 (61.16%) patient needed cesarean hysterectomy which is also very significant for per-operative and postoperative detoriation of patient condition. As ICU facilities are not available here we have to transfer some of our critical patients in higher centre. Fortunately none of the patient died among the study group. Another important observation is fetal outcome. 88.8% baby were premature and needed special neonatal care. There was 02 intrauterine fetal death. In our study outline of frequency of placenta previa by previous cesarean section delivery shows 33.3% in H/O 1 cesarean section, 55.6% H/O 2 cesarean section and 11.12% with H/O 3 cesarean section where study of Ayesha S. et al[8]. 74.5% with previous 1, 20.4% with previous 2 and 5% with previous 3 cesarean section. Who found that the risk of placenta previa increase with increasing number of cesarean section and other studies[9].

Conclusion:

The prevalence of placenta previa is low but there is strong association with increasing maternal age, high parity and increase trend of cesarean section. It remains a serious obstetric complication like maternal mortality, morbidity specially increase rate of emergency hysterectomy, massive blood transfusion and also adverse fetal outcome. We have to strengthen our team and improve surgical skill to minimize the complications.

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