

Frequency of Peroperative Morbidity among One versus More Caesarean Section

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ABSTRACT

Aim: To determine the frequency of peroperative morbidity in women with at least previous one caesarean section and compare peroperative morbidity in women with repeated caesarean section versus previous singleton caesarean section.

Methods: This cross-sectional study was carried out at the Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre Karachi, from May 2010 to November, 2010. Patient with the past history of one or more LSCS fulfilling the inclusion criteria were enrolled in the study. Patients were admitted in the ward one day before surgery. Surgeries were performed by researcher herself under supervision of consultant having post fellowship experience of more than 5 years. Outcome of repeat caesarean section was measured in terms of peroperative morbidity of dense adhesions and extremely thinned out lower uterine segment.

Results: A total of 150 patients were enrolled, Out of them 73 patients (48.7%) had history of one caesarean section previously whereas 77 patients(55.3%) had history of repeat caesarean section(>one caesarean section previously).Dense adhesions were found in 123 (82%) women, of them 55 patients (75.3%) were in single caesarean section group and 68 patients (88.3%) in repeat caesarean section group and result was found to be statistically significant ($p=0.0390$).on the other hand, extremely thinned out lower uterine segment was found in 83 women(55.3%), of them 40 women (54.8%) were in single caesarean section group and 43 women (55.8%) were in repeat caesarean section group , result was not statistically significant.

Conclusion: Prevalence of dense intra abdominal adhesions was higher in women with history of more previous caesarean section than in women with one previous section.

Key words: Caesarean section, dense adhesions, lower uterine segment

INTRODUCTION

Delivery of the baby by an abdominal and uterine incision, known as caesarean section, it is increasingly used for safe delivery, for foetal and maternal reasons either electively or as an emergency¹. There has been a dramatic rise in the caesarean section rate in many countries over the past 50 years. This continuing rise in caesarean section rate is of debatable benefit worldwide, but an alarming high maternal morbidity and mortality associated with operative delivery in developing countries such as Pakistan is a matter of concern.² Caesarean delivery is a major operative procedure which is associated with increased risk to mother and foetus as compared to vaginal delivery. Caesarean delivery is associated with a high complication rate. The most frequent single complication is blood loss and / or transfusion (8.6%) followed by intraoperative complication (8.1%)³. Maternal mortality rate in Pakistan is 281–433/100,000 live births. The leading cause of this high mortality rate is obstetrical blood loss. Any blood loss >1500ml or a fall in Hct >10%

require blood transfusion^{4,5}. Caesarean section has for some time been performed with impunity. About 1/3 of caesarean sections are repeat procedure. Repeat caesarean deliveries are associated with increased morbidity⁶, including blood loss, blood transfusion, abdominal adhesions, extension of the uterine scar, dehiscence of uterine scar, uterine rupture, incidence of caesarean hysterectomy, placenta praevia, bladder and bowel injury and difficulties in delivery of the neonate⁷.

First caesarean section should only be done if genuinely indicated, by some skilled obstetrician in well equipped hospital⁸. After previous caesarean section, women who had not previously given birth vaginally and those who had been induced with prostaglandins were at increased risk of uterine rupture⁹. The rates of asymptomatic uterine rupture in trial of labour and elective repeat caesarean does not differ significantly¹⁰. The major obstetric hazard of repeat caesarean section is the increased risk of uterine scar rupture during pregnancy resulting in high foetal and maternal morbidity and mortality. The rate 2–4% is higher than that reported after one previous caesarean section (<1%)¹¹. In retrospective study of Gul, uterine rupture occurred in 0.47% out of 15,628 deliveries during four years, out of these

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rupture of previously scarred uterus occurred in 82% cases, maternal mortality in this study was 3.33% and foetal mortality was 60%.⁸ High rates of caesarean delivery do not necessarily indicate better perinatal care and can be associated with harm.¹² One of the main indications of caesarean section is repeat caesarean section which has been shown to involve an increased risk of placenta praevia and some other specific complication. The incidence rates of placenta praevia and tightly attached placenta were eight fold in the study group compared with the controls¹³. Indeed, the increased risk of placenta praevia and placenta accrete for pregnancies subsequent to elective primary or repeat caesarean deliveries, are issues of major concerns that are difficult to quantitate.⁷ Multiple caesarean deliveries are associated with more difficult surgery and increased blood loss compared with a second planned caesarean delivery. The risk of major complications increases with caesarean delivery number.¹⁴ In view of these risk factors, it is a common practice in the developed world to offer sterilization to women after the third caesarean section. Women are given the chance of a fourth caesarean section in exceptional circumstances only. However, in countries where large families are encouraged by social and cultural factor, any attempt to limit the caesarean section to two or three is likely to be rejected. This study is favouring high order repeat caesarean section, as the high order (5–9) repeat caesarean section carry no specific additional risk for the mother or the baby when compared with the lower order (3 or 4) repeat caesarean section.¹¹ Thus, no definitive upper limit for the number of caesarean section per individual women can be given.¹³ This study has been designed to find out the type and frequency of peroperative surgical complications with repeat caesarean section and compare the peroperative morbidity in patients having history of one cesarean to those having more than one cesarean sections previously, which may be helpful in identifying the magnitude of the problem so that strategy could be made to improve the patients care.

PATIENTS AND METHODS

This cross-sectional study was carried out at the Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre Karachi, from May 2010 to November, 2010. Patient with the past history of one or more LSCS fulfilling the inclusion criteria were enrolled in the study. All pregnant women (37-40 wks gestation diagnosed on first trimester scan), multigravidae of 18 to 35years, candidate planned for elective repeat caesarean section and had past history of one or more caesarean sections were included in this study whereas women with coagulopathy, primigravidae, polyhydromnias, multiple pregnancies, pregnancy with fibroid, women in labour and first time candidate

of caesarean section were not enrolled in this study. Informed consent was taken from all the women and approval from ethical committee was taken. Patients were admitted in the ward one day before surgery. Surgeries were performed by researcher herself under supervision of consultant having post fellowship experience of more than 5 years. Outcome of repeat caesarean section was measured in terms of peroperative morbidity of dense adhesions and extremely thinned out lower segment. All the data was collected by the researcher on a pre-designed proforma e.g., maternal age, gestational age, parity, number of LSCS performed previously and peroperative morbidity of dense adhesions and extremely thinned out lower uterine segment. A descriptive analysis was done for base line characteristics of the patients. Mean±SD was calculated for maternal age, gestational age and parity. Frequencies and percentages were calculated for preoperative morbidity of dense adhesions and extremely thinned out lower uterine segment. pearson's Chi square test was used to determine the significant association between peroperative morbidity in women with previous one versus more caesarean section. Variables like age, gestational age and number of previous LSCS were controlled by stratification. All data was entered and analyzed through SPSS 17. P-values were two sided and considered as statistically significant ($P<0.05$).

RESULTS

One hundred and fifty women fulfilling the inclusion criteria were selected. On analysis of Mean±SD age, parity and gestational age we observed that the mean age of our study population was 27.4±4.5 years, mean parity was 2.27±1.6 and mean gestational age was 39.9±2.8 weeks. In 73 (48.7%) women there was history of previous one caesarean section and in 77 (51.3%) women previous more than one caesarean section In 123 (82%) women there were dense adhesions. Extremely thinned out lower uterine segment was found in 83 (55.3%) women. On analysis of mean age, parity and gestational age among the women having history of previous one or more caesarean section, the women had history of previous one caesarean section the mean age was 27.34±4.9 years , mean gestational age 40.3±2.5 weeks and mean parity was 1.86±1.8 and the women had history of previous more caesarean section the mean age was 27.44±4.2 years , mean gestational age 39.6±3 weeks and mean parity was 2.65±1.2. On analysis of mean age, parity, gestational age and number of previous LSCS among the women having dense adhesions, the mean age of women having dense adhesions was 27.54±4.57 years, mean parity was 2.36±1.57, mean gestational age was 39.88±2.76 weeks and mean number of previous LSCS were 1.71±0.744. On analysis of mean age,

parity, gestational age and number of previous LSCS among the women having extremely thinned out lower uterine segment we observed that age was 27.83±4 years, mean parity was 2.16±1.2, mean gestational age was 39.95±3.02 weeks and mean number of previous LSCS was 1.65±0.74 (Table 1).

Table 1: Baseline clinical characteristics of patients

Baseline characteristics	No.	%
Previous one caesarean section	73	48.7
Previous more than one caesarean section	77	51.3
Dense adhesions	123	82.0
Extremely thinned out lower uterine segment	83	55.3
	Mean±SD	
Age	27.4±4.52	
Parity	2.3±1.55	
Gestational age	39.9±2.76	
Age who had previous one caesarean section	27.3±4.88	
Age who had repeat caesarean section	27.4±4.18	
Gestational Age who had previous one caesarean section	40.3±2.48	
Gestational age who had repeat caesarean section	39.5±2.97	
Parity who had previous one caesarean section	1.8±1.75	
Parity who had repeat caesarean section	2.6±1.2	
Age who had dense adhesions	27.5±4.5	
Parity who had dense adhesion	2.36±1.57	
Gestation who had dense adhesion	39.88±2.76	
No. of previous LSCS who had dense adhesions	1.71±0.74	
Age who had extremely thinned out lower segment	27.8±4.1	
Parity who had extremely thinned out lower segment	2.16±1.2	
Gestational age who had extremely thinned out lower segment	39.9±3.1	
No. of previous LSCS who had extremely thinned out lower segment	1.65±0.7	

According to analysis of frequency of dense adhesions among the previous one or more caesarean section, out of 73 women having history of one caesarean section the dense adhesions were found in 55(75.3%) women as compared to this out of 77 women having history of previous more caesarean sections the dense adhesions were found in 68 (88.3%) women (p=0.039) (Table 2). On further analysis of frequency of extremely thinned out lower uterine segment among the previous one or more caesarean section we found that out of 73 women having history of one caesarean section the extremely thinned out lower uterine segment was

found in 40(54.8%) women as compared to this out of 77 women having history of previous more caesarean sections the extremely thinned out lower uterine segment were found in 43 (55.8%) women [p=0.897] (Table 3).

Table 2: Comparative analysis of dense adhesions among one and more caesarean section (n = 150)

No. of previous caesarean section	Adhesions		P value
	Yes (n=123)	No (n=27)	
Previous one caesarean section	55 (75.3%)	18 (24.7%)	0.039
Previous more caesarean section	68 (88.3%)	9 (11.7%)	

Table 3: Comparative analysis of extremely thinned out lower uterine segment with caesarean section

No. of previous caesarean section	Extremely thinned out lower uterine segment		P value
	Yes (n=83)	No (n=67)	
Previous one caesarean section	40 (54.8%)	33 (45.2%)	0.897
Previous more caesarean section	43 (55.8%)	34 (44.1%)	

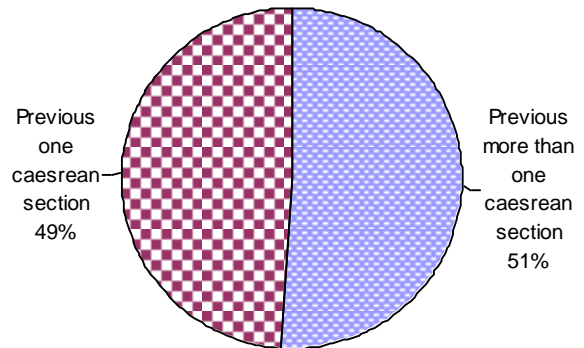


Fig.1: Number of prior caesarean section

DISCUSSION

There has been a dramatic rise in the caesarean section rate in many countries over the past 50 years. This continuing rise in caesarean section rate is of debatable benefit worldwide, but an alarming high maternal morbidity and mortality associated with operative delivery in developing countries such as Pakistan, is a matter of concern. Caesarean delivery is a major operative procedure which is associated with increased risk to mother and fetus as compared to vaginal delivery². Caesarean delivery is associated with a high complication rate. The most frequent single complication is blood loss and/ or transfusion (8.1%)³. Maternal mortality rate in Pakistan is 281-433/100,000 live births. The leading cause of this high mortality rate is obstetrical blood loss. Any blood

loss >1500ml or fall in Hct >10% require blood transfusion⁴.

Timing of elective repeat caesarean section should take into account both fetal and maternal considerations. The percentage of caesarean deliveries has dramatically increased during the last decades. It undoubtedly leads to an increase in the number of women having multiple caesarean sections¹⁵. First caesarean sections should only be done if genuinely indicated, by some skilled obstetrician in well equipped hospital⁸.

Uygur et al¹⁶ in their study evaluated the obstetric outcome of patients without obstetric risks, who had two or more previous caesarean sections (C/S) prior to the current pregnancy, which was managed by caesarean section. They compared the two groups (1) those who had two or more previous caesarean sections and (2) those who had only one previous caesarean section. In the study group, dense intraperitoneal adhesions were present in 3.6% of the patients, while not found in control group. This difference was statistically significant ($p < 0.05$). Uterine wound separation rate was 1.9% in the study group and none of the patients in counter group had uterine wound separation, which was statistically significant also ($P < 0.05$). In our study dense adhesions possesses statistically significant difference ($P 0.039$).

Sobande et al¹⁷ in their study compared the complications and outcome caesarean section in women who have had three or more previous lower segment caesarean sections with those in women with one previous caesarean section. They found that there were statistically significant differences between the two groups with respect to the presence of dense adhesions during surgery, and bladder injury ($P < 0.05$). Our study implies similar results ($P 0.039$)

Juntunen et al¹³ studied the outcome after a high number (4-10) repeated caesarean sections. Total 341 caesarean sections, first to third operations were 192 and fourth or subsequent (4-10) operations were 149. Intra peritoneal adhesion were more common in the study group, as was also high and tight attachment of the bladder flap over the isthmic area ($P < 0.001$). In this study 23% of the women with four or more caesarean sections had had abdominal pain in late pregnancy, and this finding was almost always associated with thin or membranous isthmic layer. Myometrial thinning usually, although not always, progressed with the increasing number of previous caesarean sections ($P < 0.001$). This difference remained statistically insignificant in our study ($P 0.897$), nevertheless adhesions showed statistically significant difference ($P 0.039$).

Rashid et al¹¹ in their study about maternal morbidity and mortality associated with high order (≥ 5) Repeat caesarean section, in which 308 case records undergoing between 5th and 9th caesarean. Section (mean 7) were studied and compared with a control group of 306 patients undergoing 3rd and 4th caesarean. There were 167 patients in the study group who had dense adhesion noted during the operation compared with 97 patients in the control group. 264 women (86%) required longitudinal incision to open the abdominal cavity and two cases required classical caesarean sections in the study group due to severe adhesion. Also as a result of severe adhesions the duration of operation was longer in the study group compared with the control and hence greater blood loss and drop in post operative hemoglobin in the study group. Significantly more severe adhesions were noted during operative delivery in the study group (54%) compared with the control group (15%). This higher incidence of severe adhesions in the study group was not unexpected ($P < 0.001$) as dense adhesion tends to result from repeated surgery on the abdominal wall with increased chance of post operative infection. It is probable that each caesarean section is at least as morbid as the first one. Our study obtained statistically significant results pertaining to adhesions ($P 0.039$).

Nisenblat et al¹⁴ in their study assessed maternal complications associated with multiple caesarean deliveries. They compared 277 women after 3 or more caesarean deliveries (multiple caesarean group) with those occurring in 491 women after second caesarean delivery. Although they studied multiple variables, of which dense adhesions were 124 in multiple caesarean groups and 124 in second caesarean group ($P 0.001$), since significantly more common among women in the multiple caesarean group. Similarly it is found statistically significant in our study ($P 0.039$).

Amarin et al⁶ conducted retrospective review of all women with repeat caesarean sections between 1st December 1999 and 30th March 2004. A total of 989 women underwent repeat caesarean sections in three hospitals in the study period, 679 at Princess Badea teaching hospital, 185 at Prince Rashid Military Hospital and 125 at King Abdullah University Hospital. Eight women had visceral injuries, 5 had Bowel injury and in 3 the urinary bladder was adherent high on the anterior abdominal wall where it was inadvertently entered and was repaired.

Wuttikonsammakit et al¹⁸ in their study reported that maternal morbidity rate was 18.6%, including operative complications (17.5%) and post-operative complications (1.7%). The operative complications included intraperitoneal adhesion 45 cases (9.8%)

along with other variables with different results. There were no statistically significant differences of maternal morbidity among the women with history of one previous caesarean section and the women with history of two or more previous caesarean section.

CONCLUSION

The prevalence of dense intra abdominal adhesions was higher in women with the history of more previous caesarean section than in women with one previous caesarean section. Because maternal morbidity increases progressively with increasing numbers of caesarean deliveries, the number of intended pregnancies should be considered during counselling regarding elective repeat caesarean operation versus a trial of labour and when debating the merits of elective primary caesarean delivery.

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