

## A Hospital Based Observational Assessment of Various Intraoperative Complications Encountered during Repeat Caesarean Sections

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### Abstract

**Aim:** The aim of the present study was to assess the various intraoperative complications encountered during repeat caesarean sections with respect to those undergoing primary CS.

**Material & Methods:** An Observational prospective study in 200 cases done during the period of 1 year to study the incidence and type of surgical difficulties in patient with repeat Caesarean section and on table complications that were seen consecutively in the Department of Obstetrics and Gynecology.

**Results:** The present study showed maximum number of sections were done in the age group of 20-24 yrs (40%), followed by 25-29 yrs (28%). No of caesarean section done in teenage pregnancy was 8% and elderly was 4%. Out of 200 cases 120 (60%) patients have Normal BMI 18-24.9, 56 (28%) are overweight, rest 24 (12%) belong to obese. In the present study no of cases that underwent emergency Caesarean section were slightly more than elective caesarean section. Out of 200 cases of repeat C-sections studied, 140 (70%) cases had undergone previous 1 Caesarean section, 58 (29%) cases had undergone previous 2 Caesarean sections and 2 (1%) cases had undergone previous 3 Caesarean sections. In the present study, complications were seen more in cases with previous 3 sections like adhesions, scar dehiscence, thinned out LUS, hemorrhage. Repair of bladder injuries were done and postoperative period was uneventful.

**Conclusion:** The evaluation of our study data shows a significant increase in maternal morbidity with repeat Caesarean section. Our study, in light of this background, will help us to provide information on the probable complications of placenta previa and adhesions in particular, guiding patients away from elective CS and directing them towards vaginal delivery after caesarean section.

**Keywords:** Caesarean Section, Lower Segment Caesarean Section, Postpartum Haemorrhage, Vaginal Birth After Caesarean Section, Lower Uterine Segment.

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### Introduction

Caesarean section is the 2nd most common obstetric operative procedure. Caesarean delivery is defined as the delivery of a fetus through surgical incisions made through the abdominal wall (laparotomy) and the uterine wall (hysterotomy). [1] Caesarean section is usually performed when a vaginal delivery would put the baby's or mother's life at risk, although recently it has also been performed upon maternal requests with no obstetric or medical indication. When medically justified, caesarean section can effectively prevent maternal and perinatal mortality and morbidity. [2] It represents an alternative route for delivery when vaginal delivery might pose a risk to the mother or the fetus. [1] There are several factors contributing

to the increased rates of cesarean delivery including: increasing maternal age, increasing rates of induction of labour, a decline in vaginal birth after cesarean delivery due to risk of uterine rupture, decline in vaginal breech delivery, decreased use of operative vaginal delivery and fear from medical-legal concerns. [3]

Pregnancy with previous caesarean has become very common now a days because of the increase in the rate of primary caesarean section. There has been increase in the rate of caesarean section in India from 8.5% in (2005-06) to 17.2% (2015-16). [4,5] The increase in the rate of caesarean sections is mainly due to advent of newer and safer aesthetic techniques and availability of the blood, better

antibiotics, more meticulous fetal monitoring with better neonatal care facilities. A previous CS is one of the main indications for cesarean delivery in the current pregnancy. Other indications include cephalopelvic disproportion, placenta previa, eclampsia, hemolysis, elevated liver enzyme levels, low platelet levels syndrome, and others. [6,7]

The risk of complications increases with increase in the number of caesarean section due to formation of adhesions and scarring. Scar rupture is another catastrophic complication associated with previous caesarean section. It has also been reported that complication rate is higher in emergency caesarean sections as compared to elective ones. [8,9] The risk of major complications increases with number of previous CS. Scarring and adhesion formation is known to cause increase in the major complication rates from 4.3 to 12.5%. [10] Intra peritoneal adhesions have varying incidence from 5.5% to 42.5%. [11] Intraoperative problems are high blood loss (7.9%) and thick adhesions (46.1%). [12] Multiple caesareans are related with more difficult procedures and higher blood loss. [13] Caesarean section increases maternal mortality and morbidity compared to vaginal delivery. Repeat caesarean sections are associated with greater maternal morbidity

Women with a history of CS have a higher risk of hemorrhage, placenta previa, uterine rupture, stillbirth in the following pregnancies, which contributes to maternal as well as fetal morbidity. The present study aims at knowing the various intraoperative complications encountered during repeat caesarean sections with respect to those undergoing primary CS.

### Material & Methods

An Observational prospective study in 200 cases done during the period of 1 year to study the

incidence and type of surgical difficulties in patient with repeat Caesarean section and on table complications that were seen consecutively in the Department of Obstetrics and Gynecology, Shri Ramkrishna Institute of Medical Sciences and Sanaka Hospital, Durgapur, Durgapur, West Bengal, India.

**Inclusion Criteria:** Pregnant women admitted in the Department of Obstetrics and Gynaecology with the history of previous caesarean section (one or more) and patients not willing for VBAC were randomly selected and included in the study.

**Exclusion Criteria:** Pregnant women with the history of any other major open abdomino-pelvic surgeries, with multiple pregnancy, polyhydramnios, abruptio placenta and with any medical illness like severe hypertension, jaundice, heart disease and severe anemia were also excluded from the study.

### Methodology

Patients were selected according to the inclusion and exclusion criteria. Case histories of repeat caesarean deliveries were studied and the data were recorded. The existing methods of performing caesarean procedures did not affect the study. The particular difficulties we encounter while operating a repeat cesarean section were meticulously noted. The observed intraoperative problems were analysed and categorized in relation to age, parity, number of C-section, for both previous and present pregnancy. The decision for caesarean section was taken based on clinical evaluation of progression of labor, fetal condition, station and its position (in pelvis) maternal conditions and patients not willing for VBAC ( vaginal birth after caesarean section). All the intraoperative details were noted and complications were managed promptly.

### Results

**Table 1: Age wise distribution**

| Age groups in years | N  | %  |
|---------------------|----|----|
| <20 yrs             | 16 | 8  |
| 20-24 yrs           | 80 | 40 |
| 25-29 yrs           | 56 | 28 |
| 30-35 yrs           | 40 | 20 |
| >35                 | 8  | 4  |

The present study showed maximum number of sections were done in the age group of 20-24 yrs (40%), followed by 25-29 yrs (28%). No of caesarean section done in teenage pregnancy was 8% and elderly was 4%.

**Table 2: Relationship of complications with BMI**

| BMI                | N (%)    |
|--------------------|----------|
| 18-24.9 Normal     | 120 (60) |
| 25-29.9 Overweight | 56 (28)  |
| 30-34.9 Obese      | 24 (12)  |

Out of 200 cases 120 (60%) patients have Normal BMI 18-24.9, 56 (28%) are overweight, rest 24 (12%) belong to obese.

**Table 3: Incidence of emergency and elective LSCS**

| Incidence         | Previous 1 | Previous 2 | Previous 3 |
|-------------------|------------|------------|------------|
| Emergency (N=140) | 84         | 54         | 2          |
| Elective (N=60)   | 32         | 26         | 2          |

In the present study no of cases that underwent emergency Caesarean section were slightly more than elective caesarean section.

**Table 4: Number of previous cesarean section**

| Number of previous cesarean section | N   | %  |
|-------------------------------------|-----|----|
| 1                                   | 140 | 70 |
| 2                                   | 58  | 29 |
| 3                                   | 2   | 1  |

Out of 200 cases of repeat C-sections studied, 140 (70%) cases had undergone previous 1 Caesarean section, 58 (29%) cases had undergone previous 2 Caesarean sections and 2 (1%) cases had undergone previous 3 Caesarean sections.

**Table 5: Relationship of intraoperative complications with no of previous section**

| Intraoperative complications | Previous 1 | Previous 2 | Previous 3 |
|------------------------------|------------|------------|------------|
| Adhesions                    | 18         | 20         | 1          |
| Thinned Out LUS              | 20         | 9          | 1          |
| Hemorrhage                   | 11         | 11         | 1          |
| Scar Dehiscence              | 1          | 1          | 1          |
| Extension Of Incision        | 7          | 4          | 1          |
| Placenta Previa              | 0          | 2          | 0          |
| Hysterectomy                 | 1          | 1          | 0          |
| Bladder Injury               | 1          | 1          | 0          |

In the present study, complications were seen more in cases with previous 3 sections like adhesions, scar dehiscence, thinned out LUS, hemorrhage. Repair of bladder injuries were done and postoperative period was uneventful.

### Discussion

According to WHO guidelines published in 2000, at population level, caesarean section rates higher than 10% are not associated with reductions in maternal and new-born mortality rates. The guidelines also state that caesarean sections can cause significant and sometimes permanent complications, disability or death particularly in settings that lack the facilities and/or capacity to properly conduct safe surgery and treat surgical complications. [14] Caesarean sections should be undertaken when medically necessary. The trend in caesarean section rates is constantly rising in both developed and developing countries.

The relative safety of cesarean section deliveries and its perceived advantages relative to vaginal delivery has resulted in a change in the perceived risk benefit ratio, which has accelerated the acceptance for CS. Although, the operation is now safer than in the past because of improvements in anesthesia, antibiotics and blood transfusion services, a cesarean section still carries a significant risk to them other compared to a normal vaginal delivery. [15] The present study showed maximum number of sections were done in the age group of 20-24 yrs (40%), followed by 25-29 yrs (28%). No of caesarean section done in teenage pregnancy

was 8% and elderly was 4%. In the present study, the age group of cases which underwent C-section was between 18 to 35 years. [16] The highest prevalence of previous C-section was seen in age group 21-30 years. The association was found to be statistically not significant. In a study conducted by Khurshed F et al [17] incidence of repeat CS contributed to 36.5% of all Cesareans performed.

Out of 200 cases 120 (60%) patients have Normal BMI 18-24.9, 56 (28%) are overweight, rest 24 (12%) belong to obese. In the present study no of cases that underwent emergency Caesarean section were slightly more than elective caesarean section. Out of 200 cases of repeat C-sections studied, 140 (70%) cases had undergone previous 1 Caesarean section, 58 (29%) cases had undergone previous 2 Caesarean sections and 2 (1%) cases had undergone previous 3 Caesarean sections. In the present study, complications were seen more in cases with previous 3 sections like adhesions, scar dehiscence, thinned out LUS, hemorrhage. Repair of bladder injuries were done and postoperative period was uneventful. In a study conducted by Lyell DJ<sup>17</sup> showed that the incidence of adhesion development after primary caesarean section ranges from 46-65%. In a retrospective study conducted by Morales et al [18] in 542 women found that the incidence of adhesions was greater among women who underwent repeat caesarean delivery and the percentage of women with adhesions increased with each subsequent caesarean delivery. Nisenblat et al [19] demonstrated that dense adhesions were significantly more common among women who

underwent third or more caesarean section than among women who undergo their second caesarean section.

Injury to the bladder which is significantly more frequent at repeat caesarean delivery is an uncommon complication that is likely to be caused by adhesions. The incidence of bladder injury that was assessed in a cohort study of 14,757 cesarean deliveries performed at a larger academic center in Rhode Island over a 7-years period was found to be 0.28%. [17] Women who underwent a repeat cesarean delivery were almost 4 times likely to experience a bladder injury at delivery, than in women who underwent primary CD. In the same study overwhelming bladder injury (95%) occurred in bladder dome, most commonly during creation of bladder flap. In our study 10 % of the case had adhesion of bladder with uterus which was managed on table and postoperatively women had continuous cauterization for duration of 14 days. In a study conducted by Somani et al [20] bladder injury was seen in one patient of previous 2 caesarean section.

### Conclusion

The evaluation of our study data shows a significant increase in maternal morbidity with repeat Caesarean section. Our study, in light of this background, will help us to provide information on the probable complications of placenta previa and adhesions in particular, guiding patients away from elective CS and directing them towards vaginal delivery after caesarean section.

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