



INTRA-OPERATIVE DIFFICULTIES IN REPEAT CAESAREAN SECTIONS IN COLLEGE OF MEDICINE AND JNM HOSPITAL- A OBSERVATIONAL STUDY

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ABSTRACT

INTRODUCTION For nearly 30 years, the international healthcare community has considered the ideal rate for caesarean sections to be between 10% and 15%. This was based on the following statement by a panel of reproductive health experts at a meeting organized by the World Health Organization (WHO) in 1985 in Fortaleza, Brazil: "There is no justification for any region to have a rate higher than 10-15%".

AIM AND OBJECTIVES The Aim of study is focused on assessing importance of complications encountered by obstetrician and how to overcome it.

- To look for the intra-operative difficulties in a repeat Caesarean section.
- To assess on table management of the complications
- To estimate Post-operative management of complications.

MATERIALS & METHODS

Study design: It is an observational prospective study

Target population: All women undergoing one or more caesarean in department of obstetrics and gynaecology.

Study population: All women who have undergone one or more caesarean section.

Study Duration: The study was conducted during a period of 10 months from 1st July 2019 to 30th April 2020.

RESULTS AND ANALYSIS

In our study, 88(83.8%) patients had previous 1 C/S, 16(15.2%) had 2C/S and 1(1.0%) patient had 3 C/S. In above table showed that the mean number previous C/S (mean $\pm$ s.d.) of patients was $1.1714 \pm .8636$. The Present study revealed, 14(13.3%) patients had Preterm and 91(86.7%) patients had term.

SUMMARY AND CONCLUSION Further clinical studies are needed to evaluate not only the effects of surgical techniques, and intra-operative management but also to investigate their effect on peri-operative morbidity that is associated with caesarean section. The best technique to reduce the multiple potential risks of repeat caesarean section is to reduce the rates of primary and repeat caesarean sections whenever possible.

KEYWORDS

Caesarean Sections, Intra-operative Difficulties And Observational Study

INTRODUCTION

For nearly 30 years, the international healthcare community has considered the ideal rate for caesarean sections to be between 10% and 15%. This was based on the following statement by a panel of reproductive health experts at a meeting organized by the World Health Organization (WHO) in 1985 in Fortaleza, Brazil: "There is no justification for any region to have a rate higher than 10-15%"¹. The panel's conclusion was drawn from a review of the limited data available at the time, mainly from northern European countries that demonstrated good maternal and perinatal outcomes with that rate of caesarean sections. Since then caesarean sections have become increasingly common in both developed and developing countries for a variety of reasons².

With the increasing rate of caesarean delivery and relative decline in the vaginal delivery it is important that clinicians and patients understand the potential risks of repeat caesarean section which may prove detrimental in developing countries. As antenatal care seeking rate is poor and last moment reporting or transfer to tertiary units is very high. These high risk cases are managed as emergency sections against the ideal for them - the elective caesarean. High anaemia rate, low maternal body weight and inadequate dietary intake very high emergency caesarean section rate in these cases of previous caesarean section, further aggravating their risk state.³

Caesarean delivery defines the birth of a fetus via laparotomy and then hysterotomy³. However, CS are associated with increased risk of maternal and perinatal morbidity and mortality. It is associated with PPH, sepsis, peripartum hysterectomy in present pregnancy and adherent placenta, uterine rupture and death in future pregnancies. Consistent increase has been observed in the rate of Caesarean section deliveries in most of the developed countries and in many developing countries, including India, over the last few decades. An analysis of the National Family Health Survey data shows that the rate of this form of delivery in states like Kerala, Goa, Andhra Pradesh, West Bengal and

Tamil Nadu is alarmingly high. States with high institutionalized births have an increased rate of C-section deliveries. After any laparotomy, it is fairly common to develop scar tissue, adhesions and bladder extension, C-section holds no exception to this. Multiple caesarean deliveries are associated with more difficult surgeries with increased blood loss.

The risk of major complications increase with caesarean delivery number⁴. Scarring and adhesion formation is known to cause increase in the complications depending up on the number of previous caesarean section.

As with all types of abdominal surgeries, a Caesarean section is associated with risks of postoperative adhesions, incision hernias (which may require surgical correction) and wound infections. The risk of the surgery may be increased due to a number of factors.

Along with risk of anesthesia, intra operative risks like blood loss requiring blood transfusion due to various causes like adhesions, extension of uterine incision, adherent placenta. Risk of previous scar dehiscence, uterine rupture, thinning of lower uterine segment, organ injuries like bowel and bladder injury. The risk of placenta accrete, a potentially life-threatening condition, is increased after two Caesarean sections; along with this is a similar rise in the risk of emergency hysterectomies at delivery⁵.

The Aim of study is focused on assessing importance of complications encountered by obstetrician and how to overcome it.

MATERIALS & METHODS

Study design: It is an observational prospective study

Target population: All women undergoing one or more caesarean in department of obstetrics and gynaecology.

Study population: All women who have undergone one or more caesarean section.

INCLUSION CRITERIA: All women who have undergone one or more caesarean section irrespective of age and parity

EXCLUSION CRITERIA: All women who have undergone other abdominal surgeries.

Study area: Emergency Operation theatre of College of Medicine and JNM Hospital Kalyani, Nadia, W.B.

Sampling:

The eligible mothers were enrolled in the study consecutively. The patients were enrolled on the scheduled work days of the principal investigators. The data collection was over on the day on which required sample size was met.

Study Duration:

The study was conducted during a period of 10 months from 1st July 2019 to 30th April 2020.

RESULTS AND ANALYSIS

The present study showed 46(43.8%) patients were 21-25 years old, 36(34.3%) patients were 26-30 years old, 19(18.1%) patients were 31-35 years old and 4(3.8%) patient was 36-40 years old. In above table showed that the mean Age (mean $\pm$ s.d.) of patients was 26.8857 $\pm$ 4.3353 years old. In group 1, the mean Age (mean $\pm$ s.d.) of patients was 25.7045 $\pm$ 3.5885 years old. In group 2, the mean Age (mean $\pm$ s.d.) of patients was 32.8125 $\pm$ 2.1046 years old. In group 3, the mean Age (mean $\pm$ s.d.) of patients was 36.0000 $\pm$.0000 years old. Difference of mean Age with both procedure was statistically significant ($p < 0.0001$). In group 1, 46(52.3%) patients were 21-25 years old, 34(38.6%) patients were 26-30 years old and 8(9.1%) patients were 31-35 years old. In group 2, 2(12.5%) patients were 26-30 years old, 11(68.8%) patients were 31-35 years old and 3(18.8%) patients were 36-40 years old. In group 3, 1(100.0%) patients were 36-40 years old. Association of Age in years vs Number of previous C/S was statistically significant ($p < 0.0001$).

In our study, 88(83.8%) patients had previous 1 C/S, 16(15.2%) had 2 C/S and 1(1.0%) patient had 3 C/S. In above table showed that the mean number previous C/S (mean $\pm$ s.d.) of patients was 1.1714 $\pm$.8636. The Present study revealed, 14(13.3%) patients had Preterm and 91(86.7%) patients had term. In group 1, 11(12.5%) patients had Preterm and 77(87.5%) patients had term. In group 2, 2(12.5%) patients had Preterm and 14(87.5%) patients had term. In group 3, 1(100.0%) patients had Preterm. Association of Term/Preterm vs Number of previous C/S was statistically significant ($p = 0.0376$). Our study showed, 3(2.9%) patients had Bad obstetric history, 2(1.9%) patients had Cephalo- pelvic disproportion, 8(7.6%) patients had Failure to progress, 13(12.4%) patients had Fetal distress, 3(2.9%) patients had Hypertensive disease, 6(5.7%) patients had Malpresentation, 1(1.0%) patient underwent C/S on Maternal Request, 5(4.8%) patients had Obstructed labor, 58(55.2%) patients had Oligohydramnios, 3(2.9%) patients had Placenta previa and 3(2.9%) patients had Prolonged latent phase.

Our study showed, 27(25.7%) patients had adhesion between bladder and uterus, 22(21.0%) patients had adhesion between Omentum and uterus and 30(28.6%) patients had adhesion between parietal peritoneum and anterior surface of uterus. In group 1, 24(27.3%) patients had adhesion between bladder and uterus, 17(19.3%) patients had adhesion between Omentum and uterus and 25(28.4%) patients had adhesion between parietal peritoneum and anterior surface of uterus. In group 2, 3(18.8%) patients had adhesion between bladder and uterus, 5(31.3%) patients had adhesion between Omentum and uterus and 5(31.3%) patients had adhesion between parietal peritoneum and anterior surface of uterus. Association of adhesion : structure & structure vs Number of previous C/S was not statistically significant ($p = 0.5931$). 2(1.9%) patients had Injury to bladder. In group 2, 2(12.5%) patients had Injury to bladder. Association of Injury to bladder vs Number of previous C/S was statistically significant ($p = 0.0034$). Our study showed, 5(4.8%) patients had Broad Ligament Haematoma. In group 1, 3(3.4%) patients had Broad Ligament Haematoma. In group 2, 2(12.5%) patients had Broad Ligament Haematoma. Association of Broad Ligament Haematoma vs Number of previous C/S was not statistically significant ($p = 0.2840$).

We found in our study 2(1.9%) patients had Placenta previa. In group 2, 2(12.5%) patients had Placenta previa. Association of Placenta previa vs Number of previous C/S was statistically significant ($p = 0.0034$). 1(1.0%) patients had Placenta Accreta. In group 2,

1(6.3%) patients had Placenta Accreta. Association of Placenta Accreta vs Number of previous C/S was not statistically significant ($p = 0.0603$). 22(21.0%) patients had Extension of uterine incision. In group 1, 18(20.5%) patients had Extension of uterine incision. In group 2, 4(25.0%) patients had Extension of uterine incision. Association of Extension of uterine incision vs number of previous C/S was not statistically significant ($p = 0.8039$). 16(15.2%) patients had Thinned out Lower uterine segment. In group 1, 13(14.8%) patients had Thinned out Lower uterine segment. In group 2, 3(18.8%) patients had Thinned out Lower uterine segment. Association of Thinned out Lower uterine segment vs No previous C/S was not statistically significant ($p = 0.8406$). 3(2.9%) patients had Scar Dehiscence. In group 1, 3(3.4%) patients had Scar Dehiscence. Association of Scar Dehiscence vs Number of previous C/S was not statistically significant ($p = 0.7421$). 44(41.9%) patients had Adhesiolysis Management and 2(1.9%) patients underwent bladder repair. In group 1, 35(39.8%) patients had Adhesiolysis. In C/S group 2, 9(56.3%) patients had Adhesiolysis. Association of Adhesiolysis vs Number of previous C/S was not statistically significant ($p = 0.3266$).

DISCUSSION

The relative safety of caesarean 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 caesarean section [25]. Although, the operation is now safer than in the past because of improvements in anesthesia, antibiotics and blood transfusion services, a caesarean section still carries a significant risk to the mother compared to a normal vaginal delivery.

Our study showed that 46(43.8%) patients were between 21-25 years old, 36(34.3%) patients were between 26-30 years old, 19(18.1%) patients were between 31-35 years old and 4(3.8%) patient was between 36-40 years old. The mean age of patient was 26.8857 $\pm$ 4.3353 yrs. The association of age in yrs vs number of previous CS was statistically significant in our study ($p < 0.0001$).

It was found that 14(13.3%) patients had Preterm and 91(86.7%) patients had term. The association of term/preterm vs number of previous caesarian section was statistically significant in our study.

The study conducted by Somani SS et al ⁶ (2018) also found significant association of parity vs number of previous caesarean section.

Intraoperative complication like structure to structure adhesion was more commonly seen in group 1. i.e. with previous one CS compared to group 2 and group 3.

The most common indication of caesarean section was oligohydramnios (55.2%) followed by fetal distress (12.4%), failure to progress (7.6%) for vaginal delivery. The least common indication for CS we found was CS on maternal request (1%), followed by CPD (1.9%).

Similar to our study Khursheed F et al ⁷ (2009) found the most common indication of CS in his study was Oligohydramnios, failure to progress and least common was BOH , Malpresentation, Placenta Previa , Hypertensive disorder in pregnancy .

Comparison of intraoperative complications of CS with others The most common intraoperative complication we found in our study was adhesion of parietal peritoneum with anterior surface of uterus (28.6%) followed by bladder adhesion with uterus (25.7%) , mental adhesion with uterus (21%). Association of adhesion: Structure and structure vs number of previous caesarean section was not statistically significant in our study.

Similar studies conducted by Sheela WG et al ⁸ (2017) found bladder adhesion one of the most common intraoperative complication in CS.

The incidence of Bladder injury during CS was 1.9% in our study. The association of bladder injury vs number of previous cesarean was statistically significant ($p = 0.0034$).

Similar studies conducted by Mettu K et al ⁹ (2015) found bladder injury was the most common intraoperative complication during CS which has significant association with number of previous CS.

In our study we found broad ligament hematoma (4.8%) was observed

during CS. But the association of broad ligament hematoma vs number of previous CS was not statistically significant ($p=0.2840$).

Similarly Kaplanoglu M et al ¹⁰ (2014) found (12.5%) patients had broad ligament hematoma.

The present study showed 2 (1.9%) cases of placenta previa among 105 participants. The association of placenta previa vs number of previous CS was statistically significant ($p=0.0034$).

Kaplanoglu M et al ¹⁰, Khursheed F et al ⁷ also found placenta previa one of dangerous complication in a individual with previous one or more CS which collaborates with our study.

Out of 105 participants 1 patient had placenta accrete (1.0%) in our study. Association of placenta accreta was not statistically significant ($p=0.0603$) in our study which was similar in the study conducted by Kaplanoglu M et al ¹⁰. But another study done by Mettu K et al ¹¹ found significant association of placenta accreta with number of previous caesarean section.

Our study did not show any significant association of extension of uterine incision; thinned out lower uterine segment, scar dehiscence with number of previous caesarean section.

Unlike us studies conducted by Mettu K et al ¹¹, and Sheela WG et al ⁸ found significant association of scar dehiscence with number of previous CS.

We did adhesiolysis for 35 patients with previous one or more CS, but we did not find any significant association of adhesiolysis with previous CS. Similar like us study conducted by Ramkrishna MA et al ⁵ found that parietal wall intra peritoneal adhesion make repeat caesarean section a difficult procedure which needed adhesiolysis.

Table: Difference of Term/Preterm, Previous Indication, Adhesion: Structure & Structure, Placenta Previa, Placenta Accreta and Extension Of Uterine Incision

		Frequency	Percent
Term/Preterm	Preterm	14	13.3%
	Term	91	86.7%
	Total	105	100.0%
Previous Indication	Bad obstetric history	3	2.9%
	Cephalo-pelvic disproportion	2	1.9%
	Failure to progress	8	7.6%
	Fetal distress	13	12.4%
	Hypertensive disease	3	2.9%
	Malpresentation	6	5.7%
	C/S on Maternal Request	1	1.0%
	Obstructed labor	5	4.8%
	Oligohydramnios	58	55.2%
	Placenta previa	3	2.9%
	Prolonged latent phase	3	2.9%
	Total	105	100.0%
Adhesion : Structure & Structure	Bladder and uterus	27	25.7%
	None	26	24.8%
	Omentum and uterus	22	21.0%
	Parietal peritoneum and anterior surface of uterus	30	28.6%
	Total	105	100.0%
Placenta Previa	No	103	98.1%
	Yes	2	1.9%
	Total	105	100.0%
Placenta Accreta	No	104	99.0%
	Yes	1	1.0%
	Total	105	100.0%
Extension Of Uterine Incision	No	83	79.0%
	Yes	22	21.0%
	Total	105	100.0%

SUMMARY AND CONCLUSION

During a caesarean delivery women are at an increased risk of injury than they are during a vaginal birth. The risk increases with the increasing number of caesarean sections, parity, early marriages, early

conception, short intervals between subsequent pregnancy, undernourishment, inadequate ante-natal checkups, high prevalence of illiteracy and poverty especially in our Indian women ¹².

A variety of intra-operative complications such as abnormal placenta ions, intra- operative hemorrhage, and increased incidence of adhesions, scar dehiscence, bladder injuries were noted, and these were more in women with more number of caesarean sections.

Although causations often difficult to establish, some of these complications are likely associated with surgery induced adhesions. Implementation of appropriate surgical techniques, such as peritoneal closure, should be considered in women who undergo CD, particularly among women likely to have repeated surgical procedures ¹³. Further clinical studies are needed to evaluate not only the effects of surgical techniques, and intra- operative management but also to investigate their effect on peri-operative morbidity that is associated with caesarean section. The best technique to reduce the multiple potential risks of repeat caesarean section is to reduce the rates of primary and repeat caesarean section s whenever possible.

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