

## STUDY ON INTRA OPERATIVE AND POST OPERATIVE COMPLICATIONS ASSOCIATED WITH REPEAT CESAREAN SECTIONS AND ITS MATERNAL AND FETAL OUTCOME

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### ABSTRACT

**Background:** Caesarean section (CS) is most common obstetric surgery performed worldwide. The risk of complications increases with increase in the number of caesarean section. The purpose of this study was to evaluate adverse maternal and fetal complications associated with pregnancies with repeat caesarean section. **Methods:** This is a prospective study done in department of OBG, navodaya medical college hospital and research centre. 100 pregnant women with history of one or 2 caesarean sections were included. In all cases thorough history, physical and obstetric examination, routine investigations were carried out. All intra operative and post operative complications, maternal and fetal outcome are noted and the data is analysed. **Results:** In the present study majority of the cases were in 20-25 years age group (32%), the maximum number of caesarean sections were done between gestational age of 37-39.6 weeks (75.7% in 1 prev LSCS and 73.3% in 2 prev LSCS). most common indication being previous caesarean section (66.6% in 2 prev LSCS) and fetal distress (35% in 1 prev LSCS). Intraoperatively Adhesions was seen in 24% cases, Atonic PPH was seen in 5% cases. 10% neonates had APGAR score <8, neonatal death rate was 1%. **Conclusion:** Previous cesarean section is one of the most important causes of CS in subsequent pregnancies, Hence educating the patient during antenatal visits regarding Vaginal delivery and its benefits when compared to caesarean delivery and its complications, proper antenatal and intrapartum monitoring of patients are key to reduce the caesarean section rates.

**KEYWORDS:** previous 1 and 2 caesarean section, scar rupture, maternal morbidity, NICU admissions.

### INTRODUCTION

Caesarean section (CS) is most common obstetric surgery performed worldwide to save life of pregnant women as well as fetus with a continuously increasing incidence for the last two decades giving the women, an obstetrical status of "previous caesarean section".<sup>[1]</sup>

Caesarean section is an operative procedure whereby the fetuses after the end of 28<sup>th</sup> weeks are delivered through an incision on the abdominal and intact uterine wall.<sup>[2]</sup> 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.<sup>[3]</sup> In a global report published in 2018, the caesarean section rates globally have nearly doubled, from 12% in 2000 to 21% in 2015.<sup>[4]</sup> In India the Caesarean section rate has increased to 21.5% (NFHS 2020-21) from 17.2% (NFHS 2015-16).<sup>[5]</sup>

The reasons for increase in caesarean rates include advanced maternal age due to the quest for higher education and career advancement thus placing them at higher risk of pregnancy complications.<sup>[6]</sup> Use of electronic fetal monitoring and early detection of fetal distress, reduction in instrumental delivery due to fear of high maternal and fetal morbidity and litigation by patient, more labor induction so more chances of failure, decrease in VBAC because of comparatively increase fetomaternal morbidity than caesarean in previous caesarean section patients, ART, caesarean at maternal request due to fear of labour pains is also one of the indication.<sup>[7]</sup>

One of the commonest indications of cesarean section is previous caesarean section. The risk of complications increases with increase in the number of caesarean section due to formation of adhesions and scarring. Scar rupture in cases with previous caesarean section is another catastrophic complication. It has also been

reported that complication rate is higher in emergency caesarean sections than in elective ones.<sup>[8]</sup>

Complications of scarred uterus include an increased risk of spontaneous abortion, scar dehiscence, placenta accreta spectrum. Apart from scar related complications there are other morbidities related to post caesarean deliveries like scar pregnancy, traumatic postpartum hemorrhage, dense abdominal adhesions, rectus sheath hematoma, adherent bladder and thinned lower uterine segment. In the management of patient with previous caesarean section, regular and intensive antenatal surveillance is required. Proper selection, appropriate timing of delivery with close supervision by experienced obstetrician are necessary.<sup>[9]</sup>

This study was carried out to assess the fetomaternal outcome in previous history of caesarean pregnancy so that we can implement better safety measures to avoid any maternal complications arising due to caesarean sections.

## OBJECTIVE

To study the intra operative and post-operative complications, maternal and fetal outcome in pregnant women with repeat Caesarean sections at NMCH and RC, RAICHUR.

## METHODS

A Prospective observational study was conducted at department of obstetrics and Gynaecology, Navodaya medical college hospital and research centre, Raichur, during one year period from June 2023 –May 2024.

## INCLUSION CRITERIA

All pregnant women who have undergone one/more caesarean section irrespective of age and parity.

## EXCLUSION CRITERIA

pregnant women who have undergone other abdominal surgeries.

100 antenatal patients with previous history of 1 or more caesarean sections were included after institutional ethical clearance and proper consent from the patients who are willing to participate in the study. In all cases thorough history, complete physical and obstetrical examination, routine and case specific investigations (blood investigations and USG) were carried out, Anemia correction was done for required patients and cross matched blood was arranged. patients were followed up till delivery and for 7 days thereafter. All adverse maternal and fetal complications were noted.

## RESULTS

In the present study, 100 patients with previous history of 1 and 2 caesarean deliveries admitted to labour ward and underwent caesarean section are chosen. In all cases thorough history taking and clinical examination was done. they were followed up until they were discharged

post operatively. Results thus obtained were analysed and expressed in tables.

**Table 1: Age wise distribution of patients.**

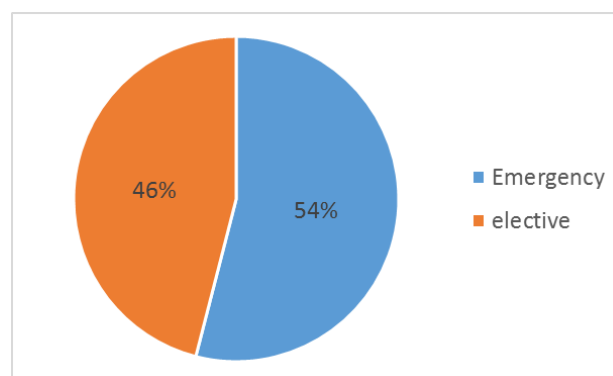
Age in years	No of patients(N=100)	Percentage (%)
20-25 yrs	32	32%
26-30 yrs	28	28%
31-35 yrs	26	26%
>35 yrs	14	14%

The most frequent age group with previous history of caesarean section being admitted was 20-25years(32%), followed by patients between 26-30years(28%) and between 31-35years(26%) (Table 1)

**Table 2: Antenatal checkups.**

Cases	Percentage
Booked	60%
Unbooked	40%

60% patients had regular antenatal checkups and were booked cases at the present hospital(Table 2)



**Figure 1: Distribution of cases according to timing of caesarean section.**

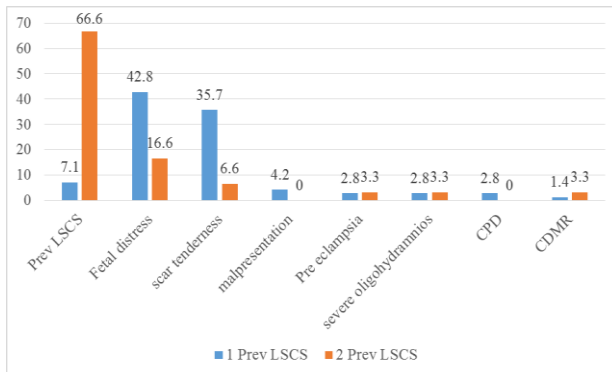
In the present study no of cases that underwent emergency caesarean section(54%) were slightly more than elective caesarean section(46%)(figure 1). out of 100 cases of repeat c sections studied 70 cases underwent previous 1 caesarean section, 30 cases underwent previous 2 caesarean sections.

**Table 3: Distribution of cases according to gestational age at the time of delivery.**

Gestational Age	1 prev LSCS(N=70)	2 Prev LSCS(N=30)
32-34.6 weeks	1(1.4%)	2(6.6%)
35-36.6 weeks	5(7.1%)	5(16.6%)
37-39.6 weeks	53(75.7%)	22(73.3%)
>40 weeks	11(15.7%)	1(3.3%)

The maximum number of caesarean sections were done between 37-39. 6 weeks(75.7% in 1 prev LSCS, 73.3% in 2 prev LSCS), followed by more than 40 weeks(15.

7%) in 1 prev LSCS and between 35-36.6 weeks(16.6%) in 2 prev LSCS (Table 3).



**Figure 2: Indications of LSCS (Total 100 cases).**

The most common indication found was fetal distress (42.8%), followed by scar tenderness(35.7%) in 1 prev LSCS, repeat caesarean section(66.6%), followed by fetal distress(16.6%) was most common indications in 2 prev LSCS (Figure 2)

**Table 5: Relationship of Intraoperative Complications with No of Previous Section.**

Intraoperative complications	Previous 1 LSCS(N=70)	Previous 2 LSCS(N=30)
No complications	43(61.4%)	5(16.6%)
Adhesions	11(15.7%)	12(40%)
Thinned out LUS	10(14.2%)	5(16.6%)
Scar dehiscence	1(1.4%)	3(10%)
Scar Rupture	0	1(3.3%)
Angle extension	1(1.4%)	2(6.6%)
Placenta previa	0	1(3.3%)
Atonic PPH	4(5.7%)	1(3.3%)

complications were seen more in cases with 2 prev LSCS than 1 prev LSCS like adhesions(40% vs 15.7%), thinned out LUS(16.6% vs 14.2%), scar dehiscence(10% vs 1.4%), Angle extension(6.6% vs 1.4%), Atonic PPH(3.3% vs 5.7%), scar rupture(3.3%) and placenta previa(3.3%) In 2prev LSCS (Table 5).

**Table 6: Postoperative complications.**

Post operative complications	1 prev LSCS(N=70)	2 Prev LSCS(N=30)
No complications	65(92.8%)	23(76.6%)
Paralytic ileus	1(1.4%)	3(10%)
Wound infection	2(2.8%)	2(6.6%)
Wound gaping	1(1.4%)	1(3.3%)
Secondary resuturing	1(1.4%)	1(3.3%)

paralytic ileus (10%) and wound infection(6.6%) are most common complications in cases of 2 prev LSCS, wound infection(2.8%), wound gaping(1.4%) requiring secondary resuturing are seen in 1 prev LSCS (Table 6).

**Table 7: Distribution of neonates according to APGAR score at birth.**

APGAR score at 5 mins	1 Prev LSCS(N=70)	2 Prev LSCS(N=30)
3-5	0	1(3.3%)
6-8	4(5.7%)	5(16.6%)
>8	66(94.2%)	24(80%)

94.2% babies of 1 prev LSCS cases and 80% babies of 2 prev LSCS cases had APGAR score of >8, 20% of 2 prev LSCS and 5.7% of 1 prev LSCS babies had APGAR score <8 (Table 7)

**Table 8: Fetal Outcomes.**

Fetal outcomes	1 Prev LSCS(N=70)	2 Prev LSCS(N=30)
Preterm delivery	6(8.5%)	7(23.3%)
Low birth weight	4(5.7%)	6(20%)
Birth asphyxia	1(1.4%)	1(3.3%)
Neonatal death	0	1(3.3%)
NICU admissions	16(22.8%)	8(26.6%)

13 out of 100 births were preterm deliveries, 16 (22.8%) babies of 1 prev LSCS and 8 (26.6%) of 2 prev LSCS required NICU admissions, 1 neonatal death was seen in 2 prev LSCS case (Table 8).

## DISCUSSION

In the present study, 100 cases with 1 and 2 previous caesarean section were included, maximum patients were between 20-30years age group(60%). 60% of patients were booked and 40% were unbooked cases. 70% cases are 1 prev LSCS and 30% cases are 2 prev LSCS. The number of patients underwent emergency LSCS(54%) were slightly higher than elective LSCS (46%). Multiple caesarean sections predisposes to an increased risk of dense adhesions, scar dehiscence, uterine rupture, abnormal placentation, significant haemorrhage, bladder injuries and Caesarean Hysterectomies. In the present study Complications were seen more in cases with 2 previous LSCS than 1 prev LSCS.

Difficulty in opening the abdomen due to Adhesions was encountered in 12 cases(40%) of 2 prev LSCS and 11cases(15.7%) of 1 prev LSCS. Adhesions complicated the delivery process, leading to prolonged operative time, increased blood loss and delayed fetal delivery, but were effectively managed through adhesiolysis. In a study conducted by Singh P et al, the incidence of adhesions was 42.6% In 2 prev LSCS.<sup>[8]</sup> In a study by Sharma T et al, Adhesions was seen in 15.8% of 1 prev LSCS.<sup>[10]</sup>

The incidence of scar dehiscence was seen in 1 case(1.4%) of 1 previous LSCS and 3 cases(10%) of 2 previous LSCS. In a study conducted by Nilanchali et al shows 1.4% of scar dehiscence in 1 previous LSCS<sup>[11]</sup>, In a study by Aparijitha Mishra et al the scar dehiscence

was seen in 0.7%, 2.5% 25% of women with previous one, previous two and previous three caesarean sections respectively.<sup>[12]</sup> Scar rupture is seen in 1 case (3.3%) of 2 Prev LSCS, study by Anagha A et al showed scar rupture in 2.74% cases.<sup>[13]</sup> Placenta Previa was seen in 1 case(3.3%) of 2 Prev LSCS, In a study by Shakun Singh et al placenta Previa was seen in 3% of cases.<sup>[14]</sup>

PPH was seen in 4 cases (5.7%) of one previous LSCS and 1 case(3.3%) of 2 previous LSCS. In a study by Bhowmik J et al PPH was seen in 6.66% of cases.<sup>[9]</sup> In the present study Atonic PPH, Adhesions, placenta Previa and angle extension were common causes of Haemorrhage. All cases of Haemorrhage were medially managed successfully without surgical intervention. complications like placenta accrete, bladder injury and Hysterectomy were not seen in this study.

Post operative complications has increased as the no of previous CS increased because of intra operative complications that required prolonged operative time and increased tissue handling, paralytic ileus (10%) and wound infection(6.6%) are most common complications in cases of 2 prev LSCS, wound infection(2.8%), wound gaping(1.4%) requiring secondary resuturing are seen in 1 prev LSCS. Malnutrition and Anemic status was the main causes for wound complications. In a study by sharma et al wound infection was seen in 4.7% cases and paralytic ileus was seen in 8% cases.<sup>[10]</sup> The mean hospital stay was 7-8days. In some cases the hospital stay was increased due to post operative complications like wound infection, wound gaping.<sup>[2]</sup> cases required secondary suturing.

In the present stud preterm CS was done for 13% cases Due to patients admitted with complaints like scar tenderness and fetal distress, In a study by Nazaneen s et al preterm CS was done in 18.15% cases.<sup>[15]</sup> 16 cases(22.8%) of 1 prev LSCS and 8 cases(26.6%) of 2 prev LSCS required NICU admissions, most common indication was neonatal jaundice followed by low birth weight and neonatal sepsis. In a study by Minoo Yaghmaei et al NICU admissions was seen in 26.8% and 28.7% cases of 1 prev LSCS and 2prev LSCS respectively.<sup>[16]</sup> Neonatal death was seen in one case(3.3%) due to prematurity and respiratory distress syndrome. In a study by Sharma T et al, neonatal death was seen in 2.6% cases.<sup>[10]</sup>

## CONCLUSION

Due to rise in caesarean section rate as a primary mode of delivery in past few years, the number of Deliveries with previous caesarean section has also increased and has been associated with fetomaternal complications. Present study shows that the maternal and perinatal morbidity and mortality is increased with increasing number of caesarean sections. Educating the patient during antenatal visits regarding Vaginal delivery and its benefits when compared to caesarean delivery and its complications, proper antenatal and intrapartum

monitoring of patients are key to reduce the caesarean section rates. maternal anxiety towards normal delivery due to fear of labor pains, pelvic floor injury and fetal injury during vaginal birth should be reduced by proper counselling.

## REFERENCES

1. J Vasantha lakshmi, C Anuradha and M Rishitha, A Study on intaoperative complications in repeat cesarean section, prospective observational study at tertiary care hospital, international journal of clinical obstetrics and gynaecology, 2020; 4(2): 144-149.
2. Dutta DC. Textbook of obstetrics including perinatology and contraception, 10th ed. Jaypee, New Delhi, 2023.
3. Sancheeta Ghosh KS, James. Levels and Trends in Caesarean Births: Cause for Concern?, Economic & Political Weekly EPW, 2010; XLV: (5).
4. Boerma T, Ronsmans C, Melesse DY, et al. Global epidemiology of use of and disparities in caesarean sections. Lancet, 2018; 392(10155): 1341–8.
5. International Institute for Population Sciences (IIPS) and ICF. 2021. National Family Health Survey (NFHS-5), 2019-21: India: Volume I. Mumbai: IIPS.
6. Jombo S, Ossai C, Onwusulu D, Ilikannu S, Fagbemi A. Feto-maternal outcomes of caesarean delivery in Federal Medical Centre, Asaba: a two year review. Afri Health Sci, 2022; 22(1): 172-9.
7. Sharma T, Singh S. Fetomaternal outcome in previous one cesarean section: a retrospective observational study at a district hospital of Jharkhand. Int J Reprod Contracept Obstet Gynecol, 2021; 10: 3834-9.
8. Prachi Singh, Ritika Agarwal\*, Shweta Yadav. An analytical study of intraoperative, immediate post-operative and perinatal complications in previous two caesarean section, International Journal of Reproduction, Contraception, Obstetrics and Gynecology Singh P et al. Int J Reprod Contracept Obstet Gynecol, 2018 Oct; 7(10): 4239-4242.
9. Joyita Bhowmik, Amit Kyal\*, Indrani Das, Vidhika Berwal, Pijush Kanti Das, Partha Mukhopadhyay. Pregnancy with previous caesarean section: an overview of adverse fetomaternal sequelae. International Journal of Reproduction, Contraception, Obstetrics and Gynecology Bhowmik J et al. Int J Reprod Contracept Obstet Gynecol, 2018 May; 7(5): 1817-1821.
10. Sharma T, Singh S. Fetomaternal outcome in previous one cesarean section: a retrospective observational study at a district hospital of Jharkhand. Int J Reprod Contracept Obstet Gynecol, 2021; 10: 3834-9.
11. Nilanchali S, Reva T, MalaYM. Maternal and fetal outcomes in patients with previous caesarean section undergoing a trial of vaginal birth at a tertiary care centre in north India. J pregnancy child health, 2014; 1: 1.

12. Aparajita Mishra, Surekha Gawade, Shilpa chowdari, A Study of perioperative complications with recurrent cesarean section, *MedPulse – International Journal of Gynaecology*, ISSN: 2579-0870, Online ISSN: 2636-4719, February 2020; 13(2): 53-58.
13. Anagha A. Jinturkaret al Study of Obstetric and Fetal Outcome of Post Caesarean Section Pregnancy at Tertiary Care International Journal of Recent Trends in Science And Technology, 2014; 10(3): 530-537.
14. Singh S, Dhama V, Chaudhary R, Karya U, Nanda K. Maternal and fetal outcome in pregnant women with previous one lower segment cesarean section. *Int J Reprod Contracept Obstet Gynecol*, 2016; 5: 3815-9.
15. Nazaneen S, Kumari A, Malhotra J, Rahman Z, Pankaj S, Alam A et al. Study of intraoperative complications associated with repeat cesarean sections at a tertiary care hospital in Eastern India. *IOSR-JDMS*, 2017; 16(8): 77-82.
16. Yaghmaei, M., Ajori, L., Mokhtari, M. Repeat Cesarean Sections: Maternal and Neonatal Outcomes and Complications. *J Obstet Gynecol Cancer Res*, 2024; 9(1): 95-101.