

## ABSTRACT

# Feto-maternal Outcomes in Patients with Previous Two LSCSs

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## ABSTRACT

**Background:** The trend of increasing caesarean section rates in most countries worldwide has been referred to as “an epidemic”. In India, there has been a 400 and 300% rise in caesarean section rates in private and public hospitals, respectively. The rising trend of caesarean section has resulted in the rise of multiple repeat caesarean sections which are known to be associated with an increase in both maternal and perinatal morbidity and mortality. Hence, we decided to study maternal and neonatal outcomes and complications in patients with previous two lower segment caesarean sections (LSCSs). Herewith presenting a study that analyzes the risk associated with previous two caesarean deliveries such as bleeding and need for transfusion, bladder and bowel adhesions, and injuries and uterine rupture.

**Materials and Methods:** This is a retrospective observational study conducted in the Department of OBGYN at D Y Patil Hospital Navi Mumbai after IEC approval, where data on 192 cases of 4087 confinements of ANC patients with previous two LSCSs were collected, and maternal and fetal outcomes were analyzed.

**Results:** In our study, incidence rate of patients with previous two LSCSs was 5% (192 of 4087 patients). Among the cases with previous two LSCSs, placenta previa was observed in 6% of our patients. Two percent of our patients had abnormal placentation. Around 28% of our patients had severe adhesions with advancement of the bladder, 15% of our patients had atonic postpartum hemorrhage (PPH), and 12% of our patients required a blood transfusion. Bladder and bowel injuries were noted in 8% of our cases. Scar rupture was seen in 2% of our patients and scar dehiscence in 6% patients. Two percent patients needed an obstetric hysterectomy (OH) and 19% patients needed intensive care unit admission. As far as neonatal outcome is concerned, 70% of our neonates were fine and were roomed with the mother, 25% required neonatal intensive care unit admission.

**Conclusions:** Decreased rates of vaginal birth after caesarean section and increasing rates of caesarean delivery have resulted in the increase in previous two LSCS rates along with its potential complications. As the number of caesarean deliveries increases, the risk of morbidity also increases.

**Keywords:** Feto-maternal outcomes, Postoperative complications, Previous two LSCSs.

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## INTRODUCTION

Caesarean section can be life saving for both the baby and the mother. Caesarean section is of utmost importance when there are complications in vaginal delivery due to complications such as malpresentations, fetal distress, and cephalopelvic disproportion, if done when indications are proper. Caesarean section rates have increased without medical indications and its fetal and maternal risk is not being acknowledged. There are mainly three significant reasons for decreasing vaginal birth after caesarean section (VBAC) rates and rising primary caesarean section rates. The reasons for this rise in caesarean section rate being less trial of labor, early decision of repeat LSCSs, and unwillingness of patients for vaginal birth after caesarean sections due to the fear of uterine rupture. The major goal of the study is to analyze the maternal and fetal risks associated with multiple caesarean deliveries such as abnormal placentation, adhesions, transfusions, bowel and bladder injury, uterine ruptures, neonatal intensive care unit (NICU) admission rates, and prematurity. The World Health Organization has stated that caesarean section should be undertaken only when indicated mainly for the need of the patient and not to fulfill a target. It also states that caesarean sections have an increased rate of complications especially in institutions that lack the means to carry out safe surgery or tackle complications.<sup>1</sup> Rising trend of caesarean section results in the rise of multiple repeat caesarean sections which are associated with both maternal and fetal complications, hence we decided to study maternal and neonatal outcomes and complications in previous two caesarean sections. Here, we

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have analyzed the fetal and maternal outcomes that helps us in counseling the patients.

## AIMS AND OBJECTIVES

- To analyze the feto-maternal outcomes in patients with previous two LSCSs.
- To analyze ICU and NICU admissions.
- Maternal morbidity.

## MATERIALS AND METHODS

This is a retrospective clinical observational study carried out in women with previous two caesarean sections in the Department of OBGYN in D Y Patil Hospital, Navi Mumbai, over a period of two years from July 2018 to July 2020 in the mothers at term

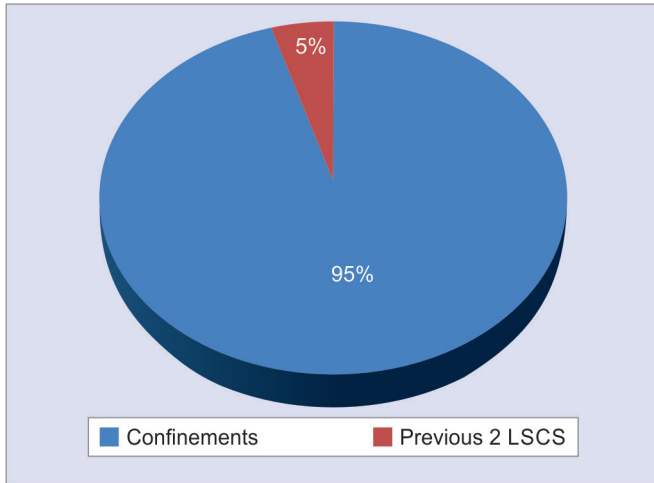


Fig. 1: Percentage of patients with previous two LSCSs

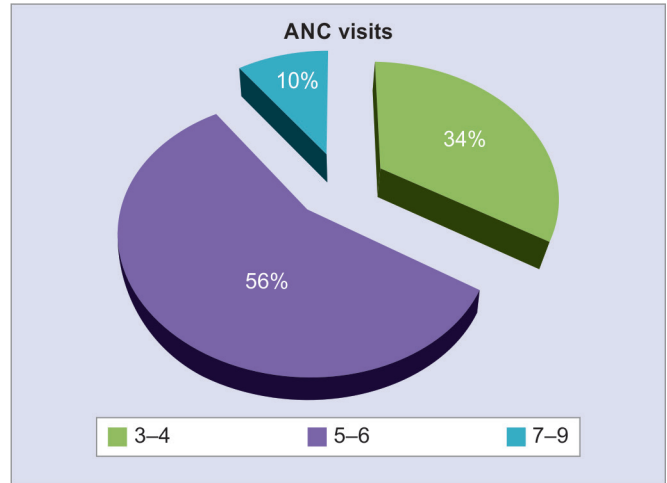


Fig. 3: Number of ANC visits

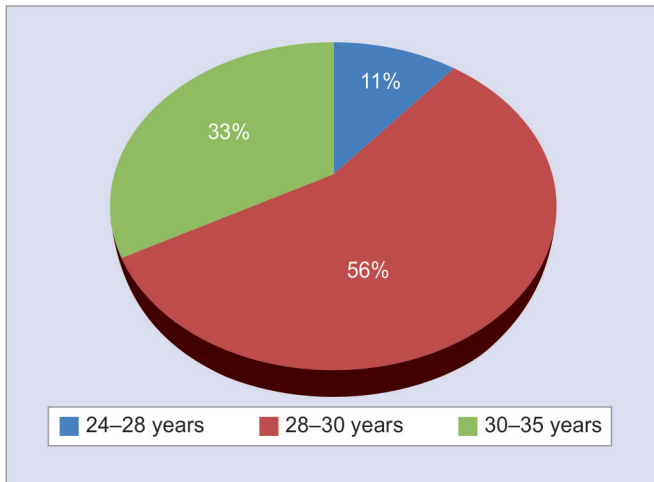


Fig. 2: Age group of patients

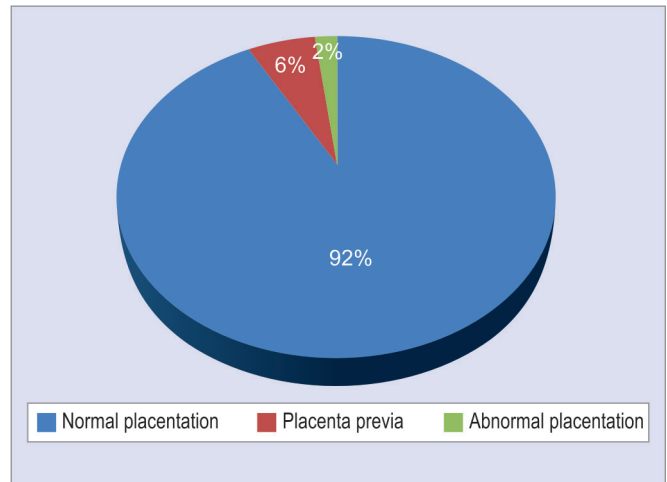


Fig. 4: Sonography findings of placenta

gestation with singleton pregnancy after IEC approval. Number of ANC visits, indications of previous LSCSs, sonography findings of placental localization, and abnormal placentation were noted. Any complications during antenatal and intraoperative period were recorded. Duration of hospital stay, need for blood transfusion, and any ICU admissions were also noted. Fetal outcome and any NICU admissions were recorded. Prevalence of previous 2 LSCSs and demographic profile of patients were evaluated.

**Inclusion Criteria**

- Singleton pregnancy,
- Gestational age 36-38 weeks,
- History of previous 2 LSCSs.

**Exclusion Criteria**

- History of only one LSCS,
- Gestational age < 36 weeks,
- Twin gestation.

**RESULTS AND ANALYSIS**

Over a period of 2 years, from July 2018 to July 2020, in our hospital, we had total 4087 confinements out of these 192 were

patients with history of previous 2 LSCSs giving us the incidence of 5% (Fig. 1).

The demographic profile of our patient was analyzed, and it was found that 56% (107 of 192) of our patients were 28-30 years, whereas only 11% (21 of 192) of our patients were 24-28 years as in our Indian population, patients complete their obstetric career earlier and 33% (64 of 192) of our patients were multiparous in age group of 35 years as shown in Figure 2.

The number of ANC visits was recorded and it was noted that 56% (108 of 192) of patients had five to six ANC visits and only 10% (19 of 192) had seven to nine ANC visits as shown in Figure 3.

Routine obstetric sonography during the ANC period was done among the cases with previous two LSCS placenta previa was seen in 6% (12 of 192) of our cases and abnormal placentation was seen in 2% (4 of 192) of our patients, and remaining 92% (172 of 192) of patients had placenta situated either on anterior or posterior wall of the uterus with normal placentation as shown in Figure 4.

Intraoperative findings showed that 28% (54 of 192) of our patients had severe adhesions with advancement of the bladder, so sharp dissection was required. Around 15% (29 of 192) of our patients had atonic PPH and 12% (23 of 192) of patients required blood transfusion. Bladder and bowel injuries were noted in 8% (15 of 192)

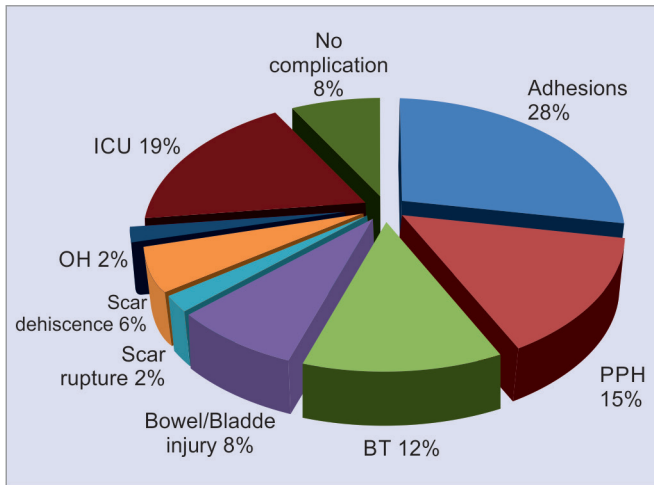


Fig. 5: Intraoperative findings and complications

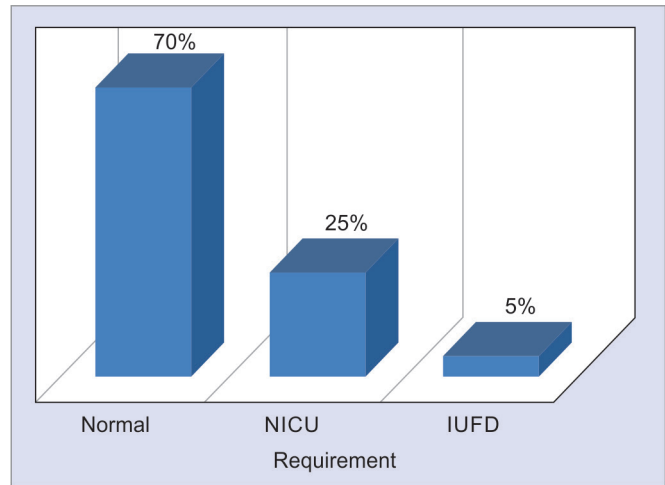


Fig. 6: Neonatal outcomes

Table 1: Maternal complications: Our study vs study by Zwergel and von Kaisenberg<sup>2</sup>

	Maternal complications						
	Uterine rupture (%)	Blood transfusion (%)	ICU (%)	OH (%)	Adhesion (%)	Placenta accreta (%)	Placenta previa (%)
Zwergel and von Kaisenberg <sup>2</sup>	3.71	2.23	0.63	0.91	20	0.67	1.22
Our study	2	12	19	2	28	2	2

of our cases. Scar rupture was seen in 2% (4 of 192) of our patients and scar dehiscence in 6% (12 of 192) patients. Two percent (4 of 192) patients needed an obstetric hysterectomy (OH). Approximately 19% (36 of 192) patients needed ICU admission as shown in Figure 5.

As far as neonatal outcome is concerned, 70% (134 of 192) of our neonates were fine and were roomed with the mother, 25% (48 of 192) required NICU care and 5% (10 of 192) had intrauterine fetal demise (IUFD) (Fig. 6 and Table 1).

## DISCUSSION AND COMPARISON WITH OTHER STUDIES

Although caesarean section is a safe procedure in today's times, there are doubts about the risks involved in multiple caesarean sections. Thus, it is important to analyze and evaluate the results of dependable and crucial studies about repeat caesarean sections and its complications to aid in further management. It is essential that to reduce the number of previous 2 LSCS cases, we must first master the art of a normal vaginal delivery and VBAC and know its prerequisites, indications, shortcomings, and complications. Many organizations such as RCOG and ACOG have analyzed VBAC which is planned in a good and safe option for most patients with previous one LSCS if optimal conditions are met. In a study conducted by Zwergel and von Kaisenberg,<sup>2</sup> the risk of traumatizing the bladder in third caesarean section was 0.23%, bowel injury 0.18%, uterine rupture 3.71%, blood transfusion 2.23%, ICU admission 0.63%, OH 0.91%, placenta accreta 0.67%, placenta previa 1.22%, and severe adhesions 20%. Increasing rates of multiple caesarean sections has led to increase in the number of cases of subsequent placenta previa and accreta that can lead to maternal and perinatal complications according to the study. With respect to fetal risks, during third cesarean section (CS) admission to NICU was 17.70%, 5-min APGAR

< 5 was 2.18%, and complications in fetal outcome was 23.07%.<sup>2</sup> Compared to this, our study showed maternal complication rates of bladder and bowel injury 8%, uterine rupture 2%, blood transfusion 12%, ICU admission 19%, OH 2%, placenta accreta 2%, placenta previa 6%, and adhesion 28%. With respect to neonatal outcome, our study had 25% NICU admission and 5% IUFD rates. Therefore, our study has showed higher complication rates with respect to all aspects except uterine rupture. Abnormal placentation and placenta previa rates were also higher in our study.

In a study carried out by Kietpeerakool et al.,<sup>3</sup> a significant rise in the rates of placenta previa, morbid adherent placenta, uterine rupture, NICU admissions, preterm birth, and low birth weight in the previous 2 LSCS group.

Newer methods support programs, partogram, pain reduction with acupressure, intensive group therapy, and with proper pregnancy interventions and practices, caesarean section rates can be reduced promoting vaginal births.<sup>4</sup> It is important to reduce caesarean section rate in primigravidae to eventually reduce repeat caesarean section rates because more complications were noted in caesarean section, as shown by Sharma and Dhakal.<sup>5</sup>

If VBAC rates in previous one LSCS patients improve in tertiary care centers with proper safety precautions by experienced obstetricians, the number of patients with previous two LSCSs can decrease in turn reducing feto-maternal complications. Lower uterine segment (LUS) thickness measurement can be carried out in women undergoing VBAC after short birth interval to assess its safety. More than 12 months interval between the deliveries is not associated with increased chance of uterine rupture.<sup>6,7</sup> A recent study on improving VBAC rates by Gardner et al.<sup>8</sup> concluded that a dedicated VBAC clinic along with a team of dedicated high risk experienced obstetricians may improve VBAC attempt rates with the correct resources and emergency care in place.

## CONCLUSIONS

Increase in previous two LSCS rates along with its potential complications has occurred due to reduced VBAC rates and high caesarean section rate. In our study, we had no maternal mortality; however, increasing caesarean section rates is associated with increase in morbidity. Abnormal placentation is the major maternal risk in future pregnancies with its resulting hemorrhage and maternal morbidity and mortality. Hence one needs to think twice before advising caesarean section. Also, the caesarean section rates in primigravidae should be reduced along with mastering the art of normal vaginal delivery thereby reducing fetal and maternal complications.

## REFERENCES

1. WHO statement on caesarean section rate April 2015.
2. Zwergel C, von Kaisenberg CS. (2019). Maternal and fetal risks in higher multiple cesarean deliveries. In: Schmölzer G (Ed). *Recent Advances in Cesarean Delivery*. IntechOpen; 2019. DOI: 10.5772/intechopen.86334. <https://www.intechopen.com/chapters/67257>.
3. Kietpeerakool C, Lumbiganon P, Laopaiboon M, et al. Pregnancy outcomes of women with previous caesarean sections: Secondary analysis of World Health Organization Multicountry Survey on Maternal and Newborn Health. *Sci Rep* 2019;9(1):9748. DOI: 10.1038/s41598-019-46153-4.
4. Smith V, Gallagher L, Carroll M, et al. Antenatal and intrapartum interventions for reducing caesarean section, promoting vaginal birth, and reducing fear of childbirth: An overview of systematic reviews. *PLoS One* 2019;14(10):e0224313. DOI: 10.1371/journal.pone.0224313.
5. Sharma S, Dhakal I. Cesarean vs vaginal delivery: An institutional experience. *J Nepal Med Assoc* 2018;56(209):535–539. PMID: 30058639.
6. Kessous R, Sheiner E. Is there an association between short interval from previous cesarean section and adverse obstetric and perinatal outcome? *J Matern Fetal Neonatal Med* 2013;26(10):1003–1006. DOI: 10.3109/14767058.2013.765854.
7. Kok N, Wiersma IC, Opmeer BC, et al. Sonographic measurement of lower uterine segment thickness to predict uterine rupture during a trial of labor in women with previous Cesarean section: A metaanalysis. *Ultrasound Obstet Gynecol* 2013;42(2):132–139. DOI: 10.1002/uog.12479.
8. Gardner K, Henry A, Thou S, et al. Improving VBAC rates: The combined impact of two management strategies. *Aust N Z J Obstet Gynaecol* 2014;54(4):327–332. DOI: 10.1111/ajo.12229. Epub 2014 Jul 30. PMID: 25117188.