

**Original research article****A prospective study of fetal outcome in pregnancy with two or more previous LSCS at tertiary care centre in Vindhya Region in MP**

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**Abstract**

**Introduction:** Rising trend of Cesarean section is due to its ability to save life of mother and neonate instantly specially in developing countries like India. But this tempting procedure has its own perils down the time. As multiple c section cases are associated with various maternal and foetal complications. Various foetal complications associated with multiple csection are prematurity, low APGAR Score, increased chances of NICU admission. This prospective study was conducted to study the various foetal morbidity associated with multiple c section in a tertiary care hospital in Vindhya region of MP India.

**Method:** Prospective cross sectional study was conducted for 1 year from 1 march 2020 to 28 Feb 2021 at SSMC & Associated GMH Hospital REWA, MP.

**Result:** There were 100 cases of multiple c section meeting our inclusion and exclusion criteria in study period. Out of 100; 80 were previous 2 section and 20 were of previous 3 c section. Mean age of study population was  $28.31 \pm 3.29$  years (minimum 23 years, maximum 36 years, median 28 years). In our study foetal outcome was poor in cases with multiple C section. Mean birth weight was significantly lower in 3 previous LSCS group. In our study, mean APGAR score (1 min) and (5 min) was significantly lower in 3 previous LSCS group.

**Conclusion:** Multiple c section were associated with poor foetal outcome. Strict adherence to new ACOG labour guidelines, following robsons criteria for c section, trial of normal labour in previous C section cases are few strategies which can improve this bleak foetal outcome due to repeat C section.

**Keywords:** Cesarean section, foetal outcome, APGAR score

**Introduction**

Cesarean section (CS) is a foetal delivery process through an open abdominal incision (laparotomy) and an incision in the uterus (hysterotomy) <sup>[1]</sup>. CS can be a life-saving intervention for the foetus and mother, or both in certain circumstances including obstructed labour, distressed foetus, obstetric haemorrhage, abnormal presentation, and various other emergency obstetric conditions. An appropriate provision of CS can cause either maternal or neonatal deaths.

Cesarean section is most commonly performed abdominal operations on women in utmost countries. Current prevalence rate of caesarean section in the world is 18.6% and in India is 17.2% (NHFS 4). The incidence of primary LSCS is increasing all around the world, Consequently, there is rise in multiple repeat LSCS's with associated complications. Previous LSCS is one of common indication for repeat LSCS in either emergency or elective cases. Rising trend of Cesarean section is due to its ability to save life of mother and neonate instantly specially in developing countries like India. But this tempting procedure has its own perils down the time. As multiple c section cases are associated with various maternal and foetal complications. Various foetal complications associated with multiple c section are prematurity, low APGAR Score, increased chances of NICU admission. This prospective study was conducted to study the various foetal morbidity associated with multiple c section in a tertiary care hospital in Vindhya region of MP India.

It is known that multiple cesarean sections are associated with short- and long-term pitfalls for both the mother and the baby [4, 5, 6]. There are also neonatal risks: babies born via multiple reprise cesarean section are more likely to witness breathing difficulties and require admission to neonatal intensive care [5, 7, 8]. Although cesarean section is now safer than it has ever been ahead, there are some knowledge gaps, and there is uncertainty among numerous obstetricians about the risks involved in multiple cesarean sections, especially when the number exceeds two.

Primarily, we aimed at studying the influence of reprise caesarean section on fetal outcome in a tertiary centre.

**Material & Methods**

This study is a Prospective, cross-sectional hospital-based study. Study was undertaken in Department of Obstetric & Gynaecology in Gandhi Memorial Hospital, associated with Shyam Shah Medical College, Rewa (M.P.). Study duration was 1 year (From 1<sup>st</sup> March, 2020 to 28<sup>th</sup> February, 2021).

**Inclusion criteria**

1. Singleton pregnancy.
2. Patient with history  $\geq 2$  previous LSCS.
3. No history of any previous Gynaecological surgery.

**Exclusion criteria**

1. Multiple gestation.
2. H/o previous gynaecological surgeries.

**Results**

With respect to all inclusion and exclusion criteria total 100 cases were included in the study.

1. Mean age of study population was  $28.31 \pm 3.29$  years (minimum 23 years, maximum 36 years, median 28 years).

**Table 1:** Age group distribution of the study population

Age group	Number	Percentage
20 - 25 years	20	20%
26 - 30 years	56	56%
31 - 35 years	21	21%
36 - 40 years	3	3%

2. In our study, 55% women were in gravida 3 and 45% women were in gravida 4.

**Table 2:** Gravida of the study population

Gravida	Number	Percentage
3	55	55%
4	45	45%

3. In our study, 79% women were having parity 3 and 21% women were having parity 4.

**Table 3:** Parity of the study population

Parity	Number	Percentage
3	79	79%
4	21	21%

4. In our study, 80% women had two previous LSCS and 20% women had three previous LSCS.

**Table 4:** Previous LSCS of the study population

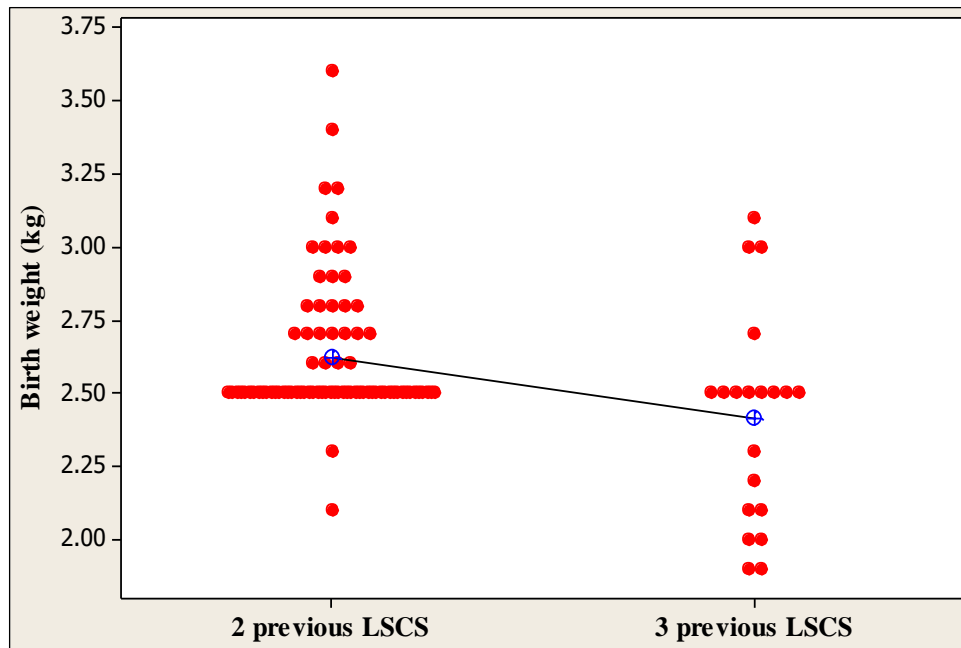
Previous LSCS	Number	Percentage
2	80	80%
3	20	20%

5. In our study, mean birth weight was significantly lower in 3 previous LSCS group.

**Table 5:** Comparison of mean birth weight according to number of previous LSCS

Birth weight	2 previous LSCS	3 previous LSCS
Mean (kg)	2.62	2.41
SD	0.24	0.35

p value 0.021, 2-sample t test



Graph 1: Individual value plots comparing birth weight according to number of previous LSCS

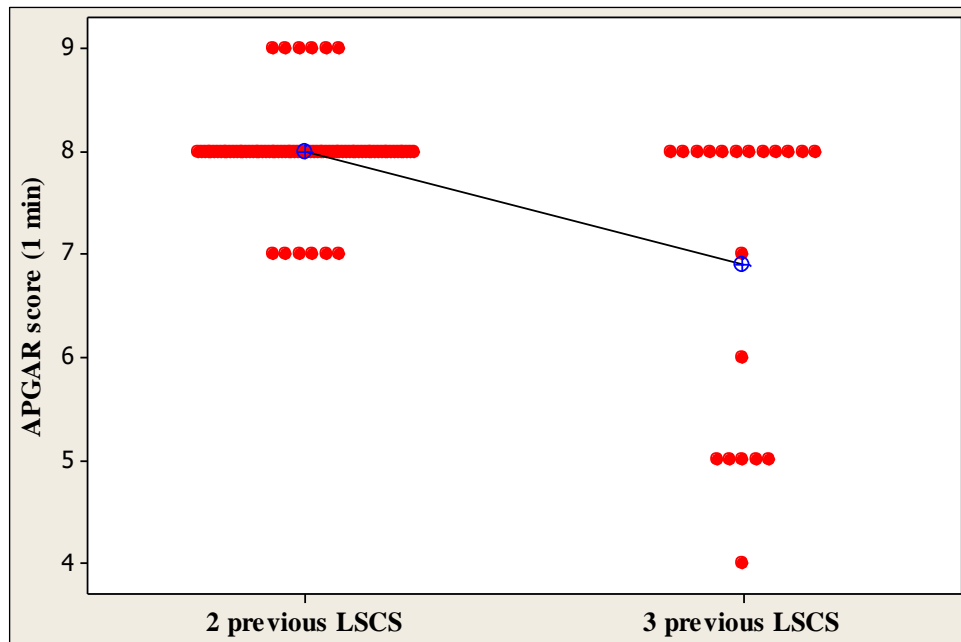
6. In our study, mean APGAR score (1 min) was significantly lower in 3 previous LSCS group.

Table 6: Comparison of mean APGAR score (1 min) according to number of previous LSCS

APGAR score (1 min)	2 previous LSCS	3 previous LSCS
Mean	8.00	6.90
SD	0.39	1.48

p value 0.004, 2-sample t test

7. In our study, mean APGAR score (5 minutes) was significantly lower in 3 previous LSCS group.

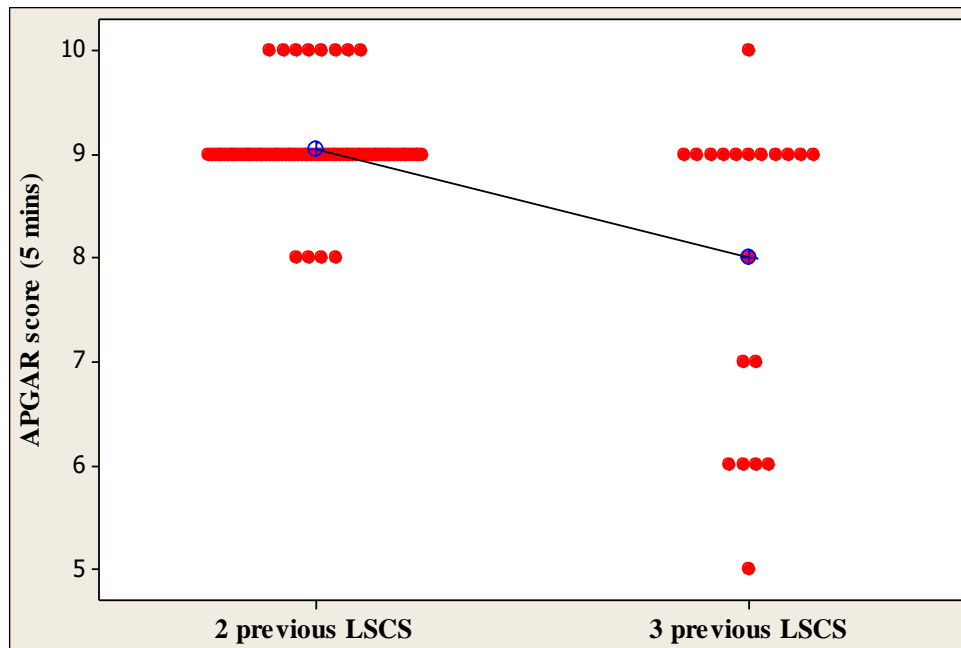


Graph 2: Individual value plots comparing APGAR score (1 min) according to number of previous LSCS

Table 7: Comparison of mean APGAR score (5 mins) according to number of previous LSCS

APGAR score (5 mins)	2 previous LSCS	3 previous LSCS
Mean	9.05	8.00
SD	0.39	1.49

p value 0.005, 2-sample t test



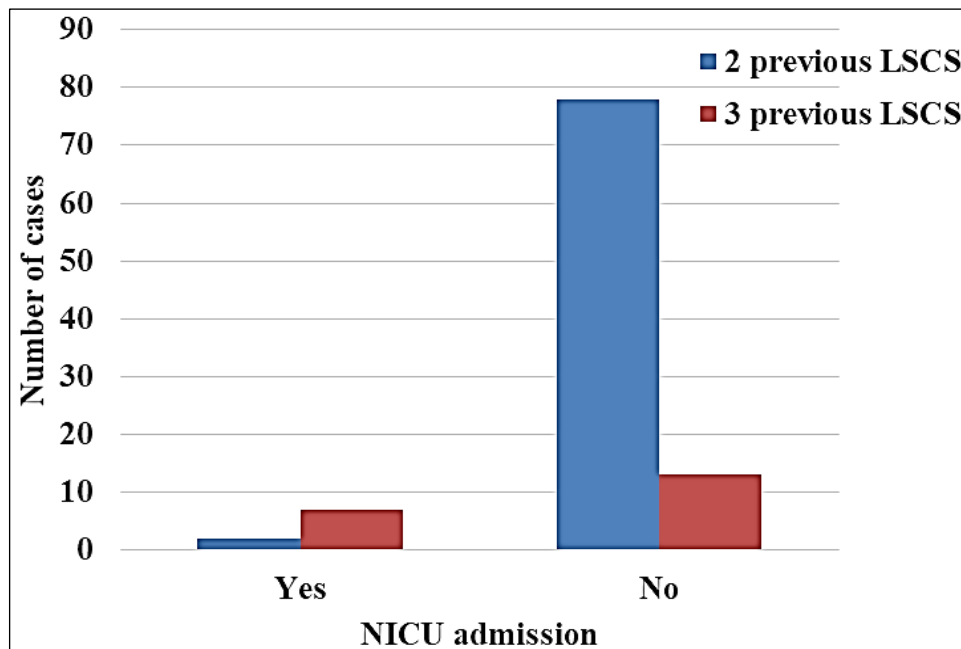
Graph 3: Individual value plots comparing APGAR score (5 mins) according to number of previous LSCS

In our study, NICU admission was significantly higher in 3 previous LSCS group.

Table 8: Comparison of NICU admission according to number of previous LSCS

NICU admission	2 previous LSCS (n=80)	3 previous LSCS (n=20)
Yes	2 (2.5%)	7 (35%)
No	78 (97.5%)	13 (65%)

P value <0.001, Chi-square test



Graph 4: Column chart comparing NICU admission according to number of previous LSCS

**Discussion**

The study was carried out among 100 women with history  $\geq 2$  previous LSCS and those with no history of any previous Gynaecological surgery. The present study was conducted to know the influence of repeat LSCS on fetal outcome in a tertiary centre in vindhya region.

Mean age of study population was  $28.31 \pm 3.29$  years (minimum 36 years, maximum 23 years, median 28 years). This corresponds to the observations made by Minsart *et al.*, (2013)<sup>[9]</sup> who studied pregnancy outcome of women with repeat c section in Chinese population. In our study, 80% women had two previous LSCS and 20% women had three previous LSCS. This is due to the fact that in the current

scenario maximum number of parents wish to have a nuclear family and limited number of children i.e. 2 or 3 which can be taken care of in a better way.

In our study, mean birth weight was significantly lower in 3 previous LSCS group. Mean APGAR score was significantly lower in 3 previous LSCS group. NICU admission was significantly higher in 3 previous LSCS group.

Gasim T, *et al.*,<sup>[10]</sup> conducted a retrospective case-control study in which preterm birth ( $p = 0.0497$ ) and Apgar scores  $< 7$  at 5 minutes ( $p = 0.0140$ ) were significant in the repeat LSCS group. There was no significant difference in NICU admissions.

Ganiga P, *et al.*,<sup>[11]</sup> observed that the incidence of poor APGAR respiratory distress, NICU admission was not significantly increased.

Vishwakarma K, *et al.*,<sup>[12]</sup> observed post op neonatal complications were significantly more in repeat caesarean section group. This study concluded that fetal morbidity and mortality due to trial of labor is comparable with the women laboring without a scar, trial of labour may be encouraged.

Similar results were obtained by Jinturkar *et al.*, (2014)<sup>[13]</sup> in their study in which NICU admissions were more in repeat LSCS group(2.12%) than the VBAC group (0.3%).

Loebel *et al.*, (2004)<sup>[14]</sup> also found that the neonatal morbidity and mortality after multiple c section. NICU admission was seen in 2.8% cases in repeat c section cases and in 1.1% cases in VBAC. Perinatal death was seen in 2.1% cases of repeat c section.

### Conclusion

In this prospective, cross-sectional hospital-based study, 80% women had two previous LSCS and 20% women had three previous LSCS .Multiple c section were associated with poor foetal outcome. Mean birth weight, mean APGAR score were significantly lower in 3 previous LSCS group. NICU admission was significantly higher in 3 previous LSCS group in comparison to 2 previous LSCS group. Only way to reduce this significantly higher foetal morbidity in multiple c section cases is by reducing incidence of primary c section .Strict adherence to new ACOG labour guidelines, following robsons criteria for c section, trial of normal labour in previous c section cases are few strategies which can improve this bleak foetal outcome due to repeat c section.

### References

1. Molina G, *et al.*, Relationship between Cesarean Delivery Rate and Maternal and Neonatal Mortality. JAMA. 2015;314:2263-2270. Doi: 10.1001/jama.2015.15553.
2. Thomas S, Meadows J, McQueen KA. Access to Cesarean Section Will Reduce Maternal Mortality in Low-Income Countries: A Mathematical Model. World J Surg. 2016;40:1537-1541. Doi: 10.1007/s00268-016-3479-0.
3. Villar J, *et al.*, Caesarean delivery rates and pregnancy outcomes: the 2005 WHO global survey on maternal and perinatal health in Latin America. Lancet. 2006;367:1819-1829. Doi: 10.1016/S0140-6736(06)68704-7.
4. Lumbiganon P, *et al.*, Method of delivery and pregnancy outcomes in Asia: the WHO global survey on maternal and perinatal health 2007-08. Lancet. 2010;375:490-499. Doi: 10.1016/S0140-6736(09)61870-5.
5. Souza JP, *et al.*, Caesarean section without medical indications is associated with an increased risk of adverse short-term maternal outcomes: the 2004-2008 WHO Global Survey on Maternal and Perinatal Health. BMC Med. 2010;8:71. Doi: 10.1186/1741-7015-8-71.
6. Motomura K, *et al.*, Incidence and outcomes of uterine rupture among women with prior caesarean section: WHO Multicountry Survey on Maternal and Newborn Health. Sci. Rep. 2017;7:44-093. Doi: 10.1038/srep44093.
7. Silver RM. Abnormal Placentation: Placenta Previa, Vasa Previa and Placenta Accreta. Obstet Gynecol. 2015;126:654-668. Doi: 10.1097/AOG.0000000000001005.
8. Marshall NE, Fu R, Guise JM. Impact of multiple cesarean deliveries on maternal morbidity: a systematic review. Am J Obstet Gynecol. 2011;205(262):e261-268. Doi: 10.1016/j.ajog.2011.06.035.
9. Minsart AF, Liu H, Moffett S, Chen C, Ji N. Vaginal birth after caesarean delivery in Chinese women and Western immigrants in Shanghai. J Obstet Gynaecol. 2017;37(4):446-9.
10. Gasim, *et al.*, Multiple repeat cesarean sections: operative difficulties, maternal complications and outcome. J Reprod Medicin July-Aug;58(7-8):313-8.
11. Ganiga P, *et al.*, A prospective study of maternal and fetal outcome in repeat LSCS mother Int. J Reprod Contracept Obstet Gynecol. 2019 Apr;8(4):1327-1330.
12. Vishwakarma, Yadav, Waddar. Indian Journal of Obstetrics and Gynecology Research 2020;7(3):308-314.
13. Jinturkar AA, Dongaonkar D. Study of obstetric and fetal outcome of post caesarean section pregnancy at tertiary care center. Int. J Recent Trends Sci. Technol. 2014;10(3):530-7.
14. Loebel G, Zeloff CM, Egan JFX, Wax J. Maternal and neonatal morbidity after elective repeat

Cesarean delivery versus a trial of labor after previous Cesarean delivery in a community teaching hospital. J Maternal-Fetal Neonatal Med. 2004;15(4):243-6.