



COMPLICATIONS AND PERINATAL OUTCOMES OF CESAREAN DELIVERY IN A TERTIARY CARE HOSPITAL IN GHAZIABAD: A CROSS SECTIONAL STUDY

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ABSTRACT

Introduction: The prevalence of Cesarean section (CS) associated complications increase with each additional Cesarean. With this background, this study was planned to analyse various intra-operative complications and perinatal outcome in caesarean deliveries and to determine their association with repeat CS.

Methodology: The present study was cross sectional study conducted over a period of 6 months from August 2019 to February 2020. All subjects who underwent delivery in Santosh medical college and hospital during the study time were recruited in the study and their mode of delivery was noted. Subjects undergoing cesarean section were observed for Intraoperative and Postoperative complications. Perinatal outcome was also noted. Frequencies were calculated for different variables. Data was analyzed and p value of <0.05 was taken significant.

Results: Total labour patients presenting in the Department of Obstetrics and Gynaecology in the study period from August 2019 to February 2020 were 404. Out of these 172(42.5%) delivered by caesarean section. The patients who underwent primary LSCS were 82(50.6%), secondary 58 (35.8%) and tertiary 22 (13.5%). Increased blood loss, increased surgery time, adherent placenta, thick LUS, adhesions and thin LUS were present more in repeat CS group and were statistically significant.

Conclusions: With repeat CS, prevalence and severity of complications increase. It is the responsibility of the obstetricians to avoid unnecessary primary cesarean sections.

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INTRODUCTION

The World Health Organization (WHO) recommends 10-15% of deliveries by Cesarean section [1], but the rates range from 3% to 29% globally. [2]. This increase is mainly due to liberalisation of caesarean sections by obstetricians. This is attributed to increase in maternal request and the fear of litigations. Although with the improvement in the antibiotic therapy and bloodbanking techniques, caesarean section is safest and most commonly performed obstetric procedures[3]. Though there has been a marked improvement in the obstetric care because of better caesarean techniques, there has been an increase in incidence of repeat caesarean sections. With increasing number of CS, serious adverse effects are reported like adhesion formation leading to difficult dissection, major bleeding and visceral injury. In addition, future pregnancies may be complicated by uterine scar rupture with adverse perinatal consequences [4,5]. Especially with an emergency (repeat) CS, these often unexpected difficulties can result in adverse perinatal and maternal outcomes such as birth asphyxia and maternal exhaustion. [6]

With this background, this study was planned to analyse various intra-operative complications and perinatal outcome

in caesarean deliveries and to determine their association with repeat caesarean sections.

METHODOLOGY

The present study was a cross sectional study conducted over a period of 6 months from August 2019 to February 2020. Consent was taken from the study subjects and the purpose of the study was explained to them. All subjects presenting to the Department of Obstetrics and Gynaecology and undergoing caesarean delivery were recruited in the study. These subjects were further grouped into those undergoing primary and repeat caesarean sections. Ethical clearance was taken from the institutional ethical committee.

The data was collected using pretested questionnaires. Pre-operatively the patients were interrogated regarding the socio-demographic data (age, marital status, education level), medical and obstetric history. The obstetric history was taken in detail focusing on her previous pregnancies and deliveries, indication and number of previous caesarean sections, any complications during and after surgery and post operative period. Their socio demographic profile, Obstetric history, indications for caesarean section, intra operative and postoperative complications were studied. Perinatal outcome

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was also seen. All study participants were followed-up till discharge.

Reporting was according to STROBE guidelines [7].

Intra operative outcomes obtained were surgery time (skin incision to skin closure), intraoperative blood loss, difficulty in delivery of the baby, Apgar scores at 5 min (<7 or ≥7), and need for neonatal intensive care unit (NICU) admission.

Postoperative outcomes included the length of the hospital stay, occurrence of wound infection, UTI, secondary hemorrhage, Blood transfusion and Paralytic ileus.

The observations were tabulated and proportions were calculated. Statistical analysis was done using chi square test and students t Tests where applicable and the level of statistical significance was determined at $p < 0.05$.

RESULTS

Total labour patients presenting in the Department of Obstetrics and Gynaecology in the study period from August 2019 to February 2020 were 404. Out of these 172(42.5%) delivered by caesarean section (CS) and rest delivered vaginally (232). Ten patients who underwent LSCS were excluded from the study in view of incomplete data .Out of the CS performed 90 (55.5%) were done as an emergency procedure and the remaining were done electively. The number of unbooked cases were 74(45.6%). The patients who underwent primary CS were 82(50.6%), secondary 58 (35.8%) and tertiary 22 (13.5%). Table 1 demonstrates the sociodemographic data classified on the basis of the number of previous LSCS.

Table 1 Sociodemographic Details of the Study Group (n=162)

Variable	Primary(n=82)	Secondary(n=58)	Tertiary(n=22)
Age(years)	<20	4	0
	21-29	64	36
	≥30	14	22
Education	Illiterate	18	18
	Primary	24	20
	Secondary	40	20
Socioeconomic status	Low	28	16
	Middle	46	38
	Upper	8	4
Family Structure	Joint	24	18
	Nuclear	58	40
Parity	1 gravida	42	0
	2gravida	26	38
	>2 gravida	14	20
Antenatal	Booked	40	34
	Unbooked	42	24

Chart 1 denotes that majority of indication for primary LSCS comprised of fetal distress (n=27) and CPD(n=24) whereas CPD(n=19)and reduced scar thickness (n=16) formed the bulk of repeat LSCS.

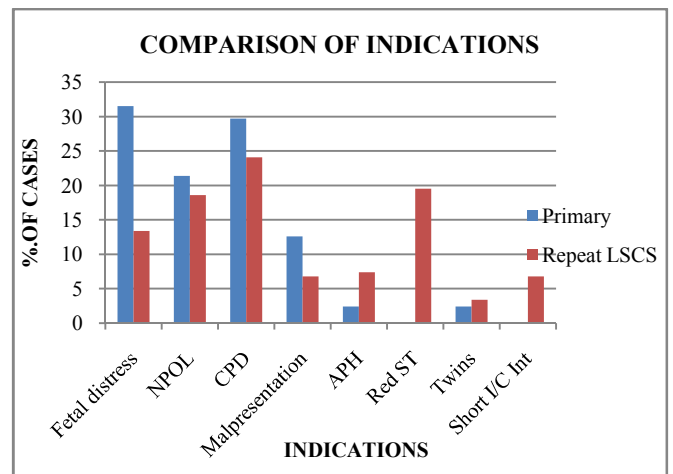


Chart 1 Indications of CS in The Primary (n=82), Repeat CS (n=80)

Table 2 depicts that increased blood loss, increased surgery time, adherent placenta, thick LUS, adhesions and thin LUS were present more in repeat CS group and were statistically significant. The mean surgery time (from skin incision to completion of skin sutures) was 35.2 ± 2.3 minutes, the range being 22 minutes to 45 minutes for primary LSCS whereas for repeat LSCS it was 46.2 ± 3.3 minutes the range being 32 minutes to 65 minutes. The results were found to be statistically significant ($p < 0.0001$).

Table 2 Comparison of Complications in Primary V/S Repeat CS

Variable	Primary (%)	Repeat LSCS (%)	p value
Blood loss	44	65.5	0.0062
Difficult Delivery	29.2	22.4	0.32
Increased surgery time	7.3	36.2	<0.0001
Adherent placenta	1	12.5	0.003
Thick LUS	58.5	30	0.0003
Thin LUS	7.3	35	0.0001
Atonic PPH	12.1	8.7	0.48
Adhesions	3	62.7	<0.0001

Table 3 shows comparison of Post-operative morbidity in the both groups. Average hospital stay was 5.2 ± 2.1 days in the primary group whereas it was 8.4 ± 1.2 days in the repeat caesarean section group. In Primary group 28.9% had postoperative morbidity whereas 79.7% of repeat LSCS suffered from postoperative complications which was statistically significant ($p < 0.0001$). Most common morbidity in the primary LSCS group was UTI followed by fever and anemia whereas anemia and secondary hemorrhage were the main morbidities in the repeat section group which were statistically significant .

Table 3 Comparison of Postoperative Complications In Primary (n=82), Repeat LSCS

(n=80)

Complication	Primary (%) n=82	Repeat LSCS (%) n=80	P value
Fever	15.6	11.9	0.49
UTI	17.6	5.9	0.02
Stitch line sepsis	3.7	5.1	0.66
Anemia	15.6	33.5	0.008
Sec hemorrhage	1.2	4.8	0.17
Paralytic ileus	19.5	21.3	0.77
Blood transfusion	3.6	2.1	0.56
Pain	21.5	73.8	<0.0001

Neonatal outcome was not significantly different in the groups (Table 4)

Table 4 Comparison of Perinatal Outcome in Primary (n=82), Repeat LSCS (n=80)

Perinatal outcome	Primary n=82	Repeat LSCS n=80
Apgar score <7	2	3
NICU Admission	10	12

DISCUSSION

In present study, cesarean section (CS) rate is 42.5%. Of which 49.3% of the study subjects were cases of repeat CS and 55.5 % were emergency sections. Non progress of labour and Cephalopelvic disproportion (CPD) formed the major indications followed by fetal distress. Approximately half the patients were unbooked as our centre is a referral centre hence more number of emergency caesarean sections.

Though Caesarean section is one of the most frequently performed abdominal surgery, it is not without complications. In the present study it was found out that the intraoperative and post operative complications were more in the repeat caesarean section group. Also the mean surgery time was more in the repeat caesarean section group which was similar to other studies. Presence of adhesions contribute to such complications which not only increase the operative time, but also have long term sequelae like pain and discomfort. Presence of severe adhesions may sometime lead to injury to the nearby organs. In the current study, there was no visceral injury probably because such complicated cases were done by senior obstetricians.[8]

In the present study, there was an increased incidence of thinning of lower uterine segment in the repeat section group leading to scar dehiscence which was statistically significant. This finding is similar to others [9,10] but some studies negated this finding. [11]. All cases with the finding of thinning of lower segment of uterus were also from emergency CS group. This establishes the importance of proper counselling and planning of elective CS before starting labour.

Similar to other studies, there was no significant difference in the neonatal outcome. In contrast Seidman *et al.* [5] described significant association between low Apgar scores and repeat CS.

The present study also did not show any significant correlation as regards to minor morbidities such as urinary tract infection and chest infection in the post operative period.

There were a few limitations in the current study. Firstly the sample size was small and a larger scale studies are recommended to verify these findings. Secondly the patients were studied only while they were in hospital. The patients need to be followed up even after their discharge to study the longterm sequelae of the caesarean section.

CONCLUSION

Although not life threatening, repeat CS are associated with short term and long term morbidity. Hence it is the duty of the treating obstetrician to counsel the patient regarding various complications and to avoid as many caesarean sections as possible..

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References

- Betran AP, Torloni MR, Zhang J, *et al.* WHO Statement on Caesarean Section Rates. Geneva, 2015. BJOG. 2016;123:667–70. [PMC free article] [PubMed]
- Betrán AP, Meriáldi M, Lauer JA, Bing-Shun W, Thomas J, Van Look P, *et al.* Rates of caesarean section: analysis of global, regional and national estimates. *Paediatr Perinat Epidemiol.* 2007;21:98–113. doi: 10.1111/j.1365-3016.2007.00786.x. [PubMed] [CrossRef]
- Johnson DD. Caesarean Delivery. Gilstrip III CL, Cunningham GF, Vandorstrom JP (Editors). In: *Operative nd obstetrics.* 2 Edition; McGraw Hill Publishers. 2002:257-73.]
- Uygun D, Gun O, Keleki S, Ozturk A, Ugur M, Mungan T. Multiple repeat caesarean section: is it safe? *Eur J Obstet Gynecol Reprod Biol.* 2005;119:171–175. [PubMed]
- Seidman DS, Paz I, Nadu A, Dollberg S, Stevenson DK, Gale R, *et al.* Are multiple cesarean sections safe? *Eur J Obstet Gynecol Reprod Biol.* 1994;57:7–12. [PubMed]
- Molina G, Weiser TG, Lipsitz SR, Esquivel MM, Uribe-Leitz T, Azad T, *et al.* Relationship Between Cesarean Delivery Rate and Maternal and Neonatal Mortality. *JAMA.* 2015;314:2263. doi: 10.1001/jama.2015.15553. [PubMed] [CrossRef]
- von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *J Clin Epidemiol.* 2008;61:344–9. [PubMed]
- Juntunen K, Makarainen L, Kirkinen P. Outcome after a high number (4-10) of repeated caesarean sections. *BJOG.* 2004;111:561–563. [PubMed]
- Kirkinen P. Multiple caesarean sections: outcomes and complications. *Br J Obstet Gynaecol.* 1988;95:778–782. [PubMed]
- Qublan HS, Tahat Y. Multiple cesarean section. The impact on maternal and fetal outcome. *Saudi Med J.* 2006;27:210–214. [PubMed]
- Ojo VA, Okwerekwu FO. A critical analysis of the rates and indication for caesarean section in a developing country. *Asia-Oceanic. J Obstet Gynaecol.* 1988; 14:185-93.
- Ramkrishnarao MA, Popat GH, Eknath BP, Panditrao SA. Intra-operative difficulties in repeat caesarean section: a study of 287cases. *J Obstet Gynecol India.* 2008; 58:507-10.
- Victoria N, Shlomi B, Barnett GO. Maternal complications associated with multiple caesarean deliveries. *Obstet Gynecol.* 108(1):21-6.
