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Original Research Article

Fetomaternal outcomes in patients undergoing cesarean after previous 1 or more cesarean section at Government Medical College, Saharanpur

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ABSTRACT

Background: There is an increase in trend of caesarean section in most countries worldwide, resulting in the rise of multiple repeat cesarean sections which is known to be associated with increase in maternal and perinatal morbidity and mortality rates. We decided to study the various fetomaternal outcomes in patients undergoing caesarean section at our institution.
Methods: This prospective study was carried out in department of obstetrics and gynecology, Government Medical College, Saharanpur (UP) over a period of 14 months. All patients undergoing caesarean section for various indications at Government Medical College, Saharanpur with previous one or more caesarean section were included. History taking and examination was done. Maternal and fetal outcomes were noted.
Results: Over a span of 14 months (September 2023 - December 2024), out of total 240 cesarean deliveries, 139 patients had at least 1 prior LSCS. Of these, 62.58% were emergency cases, and 37.43% were elective. 42.44% were aged 26-30 years, with only one patient over 40 years. 38.13% were gravida 2. Most common indication was short interpregnancy interval in 15.10%. Most frequent intra operative complication was adhesions in 31.65%. 8 cases with previous 1 LSCS needed NICU admission.
Conclusions: With rise in repeat cesarean section there lies increase in maternal and fetal risks. Hospitals should conduct cesarean audits to reduce primary cesarean section rates, promote trial of labor after cesarean (TOLAC) for successful vaginal birth after cesarean (VBAC), and counsel patients on vaginal birth after cesarean (VBAC) risks and benefits to reduce repeat c-sections and complications.

Keywords: Cesarean section, Feto-maternal outcome, Previous c-section

INTRODUCTION

Cesarean section, c-section or cesarean birth is the surgical delivery of a baby through an incision made in the abdomen and uterus. Cesarean section is usually performed when a vaginal birth poses risk to the mother or baby or when complication arises during labor. Common indications these days for doing cesarean delivery include fetal distress, malpresentation, cephalopelvic disproportion (CPD) and previous cesarean delivery. In modern obstetric though cesarean deliveries are considered relatively safe, not to forget they are major surgeries and carry risk such as infection, bleeding and longer recoveries and increased morbidity compared to vaginal birth. The World Health Organization (WHO) has stated that cesarean section should be undertaken only when indicated for the need of the patient. It also states that cesarean deliveries when performed in an institution that lacks the proper protocols for the safe surgery, carries an increased rate of complication.[1]

The major reasons for the rise of cesarean section rate being less trial of labor in previous cesarean cases, early decision of repeat cesareans due fear of litigation and these days it has been observed that there is an increase in patient reluctance towards vaginal birth after repeat cesarean due to fear of uterine scar rupture.

Henceforth, the prime goal of this study is to analyze the maternal and fetal risks associated with cesarean deliveries. So, that we can counsel the patients and inform them about the pros and cons of repeat surgery vs trial of labor in cesarean, enabling them to take an informed decision. So, that we can reduce the repeat cesarean section rate.

Aims and objectives

To analyse the maternal and fetal outcomes in patients undergoing caesarean section with previous 1 or more LSCS. To analyse the intraoperative complications in patients undergoing repeat caesarean section. To study maternal morbidity associated with previous caesarean section.

METHODS

This prospective study was carried out in department of obstetrics and gynecology, Government Medical College, Saharanpur (UP) over a period of 14 months from September, 2023 to December, 2024. All patients undergoing cesarean section for present pregnancy with previous one and more cesarean section are included. Complete history taking and follow up was done. Maternal and fetal outcomes were noted.

Inclusion criteria

All patients undergoing repeat caesarean section for different indications with history of at least 1 previous LSCS. Previous one and more LSCS were also included in the study.

Exclusion criteria

Patients with previous history of classical C-section, hysterotomy and myomectomy and those who are not giving consent for study were excluded. The sample size was calculated by a single population proportion formula by considering a 27.6% proportion of cesarean delivery prevalence, a 5% marginal error and a confidence interval of 95%. With the addition of a 10% contingency of incomplete cards, the yielded sample size was 250. The results were analyzed with SPSS statistical software version 17.0.

RESULTS

The study was conducted over a period of 14 months, from September, 2023 to December, 2024 in the institution. A total of 240 cesarean deliveries were carried out.

Table 1: Number of cases.

Number of LSCS	Cases	Percentage
1	84	60.43
2	38	27.33
3	12	8.633
>3	5	3.59

Amongst which previous 1 or more LSCS were 139, out of which 52 (62.58%) had cesarean in emergency 87 (37.43%) had elective LSCS.

Table 2: Number of LSCS in different age group.

Age (in years)	Total cases	Percentage
20-25	47	33.81
26-30	59	42.44
31-35	28	20.14
36-40	4	2.87
>40	1	0.71

The demographic profile of the patients was analyzed and it was found that 59 out of 139 (42.44%) were in the age group 26-30 years whereas only 1 patient was above 40 years of age, as in the Indian population, they avoid planning pregnancy beyond 40 years.

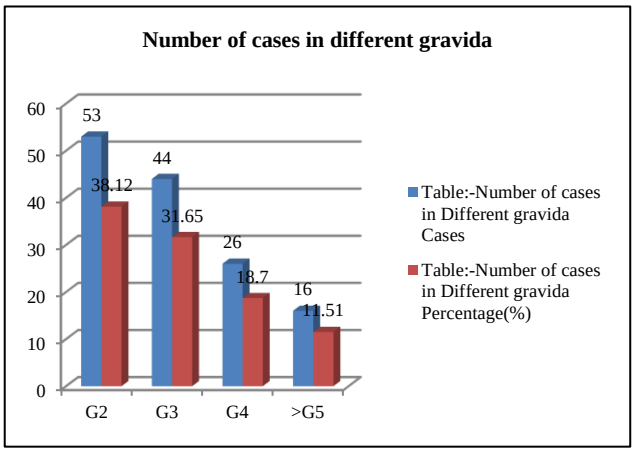

Figure 1: Number of cases in different gravida.

Maximum patients in the study were gravida 2 (38.13%) followed by gravida 3 (31.65%), followed by gravida 4 (18.70%) and lastly (11.51%) were gravida 5 and more. 40.28% (56 out of 139) belongs to Hindu religion, 58.99% (82 out of 139) belongs to Muslim religion and 1 patient was from Sikh community (0.72%).

As evident by Table 3, the most common indication for cesarean section in our study was short interpregnancy interval that reflects poor contraceptive advice in primary cesarean sections. As most of the patients were referred patients. In our study PPIUCD was inserted in 49 cases (36.80%) and tubal ligation was done in 33 cases (24.80%) and remaining 60 patients refused the consent for PPIUCD and tubal ligation.

Table 3: Indications for LSCS.

Indications	Previous 1 LSCS	Previous 2 LSCS	Previous 3 LSCS	Total	Percentage
Short interpregnancy interval	21	0	0	21	15.10
Fetal distress	15	4	1	20	14.38
Impending uterine rupture	14	4	2	20	14.38
Refusal for trial of labor	11	0	1	12	8.63
CPD	5	0	2	7	5.03
Maternal request	5	0	0	5	3.59
Contracted pelvis	1	0	0	1	0.71
Malpresentation	0	1	6	7	5.03
Breech presentation	3	2	0	5	3.59
APH (abruptio placenta)	1	1	0	2	1.43
Low lying placenta	1	1	0	2	1.43
Placenta previa	0	1	0	1	0.71
Placenta increta	0	2	0	2	1.43
PIH	1	2	0	3	2.15
Preterm labor	1	0	0	1	0.71
Obstructed labor	1	0	0	1	0.71
IUGR	1	0	0	1	0.71

Table 4: Perioperative complication.

Intra-operative complications	Previous 1 LSCS (no. of cases)	Previous 2 LSCS (no. of cases)	Previous 3 and more LSCS (no. of cases)	Total (no. of cases)	Percentage
Adhesions	27	12	5	44	31.65
Thinned out LUS	14	5	2	21	15.10
VU fold obliterated	3	2	2	7	5.03
Cesarean hysterectomy		2		2	1.44
Adherent bladder	1	2	0	3	2.15

Important perioperative complication was adhesions seen in 31.65%. In our study cesarean hysterectomy was done in 2 patients due to placenta accreta.

30.21% of patients experienced post-op complications, of which 10.07% had erosangious discharge, of which 1.43% had wound dehiscence. 1.43% had postpartum hemorrhage, 32.37% required blood transfusion (Table 5).

As far as perinatal outcome, 9.35% babies were referred to NICU; the most common indication for referral was respiratory distress. 2.16% had intrauterine deaths.

Table 5: Post-operative complication.

Intra-operative complications	Total	Percentage
Serosanguinous discharge	14	10.07
Abdominal distension	4	2.88
Breast engorgement	3	2.16
Wound dehiscence	2	1.44
Need for ventilator support	2	1.44
Postpartum hemorrhage	2	1.44
Urinary tract infection	2	1.44

Table 6: Fetal outcome.

No. of Previous LSCS	Previous 1 LSCS (no. of cases)	Previous 2 LSCS (no. of cases)	Previous 3 or more LSCS (no. of cases)	Total	Percentage
Bedside	75	32	16	123	88.48
NICU	8	4	1	13	9.35
IUD	1	1	1	3	2.15

DISCUSSION

It is a matter of great concern that there has been significant increase in numbers of cesarean delivers these days due to various reasons. This leads to increase in patients who come in successive pregnancy with cesarean scar. Previous cesarean section is the most common indication for repeat cesarean section.[2] Repeat surgical delivery leads to various intraoperative complications like scar dehiscence, abdominal wall adhesions, bladder adhesions, postpartum hemorrhage, placenta previa, placenta accreta and cesarean hysterectomy. We must be more vigilant in case selection and should try to encourage patients to go for VBAC.

The most common intraoperative complication observed was adhesions in 37.41%. Nazaneen et al reported adhesions in 34.76%, dense adhesions in 12%, Anargha et al reported in 39.99%, Singh et al 26.92% (21 in 78 cases).[3-5]

In a study carried out by Kietpeerakool et al a significant rise in the rates of placenta previa, morbid adherent placenta, uterine rupture, NICU admission in previous 2 LSCS group was noted.[6] Incidences of placenta previa were 0.719% and placenta accreta were 1.44%.

Nazaneen et al reported placenta previa 4.3% anterior placenta accreta 2.46% Singh et al reported 3% and 0.5% respectively.[3,5]

Incidences of cesarean hysterectomy in our study were 1.44%. Singh et al reported 1.5%, Nazaneen et al reported 1.53%.[3,5] The incidence of thinned out scar was seen in 3.32% and scar dehiscence in 1.06%. Rao et al found intraoperative adhesions of varying degrees in 73 out of 287 cases (25.4%). The adhesions in the presented study were more (31.65%) in comparison.[7] In this study preterm cesarean sections were done for 14.39% cases. According to Nazaneen et al preterm cesarean section was done in 18.15%.[3] Singh et al reported 8% preterm cesarean section.[5]

In the present study, number of women who underwent elective repeat cesarean section were 37.43% and emergency repeat cesarean section were 62.58%.

In study by Shalini et al reported 7.7% babies of elective CS and 17% in emergency CS babies admitted to NICU.[8] In study by Zwergel and von Kaisenberg admission to NICU was 17.70%, in 3rd CS 5 minutes. Apgar score <5 was 2.18% and fetal complications were 23.07%.[9] Akansha et al reported perinatal morbidity requiring NICU admission for 6.4%.[10] In this study, 5.76% (3 out of 52) babies of elective LSCS were admitted to NICU and 11.49% (10 out of 87) of emergency LSCS were admitted to NICU.

Number of VBAC were less in our study as most of the patients were referred in from various centers in emergency and duration of the study period also might have affected our study results.

Table 7: Comparison of elective and emergency repeat CS with other studies.

Author	Elective repeat CS %	Emergency repeat CS %
Nazaneen et al[3]	47.04	52.92
Vikas et al[11]	11.1	13.7
George et al[12]	35.7	9.8
Sharma et al[13]	30.39	42.15
Anagha et al[4]	55.75	44.25
Akanksha et al[10]	64.9	35.05
Chiniwar et al[2]	56.26	10.19
Present study	37.4	62.5

Table 8: Comparison of perioperative complications with other studies.

Study	Thinned out scar	Scar dehiscence	Scar rupture	Ruptured uterus
Nazaneen et al[3]	18.46	7.69	0.3	-
Nazlima et al[14]	23.13	3.33	0.3	1.1
Singh et al[5]	-	7.69	-	-
Anagha et al[4]	-	2.75	-	-
Akanksha et al[10]	-	7.4	-	1
Chiniwar et al[2]	3.32	0.73	-	1.21
Present study	-	1.43	-	-

CONCLUSION

The overall maternal and fetal risks are increased in repeat cesarean. There should be proper cesarean audits to reduce primary cesarean sections and hospitals should adopt policies to improvise trial of labor after cesarean section for successful VBAC. Patient should be counselled and informed about the statistics and apprehensions related to VBAC. So that there can be decrease in repeat cesarean sections thereby reducing maternal and fetal complications.

Recommendations

Every institution should maintain a policy for reducing primary cesarean section rates by doing regular cesarean audits, as a reduction in the number of primary cesarean section there will be a further reduction in repeat cesarean sections. Proper antenatal care, previous scar thickness measurement on USG and ruling out placenta accreta should be strictly followed and correction of anemia in antenatal period should be done beforehand. Patient should be motivated to adopt contraception following first cesarean delivery so that proper interpregnancy interval is maintained to give proper TOLAC in successive pregnancies with proper case selection and prior counselling.

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