

Intra-Operative Difficulties and Complications in Repeat Cesarean SectionShruti Tailor¹, Vijyeta Jagtap², Kuldeep Rathod³, Ragini Verma⁴¹Senior Resident, Department of Obstetrics and Gynaecology, Government Medical College, Surat²Assistant Professor, Department of Obstetrics and Gynaecology, Government Medical College, Surat³Government Medical College, Surat⁴Professor and Head, Department of Obstetrics and Gynaecology, Government Medical College, Surat

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Conflict of interest: Nil

Abstract**Objective:** To study the intra-operative difficulties and complications in women undergoing Repeat Cesarean section.**Methods:** An observational study was conducted collecting data from medical records of around 300 consecutive consenting subjects undergoing repeat CS in one unit in a tertiary care centre over a period of May 2019 to November 2020 after HREC approval.**Results:** In our study, adhesions were encountered in 22% of subjects. While opening anterior abdominal wall, adhesions were encountered between Rectus muscle and sheath in 14% of subjects and between Omentum and parietal peritoneum in 8% of subjects. 2.33% of subjects had dense adhesion between bladder and uterus. Placenta previa was noted in 2.67% of subjects, out of which 1.67% had morbidly adherent placenta.**Conclusion:** Although morbidity related to Caesarean section has reduced markedly over the decades, there is still a definite risk associated with the surgical procedure.**Keywords:** Intra-operative difficulties, Repeat CS

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Introduction

Cesarean section rates at population level in India is 17.2% (NHFS-4 -2015-2016)[1]. Consistent increase in Cesarean section rates have been noted in developed as well as developing Countries for multifactorial reasons. Scarring and adhesion formation is an important sequelae of any abdominal and pelvic surgery. With subsequent Cesarean Section, there is increased risk of encountering adhesions, morbidly adherent placenta, extension of uterine incisions, possibility of bowel or bladder injuries, need for blood transfusion, longer hospital stays, and sometimes even hysterectomy.

Aims and Objectives: To study intra-operative difficulties and complications in women undergoing Repeat Cesarean section in a tertiary care centre of South Gujarat.

Materials and Methodology

An observational study was conducted collecting data from medical records of 300 consecutive consenting subjects undergoing repeat Cesarean section in a tertiary care centre over a period of May 2019 to November 2020 after Ethics Committee approval.

Inclusion criteria:

- Pregnant women with previous one Cesarean section undergoing Repeat CS.

Exclusion criteria:

Pregnant women with

- Previous two or more Cesarean sections.
- Previous Classical Cesarean section.
- Past history of any other abdominal or pelvic surgery.

All consecutive eligible consenting subjects were explained regarding the study including the aims, objectives of the study and a written consent was taken for their enrolment in the study. Prior to surgery, all baseline parameters, clinical examination and findings of subjects were noted. During the Cesarean section, their intraoperative findings with respect to abdominal wall adhesions, bladder adhesions, presence and grading of scar dehiscence/rupture, amount of blood loss, extension of uterine incision and adhesions to other structures like bowel/bladder was noted. All details were noted in the proforma and data entry and analysis were done according to SPSS software version 26.

Results

During the study period, the medical records review was done to note gestational age of current

pregnancy, time since and type of previous CS(emergency or elective), cervical dilatation at time of current CS and its indication which are depicted in Table-1.

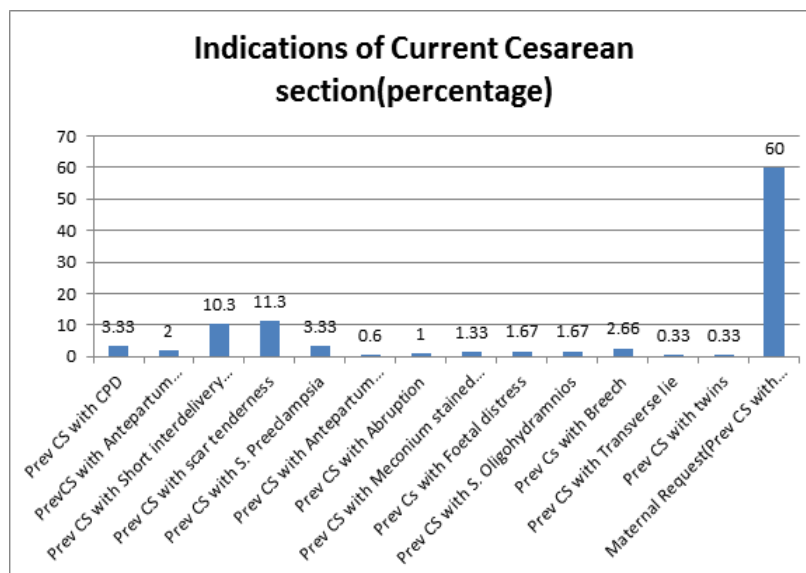
Table 1: Baseline details

≥ 40 weeks	20	6.67
Distribution of participants according to type of previous Caesarean section(n=300)		
Type of previous Caesarean section	No of participants	Percentage
Elective	44	14.67
Emergency	256	85.33
Distribution of participants according to time since previous Caesarean Section(n=300)		
Time since previous CS	No of participants	Percentage
≤18 months	47	15.67
18 months – 3 years	131	43.67
3 -5 years	72	24
≥5 years	50	16.67
Type of this Caesarean section(n=300)		
Timing	No of participants	Percentage
Elective	89	29.67
Emergency	211	70.33
Cervical dilation at time of Caesarean section		
Cervical dilation	No of patients(n=294)***	Percentage
Non dilated	153	52.04
≤4 cm	139	47.27
>4cm	2	0.68

*** Six participants presented with Ante partum Haemorrhage due to Placenta previa and hence per vaginal examination was not done.

Majority of our subjects underwent repeat CS at term. 85% of them had an emergency CS in previous pregnancy. 59.34% underwent a repeat CS within 3 years of previous CS and 70% had an emergency CS in current pregnancy. Only 0.68% were in active phase of labour during current CS.

The indications for which current Cesarean section was undertaken is depicted in chart no: 1 below



The intra-operative findings with respect to site and grade of adhesions (as per Pool’s classification) and scar dehiscence are presented in Table no:2.

Table 2: Intra-operative findings

Number of sites where adhesions were encountered		
Site of adhesions	No of participants (n=300)	Percentage
None	234	78
1 site	39	13
2 sites	22	7.33
≥3 sites	5	1.67
Grade of adhesions (Pool's classification)	No of participants	Percentage
1 (between uterus and bladder)	7	2.33
2 (between uterus and abdominal wall fascia)	0	0
3 (between uterus and omentum)	20	6.67
4 (between omentum and abdominal wall fascia)	24	8
5 (Adhesions to other pelvic structure that interferes with delivery)	0	0
Scar dehiscence/ rupture	No of participants	Percentage
Yes	4	1.33
No	296	98.66
Grades of Scar dehiscence	No of participants	Percentage
1 (No thinning of lower uterine segment)	1	0.3
2 (Thinning and loss of continuity of lower uterine segment but foetal hair visible)	2	0.6
3 (Thinning of lower uterine segment with window defect)	1	0.3

In our study, adhesions were noted in 51 subjects (17%), of which majority were between omentum and anterior abdominal wall fascia (8%) followed by adhesions between uterus and omentum in 6.67% subjects. Scar dehiscence was noted in 1.33% subjects.

The difficulties encountered were, need for additional techniques to deliver the presenting part, placenta praevia, morbidly adherent placenta and excessive intra-operative bleeding as presented in Table-3

Table 3:

	No of participants	Percentage
Additional technique for delivery		
Ventouse	4	1.33
Patwardhan method	3	1
Placenta praevia	8	2.67
Morbidly adherent placenta	5	1.67
Intraoperative blood loss >1000mL	22	7.33

Additional techniques for delivery were utilised in 7 subjects (2.33%). Placenta praevia was encountered in 8 subjects of which 5 had morbidly adherent placenta. Blood loss of more than 1000mL was seen in 22 subjects (7.33%)

Statistical analysis of association between intra-operative difficulties and baseline characteristics noted in our study are presented in Table – 4.

Table No: 4

Variable	Difficulty during opening abdominal wall	Difficulty during opening lower uterine segment	Difficulty during delivery of head/presenting part
p-value			
Gestational age at repeat CS	>0.05	<0.05	<0.05
Type of current CS- Elective/Emergency	<0.001	<0.001	<0.001
Cervical dilatation	<0.05	<0.05	<0.001
Indication for current CS	<0.05	<0.05	<0.001

Statistically significant association was noted between type of current CS (elective vs emergency) with difficulties at all three levels, while cervical dilatation at the time of CS and indication of current

CS had association with difficulty at delivery or presenting part.

The intra-operative complications encountered in form of extension of uterine incision, Hematoma

formation and injuries to bladder/bowel are summarized in Table No: 5

Table No: 5

Complications	Number of subjects	Percentage
Lateral extension of uterine incision	7	2.33
Vertical extension of uterine incision	3	1
Broad ligament hematoma	1	0.3
Bladder injury	3	1
Bowel injury	0	0

Discussion

Majority of our subjects underwent repeat emergency CS at term. 178 of 300 participants (59.33%) delivered within three years of previous Caesarean section i.e. had short sub-optimal inter-delivery interval emphasising the need to strengthen the practice of birth spacing not only at the institute level but also in fields to address various social factors affecting it. Majority -180 (60%) subjects underwent repeat CS for "Negative consent for Trial of Labour after previous CS" (TOLAC), which emphasises the need to rationalise indication for primary CS and strengthen counselling and family preparedness for TOLAC in eligible subjects. [1]

We noted adhesions in 22% subjects as compared to figures of 25.6%, 38.33% and 40.85% noted by Nisenblat V et al, Gohil Net al and Somani S et al respectively [2,3,4]. The adhesions between abdominal wall fascia and omentum were seen in 8% subjects, those between uterus and omentum in 6.7% subjects, corresponding figures in study by Somani et al for the two sites were 10.34 and 20.69% respectively. Scar dehiscence was seen in 1.3% of our subjects as compared to 21.5% and 7.04% by Sheela W et al [5] and Somani S et al [4] respectively. This difference could be because majority of our CS were performed in latent phase of labour or before the onset of labour pains.

Complications like uterine incision extension, hematoma and injury to urinary bladder were noted in 4.67% of study subjects which was similar to 4.3% as observed in study conducted by Nisenblat V et al. [2]

Extension of uterine incision was seen in 3.33% of subjects in our study as compared to 2.7% in study by Mengesha et al. [6] Bladder injury was noted in 1% of subjects in our study as compared to 0.09% in study conducted by Constantin et al. [7] This inadvertent bladder injury in 1% of subjects was due to presence of placenta percreta. There was no case of bowel injury during our study period.

Conclusion

Caesarean section is one of the most common obstetric surgeries performed worldwide. Although morbidity related to Caesarean section has reduced markedly over the decades, there is still a definite

risk associated with this major surgical procedure. During a repeat Caesarean section, women are at increased risk of complications like intra-operative haemorrhage and visceral injuries due to presence of adhesions, abnormal placentation (Placenta praevia and morbidly adherent placenta), scar dehiscence, uterine atony leading to postpartum haemorrhage. Hence, we would like to make a few suggestions:

Rationalize the indication for primary Caesarean section.

Strengthen counselling of patient and her family members for post-partum family planning and optimal birth spacing.

Encouragement of Trial of Labour after CS in eligible candidates.

Timing of CS with respect to gestational age, indication and availability of senior obstetricians, surgeons and blood and blood products.

CS audit on a regular basis.

References:

1. Population-Based Cesarean section rates in India by State and Union territory according to 3 demographic surveys. 2005-2016.
2. Maternal complications associated with multiple Cesarean deliveries. Victoria Nisenblat, Shlomi Barak, Ofra Barnett Griness, Simon Degani, Gonen Ohel, Ron Gonen. 21-6, Florida : American Journal of Obstetrics and Gynaecology, 2006; 108.
3. To study the incidence and type of surgical difficulties encountered in Repeat Cesarean section in comparison with primary Cesarean section. Dr Nidhi Gohil, Dr Rajni Parikh, Dr Deepali Koli. 1, Bhavnagar, Gujarat : International Journal of Medical and Biomedical Studies, 2020; 4.
4. To study of intra-operative maternal morbidity after repeating Cesarean section. Dr Sonali S Somani, Dr Sunita Sudhir, Dr Shashikant Somani. 1, Telengana, India : International Journal of Reproduction, Contraception, Obstetrics and Gynaecology, 2017;7:291-296.
5. Critical analysis of surgical difficulties and post operative morbidities of Cesarean deliveries: A rural teaching Hospital experiences in Silk city,

- South India. Wills G Sheela, M Chellatamizh, M Mohanambal. 6, Tamil Nadu : International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 2017;6:2565-2568.
6. Maternal and fetal outcome of Cesarean deliveries an factors associated with its unfavourable management outcomes; In Ayder Specialized Comprehensive Hospita, Mekella, Ethiopial. Meresa Berwo Mengesha, Hadgay Hagos, Desta Abraha, Natnael Asefa, Wedu Warid. 650, Ethiopia : BMC, 2019; 12.
 7. Constantin Zwergel, Constantin S. von Kaisenberg. Recent advances in Cesarean delivery:Maternal and fetal risks in Higher multiple Cesarean deliveries. IntechOpen. [Online] 2019.