To Analyze the Indications of Previous Cesarean section and Challenges encountered in Repeat Cesarean section

[1] Dr. Shruti Tailor*, [2]Dr. Vijyeta Jagtap, [3]Dr. Ragini Verma

[1]Senior Resident, Department of Obstetrics and Gynaecology, Government Medical College, Surat

[2]Assistant Professor, Department of Obstetrics and Gynaecology, Government Medical College, Surat

[3]Head of Department, Department of Obstetrics and Gynaecology, Government Medical College, Surat

*Corresponding Author: [1]Dr Shruti Tailor

Mobile No: 9099414272

Email id: shrutitailor1996@gmail.com

Abstract:

Background and Objectives: The incidence of Cesarean section in India is on rising trends with 21.5% in NFHS-5 from 17.2% in NFHS-4 [(1).] With increasing incidence of primary Cesarean section and it being a most common obstetric procedure worldwide, it gives women frequently an obstetric status of 'Previous Cesarean Section'. Hence, this study aims to study clinical profile, indications and challenges encountered in women undergoing Repeat Cesarean section. **Materials and Methodology:** An observational study was conducted collecting data from medical records of around 300 consenting subjects undergoing repeat Cesarean section in a tertiary care centre over a period of May 2019 to November 2020 after ethics approval. **Results:** Mean age of subjects who underwent repeat Cesarean section in our study was 26 years. 60% of the subjects underwent Repeat Cesarean section for Negative consent for VBAC. 50% of subjects who underwent Repeat Cesarean section belonged to Robson's class 1 and 2 in their previous Cesarean section. **Conclusion:** Cesarean audit should be conducted on regular basis. Patients fufilling criteria for TOLAC should be encouraged and counseled in antenatal period.

Keywords: Intra-operative difficulties, Negative consent for VBAC, Repeat Cesarean section

Introduction:

The incidence of Cesarean section in India is on rising trends with 21.5% in NFHS-5 from 17.2% in NFHS-4.[(1)] The reasons for it are multi-factorial which includes maternal request for Cesarean Section, increase in induction of labour, medical risk factors and increasing CS in view of negative consent for TOLAC. With increasing incidence of primary Cesarean section and it being a most common obstetric procedure worldwide, it gives women frequently an obstetric status of 'Previous Cesarean Section'. WHO stated: "There is no justification for any region to have Cesarean Section rates higher than 10-15% and every effort should be made to provide Cesarean section to women in need rather than striving to achieve specific

rates.[2] With subsequent Cesarean deliveries, various challenges in form of adhesions, Difficulty in Bladder dissection, presence of morbidly adherent placenta, increased intra-operative blood loss are observed. Hence this study aims to analyze the indications for Cesarean section and various challenges encountered during Repeat Cesarean section.

Aims and Objectives:

To study clinical profile, indications and challenges encountered in women undergoing repeat Cesarean section.

Materials and Methodology:

An observational study was conducted collecting data from medical records of around 300 consenting subjects undergoing repeat CS in a tertiary care centre over a period of May 2019 to November 2020 after ethics approval.

Inclusion criteria:

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

Exclusion criteria:

- Pregnant women with previous two or more Cesarean sections, past history of any abdominal surgery or Previous Classical Cesarean section.

All eligible consenting subjects were explained regarding aims and objectives of the study and their indication for undergoing Repeat Cesarean section. All Baseline parameters, detailed history of indication, intra-operative and post-operative complications in previous Cesarean section were noted. Detailed Intra-operative notes were taken and analysis was done as per SPSS software 26.

Results:

During the study period, all baseline parameters including age, parity, Registration status and gestational age of the subjects were noted as mentioned in Table No: 1 below

Table No I: Baseline Details

Age wise distribution of participants(n=300)		
Age	**No of participants**	**Percentage**
< 20 years	13	4.3%

20-29 years	259	86.3%
30-39 years	28	9.3%
> 40 years	0	0.0%
Distribution of participants according to address(n=300)		
Address	**No of participants**	**Percentage**
Urban	250	83.3
Rural	50	16.6
Antenatal Registration status of participants(n=300)		
Registration	**No of participants**	**Percentage**
Registered at our hospital	248	82.67
Registered outside	30	10
Referred	7	2.33
Emergency	15	5
Parity status of participants(n=300)		
Parity	**No of participants**	**Percentage**
Primipara	254	84.6
2nd para	33	11
3rd para	10	3.33
4th para	2	0.006
Grand multipara	1	0.003
Gestational age of participants at enrollment(n=300)		
Gestational age	**No of participants**	**Percentage**
≤36 weeks	37	12.33
37 to 39 weeks	243	81
≥ 40 weeks	20	6.67

The indications for which subjects underwent Repeat Cesarean section were explained to the subjects and noted in the proforma as mentioned in Table No: II below

Table No II: Indications for Current Cesarean section

Indications of current Caesarean section as per FOGSI indications (n=300)		
Indications	**No of Participants**	**Percentage**

MATERNAL INDICATIONS		
CPD	10	3.33
Placenta Previa	6	2
Short interdelivery interval	31	10.3
Scar tenderness	34	11.3
S. Preeclampsia	10	3.33
Antepartum Eclampsia	2	0.6
Abruption	3	1
FOETAL INDICATIONS		
Meconium stained liquor	4	1.33
Foetal distress	5	1.67
Oligohydramnios	5	1.67
Breech	8	2.66
Transverse lie	1	0.33
Twins	1	0.33
OTHERS		
Maternal Request(Prev CS with negative consent for VBAC)	180	60

As seen from Table No II below, Majority of the subject(60%) underwent their Repeat Cesarean section in view of negative consent for VBAC. Hence the subjects undergoing Cesarean section for indications other than negative consent for VBAC and for Negative consent for VBAC were distributed as per age, No of antenatal visits and Registration status as mentioned in Table No: III below

Table No III: Distribution of Indications with respect to Age, No of antenatal visits, Parity and Registration status

Age	**Subjects who underwent CS in view of Negative Consent for VBAC**	**Subjects who underwent CS for other Indications**	**P-value**
≤25 years	124	49	Less than 0.05(Statistically significant)
>25 years	56	71	

No of Antenatal visits	**Subjects who underwent CS in view of Negative Consent for VBAC**	**Subjects who underwent CS for other Indications**	**P-value**
≤3	54	45	0.17 (Statistically Not significant)
≥4	126	75	
Registration status	**Subjects who underwent CS in view of Negative Consent for VBAC**	**Subjects who underwent CS for other Indications**	**P-value**
Registered at our institute	156	92	0.02(Statistically significant)
Unregistered/Registered elsewhere	24	28	
Parity	**Subjects who underwent CS in view of Negative Consent for VBAC**	**Subjects who underwent CS for other Indications**	**P-value**
Primipara	158	96	0.06(Statistically not significant)
Multipara	22	24	

As mentioned in Table I and Table III, 84.5% of the subjects who underwent repeat Cesarean section were primipara. Hence detailed analysis of indications of primary Cesarean section was done and classified as per Robson's Classification.

The indications of previous as well as current Cesarean section were classified as per Robson's Classification as mentioned in Table No: IV below

Table No IV: Distribution of Indications of Previous Cesarean section and Current Cesarean section as per Robson's Classification:

Robson's Class	**Indications of Previous Cesarean section**	**Indications of Current Cesarean section**
1	78	0
2	72	0
3	49	0
4	46	0
5	0	275
6	15	0

7	15	8
8	2	0
9	10	1
10	13	16

Detailed notes on intra-operative findings were taken and difficulties encountered were summarized as difficulty in Opening anterior abdominal wall, adhesions if any, difficulty in Bladder dissection and morbid adherence of placenta were noted in Table V below;

Table No V: Difficulties encountered intra-operatively

Difficulties encountered	**No of Subjects**	**Percentage**
Difficulty in Opening Anterior abdominal wall	42	14
Adhesions between Omentum and uterus	24	8
Difficulty in Bladder Dissection	68	22.6
Difficulty in delivery of presenting part	7	2.3
Difficulty in Placental Separation	5	1.67
Increased Intra-operative Blood loss(>1000ml)	22	7.33

Intra-operative findings of scar dehiscence was noted in 1.3% subjects and extension of uterine incision was noted in 3.33% of subjects.

As mentioned in Table No V above, increased blood loss (>1000ml) was noted in 7.33% of subjects and measures taken intra-operatively to control bleeding are noted in Table No: VI below.

Table No VI: Measures taken intra-operatively to control Bleeding

Measures Taken	**No of subjects**	**Percentage**
Need for placental bed stitches	2	0.6
Extra stitches along uterine suture site	13	4.3
Uterine artery ligation Unilateral Bilateral	15 7 8	5
Ligation of anterior division of Internal	5	1.6

iliac artery		
Caesarean Hysterectomy	4	1.3

Discussion

Rates of Cesarean section has increased dramatically over decades with indications overlapping for both maternal and Fetal interests. However, Previous caesarean section has come up as a major indications, hence understanding clinical profile of subjects and challenges encountered in Repeat Cesarean section has become utmost important.

As mentioned in Table No: I above Majority of the subjects were within the age group of 20-29 years(86.3%). 4.3% of subjects underwent repeat Caesarean delivery at less than 20 year age, emphasising the need for awareness regarding delaying of marriage, delaying post-marriage conception and postpartum family planning. Mean age of our study subjects was 26 years, as compared to 25.13 and 24.22 noted in study conducted by Amale et al [(3)] and Deepa Shanmugham et al [(4)]respectively. 92.7% of the participants were registered and had taken previous antenatal visits. However, 5% of the participants, inspite of having a previous Caesarean section and hence being a high risk pregnancy had not taken any antenatal visits in the current pregnancy and presented for the first time in tertiary care centre. This emphasises the need to create awareness regarding importance of antenatal care and strengthening pregnancy registration during antenatal visit. Mean gestational age at which our study subjects underwent Repeat Cesarean section was 38 weeks similar to 38.1 and 37.8 observed in study conducted by Amale et al [(3)]and Alshehri et al[(5)] respectively. However, 12.33% (n=37) of the subjects in our study underwent a preterm repeat Caesarean section for indications like Antepartum Eclampsia, Antepartum Haemorrhage, Severe Pre eclampsia with poor Bishop score, Previous CS with scar tenderness, Severe oligohydramnios and Fetal distress.

It was observed in our study that majority of subjects(180,60%) underwent their Repeat Cesarean section in view of Negative consent for Vaginal birth after Cesarean section(VBAC). This emphasises the need to rationalize the rates of Primary CS, promote natural childbirth by mental preparation of the expectant mother for the same and to strengthen counselling for TOLAC during antenatal period. Similar observation where majority of subjects underwent repeat Cesarean section for negative consent for VBAC was observed in study conducted by Singh N et al [(6)]. As majority of subjects in our study underwent Cesarean

section for Negative consent for VBAC, a statistical analysis was done to look for association between various socio-demographic parameters and indications of Current Cesarean section as mentioned in Table No: III above. It was found that subjects undergoing CS for negative consent for VBAC and those for other reasons was not significant with number of antenatal visits, which could be due to lack of counselling in the antenatal period.

As majority of the subjects undergoing Repeat Cesaeran section were Primipara, an analysis was on Robson's class for current and previous Cesaren section as shown in Table No: IV above. As mentioned in Table IV, 46.66% of the subjects belonged to Robson's class 1 and 2 in their previous Cesarean section which emphasises the need to strengthen emotional preparedness of the pregnant lady and the family towards childbirth and promoting vaginal birth.

With rising rates of Repeat Cesarean section, various intra-operative challenges are encountered. As mentioned in Table V above, difficulty in opening anterior abdominal wall was encountered in 14% of subjects due to adhesions between rectus muscle and sheath and between anterior abdominal wall and omentum. This was comparatively lower in our study as compared to 28% and 32% in a study conducted by Morang K et al [(7)] and Deepa Shanmugham et al [(4)] respectively. Difficulty in Bladder dissection due to bladder advancement, adhesion to previous Cesarean scar and fibrosis was encountered in 22.6% of subjects as compared to 10% and 17.5% observed in study conducted by Singh N et al [(6)]and Deepa Shanmugham et al [(4)] respectively. Bladder injury was seen in 3 subjects due to presence of placenta percreta involving bladder. Difficulty was observed in delivery of presenting part in 2.3% of subjects due to floating head or deeply engaged head. Morbidly adherent placenta was encountered in 5 subjects(1.67%) which was slightly higher than 1.13% observed in a study conducted by Meena et al[(8)]. Out of 5 subjects with morbidly adherent placenta, Cesarean hysterectomy was required in 4 Subjects and in one subject bleeding was controlled by taking placental bed stitches and Ligation of anterior division of internal iliac artery.

Increased intraoperative blood loss of more than 1000ml was encountered in 7.3% of subjects as compared to 10.9% and 8% in study conducted by Morang K et al [(7)] and NazaneenS et al[(9)] respectively. In our study, increased intra-operative blood loss was observed due to presence of placenta previa, Thrombocyopenia and hypertensive disorders of pregnancy present in those subjects.

Conclusion:

Short interpregnancy interval, Early conception, insufficient antenatal visits, maternal request for Cesarean section, failure of labour induction are associated with rising rates of Primary Cesarean section and thus Repeat Cesarean section in subsequent pregnancy. Hence Cesarean audit should be conducted on regular basis. Patients fufilling criteria for TOLAC should be encouraged and counselled in antenatal period.

Conflicts of interest: None

References

1. Changing scenario of C-section delivery in India:Understanding the maternal health concern and its associated predictors. **Nivedita Roy, Piyush Kumar Mishra, Vijay Kumar Mishra, Vijay Kumar Chattu, Souryakant Varandani, Sonu Kumar Batham.** 4182-8, Haryana : Journal of Family Medicine and Primary Care, 2021, Vol. 10.

2. WHO statement on Cesarean section Rates. **Organization, World Health.** 2015.

3. Study of intraoperative complications in lower segment cesarean section at tertiary care hospital. **Shekhar Amale, Anjali Bhirud, Pankaj Sarode.** 1, Jalgoan : MedPulse International Journal of Gyanecology, 2021, Vol. 19. 06-09.

4. Intraoperative difficulties encountered in women undergoing Repeat Cesarean section. **Deepa Shanmugham, Harshini Jayakumar, Dr C rAMANY, Jessy Varghese.** 3, Pondicheery : East African Scholars Journal of Medical Sciences, 2018, Vol. 1. 77-82.

5. Outcomes and Complications after repeat Cesarean sections among King Abdulaliz University hospital patients. **Khalid Alsheri, Ahmed Ammar, Meshal Aldhubabian, Mohammed S, Ahyad.** 2, Saudi Arabia : Mater Sociomed, 2019, Vol. 31. 119-124.

6. Intraoperative difficulties in Repeat Cesarean section i a Tertiary care hospital. **Neelema Singh, Sreedevi, Bolle Lavanya.** 7, Telangana : International Journal Of Reproduction, Contraception, Obstetrics and Gynaecoloy, 2021, Vol. 10. 2596-2605.

7. Intraoperative surgical difficulties encountered during Repeat Cesarean section in a tertiary care centre in Northeast India. **Korobi Morang, Lithingo Lotha, Kiran Konda.** 11, Assam : International Journal of Reproduction, Contraception, Obstetrics and Gynaecology, 2021, Vol. 10. 4144-49.

8. A study of intraoperative difficulties in Repeat Cesarean section. **Jaishree Meena, Deepali Jain.** 10, Rajasthan : International journal of Scientific Research, 2020, Vol. 9. 10-11.

9. Study of Intaoperative complications associted with Repeat Cesarean sections at a tertiary care Hospitals in Eastern India. **NazaneenS, KumariA, Malhotra J, Pankaj S, Alam A, Roy V k.** 8, Bihar : International Journal of Dental and Medical Sciences, 2017, Vol. 16. 77-82.

Abbreviations: CS: Cesarean section, TOLAC: Trial of Labour after Cesarean Section, VBAC: Vaginal Birth after Cesarean section.