



A STUDY ON VARIOUS TYPES OF INTRAOPERATIVE DIFFICULTIES IN REPEAT LOWER SEGMENT CAESAREAN SECTION AT TERTIARY CARE HOSPITAL.

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ABSTRACT

Aims and objectives: to study various types of intraoperative difficulties in repeat lower segment caesarean sections. **Background:** from the recent past, the number of caesarean section has increased drastically along with the complications due to the operation. The intraoperative complications include adhesions, hemorrhage, placenta praevia, adherent placenta, scar rupture, bladder injury, need of caesarean hysterectomy, difficulty in opening the abdomen in subsequent caesarean operation. The above intraoperative difficulties showed adverse effects on women health. **Conclusions:** increasing number of caesarean section is associated with increased maternal morbidity. It is prudent to involve a experienced obstetrician in repeat caesarean operation and the best way to decrease this is by reducing the number of primary caesarean rates.

KEYWORDS : Repeat caesarean section, adhesions, intraoperative difficulties

INTRODUCTION

Caesarean section is one of the commonest obstetrics operative procedure performed worldwide and it has been observed that the rate of caesarean section is at increasing trend.

According to World Health Organizations guidelines, modified in 1994, the caesarean birth rate in any population group should range between 5% and 15% (WHO 1994).¹ It has been suggested that there is no additional benefit to the children or to the mothers when the caesarean rates exceed this level. Its relative safety has increased the acceptance and rate in coming years and this is now the public health problem in term of economic burden and possible complications. The reason for rising trend is multifactorial like increase in maternal age, lifestyle changes, changing obstetric practices like induction of labor and continuous fetal monitoring, maternal request, relative safety and litigations in medical practices.

Main cause of increase in caesarean section is decrease in vaginal birth rate after caesarean section and due to increase in primary number of caesarean operation on maternal request. Most of the patients with previous caesarean section undergo repeat caesarean section because of increase complications associated with vaginal birth after caesarean delivery. Now the operation is safe because of improvement in antibiotics, anesthesia blood transfusion facilities; still it carries a significant risk to the mother compared to the spontaneous vaginal delivery. Lower segment caesarean section is safe but delivery by vaginal route is safer. The surgeon while performing repeat caesarean section will encounter more surgical difficulties due to distorted anatomy.

Maternal morbidity and mortality associated with repeat caesarean section is an important public health problem. Repeat caesarean section makes future obstetrics procedures and abdominal exploration difficult. The risks of intra-operative difficulties increases with increasing number of caesarean section. The well-known complications are intra-abdominal adhesions, increase blood loss, placenta praevia, thinned out lower uterine segment, scar dehiscence, scar rupture, injury to adjacent structures (bladder, bowel) etc.

The number of caesarean deliveries in India has more than doubled in the past decade, going up from 9% of total birth in 2005-06 to 18.5% in 2015-16(NFHS-4),² during the same period institutional deliveries have also doubled from 38.7% to 78.9%.² For nearly 30 years the International health care community has considered the ideal rate of caesarean section between 10% to 15%, this was based on the following statement by a panel of reproductive health experts at meeting organized by WHO in 1985 in Fortaleza, Brazil.³

AIMS AND OBJECTIVES.

The present study was performed to evaluate the various types of intra-

operative difficulties encountered in women undergoing repeat lower segment caesarean section.

MATERIALS AND METHODS

Hospital based study was done during the period of July 2019 to June 2020. The present study is a study of intra-operative difficulties in repeat Caesarean section in 200 cases that were seen in the department of Obstetrics and Gynaecology at Gauhati Medical College and Hospital during a one year study period as mentioned above.

Inclusion Criteria:

- All women with only previous caesarean section (one or more) irrespective of age and parity.

Exclusion Criteria:

- All women who have undergone other abdominal surgeries.
- History of operation for ectopic pregnancy.
- History of rupture uterus, uterine perforation.
- History of women with bleeding disorder and deranged liver function test.

Method of Collection of Data:

It is an observational prospective study of 200 cases with repeat Caesarean section.

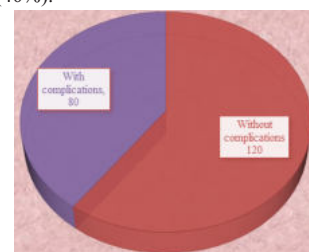
Procedure of Study:

Selection of patients were based on inclusion criteria. Case history of repeat caesarean deliveries were studied and data were recorded. This is a prospective observational study done in 200 patients of repeat Caesarean section.

As surgeons the particular difficulties we encounter while operating a repeat Caesarean section were meticulously noted. The collected data was analyzed for type and incidence of the intraoperative problems.

RESULTS

Out of 200 cases studied 120 cases of previous C- sections did not show any complications (60%) and remaining 80 cases showed a variety of complications (40%).



Graph1- Total No. Of Patients.

Table 1 – Number Of Previous CS

No. of previous C-sections.	Number of patients.(N=200)	Percentage (%)
1	170	85%
2	29	14.5%
3	1	0.5%
TOTAL	200	100%

In our study the age group of cases which underwent C-section was between 18 to 35 years, with a mean age group 24.24 years with SD of 2.91.

Table 2: Age Groups And Intraoperative Difficulties

Age Groups	No. Of Patients	No. Of Patients With Intraoperative Difficulties.
<20 YEARS	1	0
20 – 29 YEARS	187	77 (41.17%)
30 -35 YEARS	12	3 (25%)
Total	200	80

Table 3: Various Types Of Intraoperative Difficulties.

<20 Years			20 – 29 Years		30 – 35 Years	
INTRAOPERATIVE DIFFICULTIES.	NO. OF CASES	%	NO. OF CASES	%	NO. OF CASES	%
ADHESIONS	0	0	70	37.43	2	16.66
HEMORRHAGE	0	0	14	7.48	0	0
PLACENTA PRAEVIA	0	0	5	2.67	0	0
UTERINE INCISION EXTENSION	0	0	5	2.67	0	0
SCAR RUPTURE	0	0	2	1.06	0	0
BLADDER INJURY	0	0	1	0.53	0	0
THINNED OUT LOWER UTERINE SEGMENT	0	0	26	13.90	0	0
SCAR DEHISCENCE	0	0	4	2.00	0	0
CAESAREAN HYSTERECTOMY	0	0	1	0.53	0	0
ADVANCE BLADDER	0	0	23	12.29 %	1	8.33
ADHERENT PLACENTA	0	0	1	0.53%	0	0

Highest incidence of intra-operative difficulties was seen in the age group 20 – 29 years. There were no cases of bowel injury in the study population.

Table 4: No. Of Repeat Cs And The Incidence Of Intra-operative Difficulties.

No. Of Previous Cs	No. Of Cases	No. Of Patients With complications	Percentage
1	170	65	38.23
2	29	14	48.27
3	1	1	100
TOTAL	200	80	

Table 5: Percentage Of Types Of Intraoperative Difficulties (once Post Cs Vs Twice Post Cs Vs Thrice Post CS)

Types Of Intra-operative Difficulties.	P1(previous 1 Lscs0 (n=170 Patients) No. Of Patients With Intraoperative Difficulties (%)	P2(previous 2 Lscs) (n=29 Patients) No. Of Patients With Intra-operative Difficulties (%)	P3(previous Three Lscs (n=1 Patient) No. Of Patient With Intra-operative Difficulties (%)	p value
Adhesions	55 (32.53%)	16 (55.17%)	1(100%)	0.0249
Hemorrhage	7(4.11%)	6(20.68%)	1(100%)	< 0.0001
Placenta Praevia	2(1.17%)	3(10.34%)	0	0.0138
Uterine Incision Extension	1(0.58%)	4(13.7%)	0	<0.0001
Scar Rupture	0	2 (6.88%)	0	0.0026

Bladder Injury	0	0	1(100%)	<0.0001
Thinned Out Lus	20(11.76%)	6(20.68%)	0	0.3877
Scar Dehiscence	1(0.58%)	3(10.34%)	0	0.0024
Caessarean Hysterectomy	0	0	1(100%)	<0.0001
Advance Bladder	15(8.82%)	8(27.5%)	1(100%)	<0.0001
Placenta Accreta	0	0	1 (100%)	<0.0001

Table 6 – overall incidence of intraoperative difficulties in post cs patients.

Intraoperative Difficulties	No Of Patients With Repeat CS (n=200)	No Of Patients Of Repeat Cs With The Type Of Intraoperative Difficulties- N(%)	P value
Adhesions	200	72 (36%)	<0.001
Thinned Out Lus	200	26 (13%)	
Advance Bladder	200	24 (12%)	
Hemorrhage	200	14 (7%)	
Uterine Incision Extension	200	5 (2.5%)	
Placenta Praevia	200	5 (2.5%)	
Scar Dehiscence	200	4 (2%)	
Scar Rupture	200	2 (1%)	
Bladder Injury	200	1 (0.5%)	
Adherent Placenta	200	1 (0.5%)	
Caesarean Hysterectomy	200	1 (0.5%)	

We can note intra-operative difficulties increased with number of C-section. The above table shows that the frequency of adhesion is very high among pregnant women undergoing repeated caesarean section.

Bladder was inadvertently injured in one case of three previousCS with adherent placenta which required caesarean hysterectomy.

DISCUSSION

The rate of caesarean section has increased since two decades, resulting in simultaneous decrease in the proportion of women having spontaneous vaginal delivery in both the developed and developing countries in the entire world.⁴ The relative safety of caesarean deliveries and the perceived advantages relative to the vaginal delivery has resulted in a change in the perceived risk benefit ratio, which has accelerated the acceptance for cesarean section⁵.

1) Relation Between Intraoperative Difficulties And Number Of Previous CS.

In a study conducted by Joesph et al.⁶ (adhesions Previous 1CS vs previous 2 CS vs previous 3 CS 33% VS 40% VS 0%), Thin scar(previous 1 CS vs previous 2 CS vs previous 3CS - 9.5%,36%,100%), hemorrhage(Previous 1CS vs previous2 CS vs previous 3 CS -4.10% vs 8% vs 0%) extension of uterine incision (previous 1CS vs Previous 2CS vs previous3CS - 4.10% vs 0% vs 0%), placenta praevia (previous 1CS vs previous 2 CS vs previous 3 CS- 4%,8%,0%). In this study it was found that as the number of CS increases, so does the intra-operative difficulties rates. Overall complications rates with previous 1CS vs previous 2 CS vs Previous 3 CS were 50.68% vs 84% vs 100%.

In present study, following intraoperative morbidities were encountered- adhesions(Previous 1 CS vs previous2 CS vs previous 3CS - 34.11%vs 44.8% vs 100% respectively), thinned out LUS (Previous 1 CS vs previous 2 CS - 11.76% vs 20.68% respectively), advance bladder(Previous 1 CS vs previous 2 CS vs previous 3 CS- 8.82% vs 27.5% vs 100%), intraoperative hemorrhage (Previous 1 CS vs previous 2 CS vs previous3 CS- 4.11% vs 20.68% vs 100%), placenta praevia (previous 1CS vs previous 2 CS- 1.17% vs 10.34%), uterine incision extension(Previous 1 CS vs Previous 2 CS- 0.58% vs 13.7%), scar rupture(previous 1 CS vs Previous 2 CS – 0% vs 6.8%), scar dehiscence(previous 1 CS vs previous 2 CS - 0.58% vs 10.34%), bladder injury(Previous 1CS vs Previous 2 CS vs Previous 3 CS – 0% vs 0% vs 100%) adherent placenta(Previous 1CS vs previous 2 CS vs previous 3 CS-0% vs 0% vs 100%). In one case of thrice post caesarean

section adherent placenta which needed caesarean hysterectomy. Our study highlights upon the higher incidence of overall complications was found in women who underwent previous three caesarean section(100%) and in the other group of women with previous two caesarean section, complications were seen in 48.27% of patients and in a group of patients with previous one caesarean sections, complications were seen in 38.23% of patients.

In a study conducted by Farkhundah et al.⁷ showed that incidence of complications were more in women with two previous caesarean sections, where in the most common complications was dense adhesions(35.5%), followed by thinned out lower uterine segment (16.6%), rupture uterus(1.1%), and bladder injury(1.1%). But incidence of abnormal placentation was more with 3 or more caesarean sections as compared with previous two cesarean sections.⁸

In a study conducted by Khusboo et al.⁹ complications rate were adhesions(35%), thin LUS(17%), extension of uterine incision (3%), postpartum hemorrhage(5%), placenta praevia/accrete (5%)

2. Various Types Of Intraoperative Difficulties :

A).Caesarean delivery and adhesions:Morales et al¹⁰ in his study showed after the first caesarean delivery, 100 of 217 women (46%) had pelvic adhesive disease; 48 of 64 (75%) women who underwent third caesarean delivery and 5 of 6 women (83%) who underwent fourth caesarean delivery had adhesions.Tulandi et al.¹¹ did a similar study and found adhesion in 24.4% of patients with previous 1 CS, 42.8% in those with previous 2 CS and 47.9% in those with previous 3 CS.The overall adhesion formation rate in our study is 36%. Many studies show that as the number of CS increases the adhesion also increase. In our study we see 100 % adhesion in patient with previous three CS. This can be explained because of only one number of patient in that group.

In the present study adhesions accounted for 90% of complications. These cases were associated with excessive bleeding due to increased operating time and increase in raw surface area following adhesiolysis.

B.Caesarean section and intraoperative hemorrhage:

The reasons for excessive blood loss after cesarean delivery include uterine atony, adhesions, placenta acreta and trauma.

Table7 – Incidence of intraoperative haemorrhage as intraoperative difficulties in repeat caesarean section patients.

Intraoperative hemorrhage	Present	Somani et al.	Joseph et al.
P1	4.11%	7.04%	4.10%
P2	20.68%	19.5%	8%
P3	100%		0%

In our study overall 14 patients(7%) had hemorrhage on table due to adhesions, abnormal placentation, extension of uterine incision, scar rupture and due to need of caesarean hysterectomy.

C.BLADDER INJURY

The incidence of bladder injury that was assessed in a cohort study of 14,757 caesarean deliveries performed at a larger academic center in Rhode Island over a 7 year period was found to be 0.28%.¹²

In our study 0.5% of the case had bladder injury which was managed on table by suturing the bladder in two layers and post operatively catheter was put for 14 days.

In a study conducted by Phipps et al.¹², incidence of bladder injury found was 0.28%.

In a study conducted by Rahman et al.¹³, incidence of bladder injury found was 0.44%

Risk increases to 1.5% after 4 or more previous uterine incision.¹⁴

D).thinned Out Lower Uterine Segment.

In a study conducted in 240 patients of repeat caesarean section by Khursheed F, Sirichand P, Jatoi N observed that there was a high incidence of extremely thinned out LUS (16.6%) in women with previous two caesarean sections as compared with women with previous one caesarean section(8.7%)⁷

In our study 13% of the study group had thinned LUS.

Table 8- Incidence of thin LUS based on number of previous CS in repeat CS patients.

Thin LUS	PRESENT	Joseph et al.	Somani et al.	Samar et al.
P1	11.76%	9.5%	21.13	11.6
P2	20.68%	36%	36.17	17
P3	0%	100%	-	18

E). Scar Dehiscence

In a study conducted in 240 patients of repeat caesarean section by Khursheed F, Sirichand P, Jatoi N observed that scar dehiscence was seen in 7.8% of women with previous one caesarean section, 4.4% with previous two caesarean section and 5.5% in previous three caesarean section⁷.

In our study incidence of scar dehiscence was found in 0.58% of patients with previous one CS and in 10.34% of patients with previous two CS and was incidental finding on table.

In the review by Kirkinen¹⁵ 27% of patients with three or more previous CS had fenestration of uterine scar.

In study conducted by Mohamad K. Ramadan et al¹⁶ among 588 patients, 27 cases of uterine scar dehiscence were identified with an incidence of 4.6%.

In study conducted by Somani et al scar dehiscence was seen in 7.04% of once post cs and 31.91% of twice post cs

F. Scar Rupture

G. There were 2(1%) cases of scar rupture in our study and in both cases repair of ruptured segment was done. In study by Motomura K et al¹⁷ it was 0.5% and 2.13% by Somani SS et al.

H. ADVANCE BLADDER

Incidence of advance bladder in patients of repeat CS in our study is 12% compared to 23.7% in study conducted by Somani et al.

I. PLACENTA PRAEVIA

It was observed in our study that the increasing number of CS increase the incidence of placenta praevia(1cs vs 2 cs - 1.17% vs 10.34%) however in one case of thrice post caesarean section we didn't find placenta praevia. Similar observation is seen in study by Khursheed et al.¹⁸ (2.6%, 2.2% and 2.7% in previous 1CS, 2CS and 3CS) and Joseph et al. (4% and 8% in previous 1CS and 2CS).

J. Adherent Placenta

The incidence is on rise. Previous CS and coexisting placenta praevia remained the major risk factors for adherent placenta.

In a study conducted by cheng et al¹⁹ a total of 39 patients with morbidly adherent placenta were identified during 1999 to 2013. The overall rate was 0.48/1000 births.

In a study conducted by Wu et al²⁰ reported an incidence of 1 in 533 births

In the present study incidence of adherent placenta is 0.50%.

K. Caesarean Hysterectomy

In our study 0.5% of caesarean hysterectomy was present and was done for adherent placenta.

CONCLUSION

Caesarean section is one of the most commonly obstetric operations done worldwide. It is true that mortality and morbidity related to caesarean section has reduced over the past decade, but there is still a definite morbidity associated with this operation. While the entire world has been facing an epidemic of rise in rate of caesarean section over the past few decades, good practice requires us to exhibit our judgement, based as far as possible on evidence based medicine to decide when the caesarean delivery is necessary.

During caesarean operation mothers are at increased risk of complication than they are during a vaginal birth. The risk increases with the increase in number of caesarean sections, number of parity, early conceptions, early marriage, short spacing between subsequent pregnancy, poor nutritional status, inadequate antenatal checkup, high prevalence of illiteracy and poverty.

Various types of intraoperative complications were seen more in women with more number of caesarean operations.

The clinical studies are further needed to evaluate not only the effects of surgical technique, and intraoperative management but also needed to investigate their effects on preoperative morbidity which is associated with caesarean operation. The best method to reduce the various number of potential risks of repeat caesarean operation is to reduce in number of primary and repeat caesarean operations whenever possible.

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