

Study of intra operative difficulties in repeat caesarean sections

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Abstract

Background: The incidence of cesarean section is continuously rising giving women frequently an Obstetric status of “Previous Cesarean Section”. The timing and rate of increase are different from one country to another. In Medical Colleges and Teaching Hospitals in India the overall rate for cesarean deliveries is 24.4%. **Aim:** To study the type and incidence of Intra operative surgical difficulties encountered in repeat cesarean sections. **Material and Methods:** This prospective study was conducted in Gandhi Hospital from June 2010 to November 2012 in the Obstetrics and Gynaecology Department. 400 cases were taken for the Study. Among the 400 cases 350 cases were of previous one cesarean section and 50 cases were of previous two cesarean section. **Results:** Total number of deliveries were 8302. The cesarean section rate in our hospital is 38.48%. Among the total cesarean sections, the primary sections contribute to 60.62% and repeat sections contribute to 39.37%. Among the total number of repeat sections 400 cases are included in this study. Among the 400 cases 350 cases were of previous one cesarean section and 50 cases were of previous two cesarean section. Most common maternal intra operative complication noted was thinned out previous uterine scar occurring in 96(24%) cases. The complication rate is more with repeat sections of 2 previous cesarean section cases. Among the total bladder complications noted in 400 repeat cesarean section cases the most common complication was Drawn Up Bladder noted in 67 (16.75%) cases and the least common complication was Bladder Injury noted in 1 (0.25%) case. **Conclusions:** The Cesarean section is now safer than in the past, because of improvements in Anaesthesia, Antibiotics and Blood transfusion services, but still it carries a significant risk to the mother compared to a normal vaginal delivery. Complication rate increases with each number of repeat cesarean sections. Hence it is necessary to take measures to reduce the number of cesarean sections and to educate the people to limit their family size.

Key Words: C Section.

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INTRODUCTION

Cesarean section is the commonest Obstetric operative procedure worldwide. The incidence of cesarean section is continuously rising giving women frequently an

Obstetric status of “Previous Cesarean Section”. However this makes future obstetric performances and future abdominal explorations risky. Cesarean section rate has been rising continuously and the trend is likely to continue in future. This increase has been a global phenomenon. The timing and rate of increase are different from one country to another. In 1970 the cesarean section rate in United Kingdom was reported to be 4.8%. The audit commission report in 1997 found this rate increased to 11-18%¹. In England the rate was 21.3%² and in Switzerland it was 29%³. Rate of 45% was reported in Puerto Rico between 1996 and 2002⁴. The steady rise in cesarean section rate has resulted in a constant rise of obstetric population with previous uterine scar. It was 6.28% in 1991 and 7.6% in 1995 in a study conducted in Pakistan⁵. Repeating a cesarean section in subsequent

pregnancies is a common mode of delivery, and happens variably in 11% to 24% cases of previous one cesarean section. Prior cesarean delivery forms a major indication for repeat cesarean deliveries⁶. There is an objective evidence to support the widely held view that multiple cesarean sections predispose to an increased risk of uterine rupture, severe intra peritoneal adhesions, significant Hemorrhage, Placenta praevia, Placenta accreta, Bladder injury, Hysterectomy etc. The present study aims to find out the type and incidence of intra operative surgical difficulties encountered by a surgeon in this highly prevalent surgical procedure of repeat cesarean section which may be helpful in identifying the magnitude of the problem to improve the patients care.

MATERIAL AND METHODS

This observational prospective study was conducted in Gandhi Hospital, Secunderabad from June 2010 to November 2012 in the Obstetrics and Gynaecology Department. All the pregnant women admitted in Obstetrics and Gynaecology Department through Outpatient Department or in emergency with the history of previous cesarean section (one or more) and had repeat elective or emergency cesarean section during the study period were included in this study and those who had cesarean section for the first time were excluded. The case histories and intra operative findings of all cases of repeat elective and emergency cesarean sections were studied and the data recorded and analyzed to know the difficulties that might be because of previous cesarean section. The existing methods of performing cesarean procedures were unaffected by the study. I have personally assisted all the discussed cases here and have

recorded the findings where possible by photography and by record maintenance. The patients were followed till discharge. Development of fever, uterine involution rate, lochial discharge, day of suture removal and healing of wound were evaluated before discharge. Any of the bladder, ureteric injuries and bowel injuries were followed up for 15 to 20 days and recovery recorded. The following procedure is adopted to perform cesarean section in our Hospital.

Preoperative Preparation: Informed written consent for the procedure, Anaesthesia and Blood transfusion is obtained. Patient was kept on NBM from 10:00 PM onwards on the day before surgery and at least for 4 hrs in emergency. Local preparation of the parts done. Soap and water enema was given twice for all Elective Cesarean section cases. Ranitidine (H₂ blocker) 150 mg is given orally night before (elective procedure) and it is repeated (50 mg IM or IV) one hour before the surgery to raise the gastric P^H. Metoclopramide (10 mg IV) is given to increase the tone of the lower esophageal contents, 2 hrs before surgery in elective cases and before surgery in emergency cases. Prophylactic antibiotics are given to prevent post-operative infections. The usual antibiotics given are III generation cephalosporins or penicillin group of drugs such as Ampicillin and Metronidazole for anaerobic coverage. Bladder is emptied by a foley's catheter which is kept in place for 24 hrs. Fetal heart sounds are checked once more at this stage. Neonatologist is made available for high risk cases.

Anaesthesia: May be spinal, epidural or general. However, choice of the patient and urgency of delivery are also considered.

RESULTS

Among the 400 cases, the total number of booked cases were 244 (61%) and unbooked cases were 156 (39%).

Table 1: Age and parity distribution in study

Age in Yrs	Total cases of 1 previous cesarean section (n=350)		Total cases of 2 previous cesarean section (n=50)		Total cases of Repeat cesarean section (n=400)	
	No	%	No	%	No	%
20-25 Yrs	230	65.71%	24	48%	254	63.5%
26-35 Yrs	120	34.28%	26	52%	146	36.5%
Parity						
Gravida II	278	79.42%	Nil	Nil	278	69.5%
Gravida III and IV	72	20.57%	50	100%	122	30.5%

Among the 400 cases 254 (63.5%) cases who underwent repeat CS were between age group 20 to 25 years and 146 (36.5%) cases were between age group 26 to 35 years. The difference between two age groups undergoing repeat CS was more with a P value < 0.05, which is significant. Most of the women undergoing repeat CS were in the age group of 20 to 25 years. Among the 400 cases 278 cases who underwent repeat CS were II gravidas and 122 cases were III and IV gravidas. The difference between the two groups is more with a P Value < 0.001 which is highly significant.

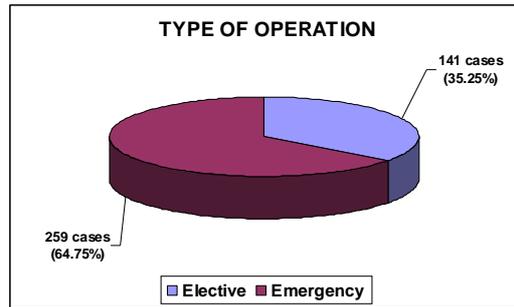


Figure 1: Type of operation done in study

Among the 400 cases Emergency repeat CS was done in 259 (64.75%) cases and Elective repeat CS was performed in 141 (35.25%) cases.

Table 2: Previous Abdominal Incision and Change of Skin Incision

	Total no. of cases	Percentage
Previous Abdominal Incision with repeat cesarean section		
SUMI	92	23%
SPTS	308	77%
Total	400	100%
Change of Skin Incision		
No change of skin incision with excision of previous scar	398	99.5%
Change of skin incision without previous scar excision	2	0.5%

Among the 400 cases the previous abdominal incision was subumbilical midline incision in 92 (23%) cases and suprapubic transverse incision was given in 308 (77%) cases. Among the 400 cases there was no change of skin incision with excision of the previous scar was done in 398 (99.5%) cases and change of skin incision without previous scar excision was done in 2 (0.5%) cases.

Table 3: Maternal Complications in study

Type of intra operative complication	Cases with 2 previous LSCS (n=50)		Cases with 1 previous LSCS (n=350)		Total cases with repeat CS (n=400)	
	No	%	No	%	No	%
Intra peritoneal adhesions	13	26%	66	18.85%	79	19.75%
Ventro fixation of uterus	Nil	Nil	3	0.85%	3	0.75%
Bladder drawn up	15	30%	52	14.85%	67	16.75%
Edematous bladder	1	2%	5	1.42%	6	1.5%
Bladder Adherent to LUS	10	20%	52	14.85%	62	15.5%
Bladder injury	1	2%	Nil	Nil	1	0.25%
Thinned out previous uterine scar	15	30%	81	23.14%	96	24%
Scar dehiscence	5	10%	20	5.71%	25	6.25%
Scar rupture	1	2%	2	0.57%	3	0.75%
Uterine incision extension	5	10%	15	4.28%	20	5%
Placenta praevia	2	4%	5	1.42%	7	1.75%
Abruption	3	6%	6	1.71%	9	2.25%
Placenta Accreta	1	2%	Nil	Nil	1	0.25%
Cesarean Hysterectomy done for placenta Accreta	1	2%	Nil	Nil	1	0.25%
Bowel injury	Nil	Nil	1	0.28%	1	0.25%
Post operative blood transfusion	14	28%	29	8.28%	43	10.75%

Among the 400 cases of women undergoing Elective and Emergency repeat CS in cases of 1 previous CS and 2 previous CS, the most common complication noted was thinned out previous uterine scar occurring in 96 (24%) cases. The next common complication noted was adhesions between various intraperitoneal structures.

Table 4: Fetal Complications in study

Type	Cases with previous 1 cesarean section (n=350)		Cases with 2 previous cesarean section (n=50)		Total cases (n=400)	
	No	%	No	%	No	%
NICU Admission	26	7.42%	8	16%	34	8.5%
Fetal demise	5	1.42%	1	2%	6	1.5%

Among the 350 cases of 1 previous cesarean section, 26 (7.42%) cases required NICU admission and 5 (1.42%) cases had fetal demise, among the 5 cases of fetal demise 2 cases were due to uterine rupture and 3 were due to other causes. Among 50 cases of 2 previous CS, 8 (16%) required NICU admission and 1 case had a fetal demise due to uterine rupture. The more number of NICU admissions in 2 previous CS cases were because these cases were associated with other medical complications such as Pre-eclampsia, Chronic Hypertension, Gestational Diabetes Mellitus, Renal Disease and Antepartum Hemorrhage.

Table 5: Concurrent Sterilisation

Type	Cases with 1 previous cesarean section (n=350)		Cases with previous 2 cesarean section (n=50)		Total cases (n=400)	
	No	%	No	%	No	%
Tubectomy done	224	64%	45	90%	269	67.25%
Tubectomy not done	126	36	5	10%	131	32.75%

P Value < 0.001 highly significant, Odds ratio = 0.2

Among the 350 cases of 1 previous section 224 (64%) cases underwent concurrent sterilization and among the 50 cases of 2 previous CS 45 (90%) cases underwent concurrent sterilization. The rate of concurrent sterilization is more in 2 previous CS cases undergoing a 3rd repeat CS when compare to 1 previous CS cases undergoing a 2nd repeat CS. The difference between the 2 groups is more with a P Value of < 0.001 which is highly significant

Table 6: Complication rate in relation to number of previous cesarean sections

Type of operation	Total	Total No of Cases with Complications	Percentage
Prev 1 CS	350	200	57.14%
Prev 2 CS	50	36	72%
Time of Operation			
Emergency	259	176	67.95%
Elective	141	60	42.55%
Total	400	236	59%

Among the 350 cases of 1 previous cesarean section, 200 (57.14%) cases had complications. Among the 50 cases of 2 previous cesarean section, 36 (72%) cases had complications. So the complication rate is more with repeat sections of 2 previous cesarean section cases when compared to 1 previous cesarean section cases. Among the total 400 cases of repeat sections, 236 (59%) cases had complications. Among the 259 Emergency repeat sections, 176(67.95%) cases had complications. Among the 141 Elective repeat sections, 60(42.55%) cases had complications. So the complication rate is more in emergency repeat sections when compared to Elective repeat sections.

Table 7: Complications in relation to number of previous cesarean sections

Bladder complications	2 Previous LSCS cases (n=50)		1 Previous LSCS cases (n=350)		Total cases (n=400)	
	No	%	No	%	No	%
Bladder drawn up	15	30%	52	14.85%	67	16.75%
Edematous bladder	1	2%	5	1.42%	6	1.5%
Bladder adherent to LUS	10	20%	52	14.85%	62	15.5%
Bladder injury	1	2%	Nil	Nil	1	0.25%
Uterine Complications						
Thinned out previous uterine scar	15	30%	81	23.14%	96	24%
Scar dehiscence	5	10%	20	5.71%	25	6.25%
Scar rupture	1	2%	2	0.57%	3	0.75%
Uterine incision extension	5	10%	15	4.28%	20	5%
Placental Complications						
Placenta praevia	2	4%	5	1.42%	7	1.75%
Abruption	3	6%	6	1.71%	9	2.25%
Placenta Accreta	1	2%	Nil	Nil	1	0.25%
Cesarean Hysterectomy done for placenta Accreta	1	2%	Nil	Nil	1	0.25%

Among the total bladder complications, the most common complication noted was drawn up bladder noted in 67 (16.75%) cases and the least common complication was bladder injury noted in 1 (0.25%). Bladder injury was noted in 1 case of 2 previous CS cases undergoing repeat CS and there was no bladder injury noted in cases of 1 previous section in this study. Among the total uterine complications noted in repeat CS in 400 cases the most common complication was thinned out previous uterine scar noted in 96 (24%) cases. The least common complication noted was scar rupture noted in 3 (0.75%) cases. Among the total placental complications, the most common complication was Abruptio noted in 9 (2.25%) cases and the least common complication was Placenta Accreta and Cesarean Hysterectomy done for Placenta Accreta was noted in 1 (0.25%) case.

DISCUSSION

The total number of deliveries in our hospital over a period of 1 yrs were 8302. Among them the total number of vaginal deliveries were 5107, the total number of cesarean sections performed were 3195 which included emergency and elective cesarean sections. Of the total number of cesarean sections performed 1937 cases were of primary cesarean sections where as 1258 cases were of repeat cesarean section. The cesarean section rate in our hospital is 38.48%. This high cesarean section rate at our hospital is due to the more number of unbooked cases and complicated cases referred from peripheries as our hospital is a tertiary care referral teaching hospital. Among the total cesarean section cases the primary cesarean sections contribute to 60.62% and repeat cesarean sections contribute to 39.37%. Even the percentage of repeat cesarean sections is also high because of the more number of cases with previous cesarean section report to us in a late stage with complications, poor birth spacing and doubtful scar integrity, where an emergency cesarean section has to be performed without giving a proper trial for vaginal delivery. Among the total number of repeat cesarean sections, I have taken 400 cases for this study which I had personally assisted, observed and recorded the findings. The cesarean section rate in our hospital is 38.48%. A cesarean section rate of 45% was reported in Puerto Rico between 1996 and 2002⁴. In a population based cross sectional study the public, charitable and private sector hospitals has cesarean section rates of 20%, 38% and 47% respectively⁶. In this study among the total cesarean sections performed over a period of 2 year, the repeat cesarean sections contributed to 39.37% and the incidence of all repeat cesarean sections was 36.5% in the study of Farkhundah Khursheed *et al*⁷. In some studies, the incidence of women with previous cesarean section

was around 50%⁶. During a cesarean delivery women are at an increased risk of injury than they are during a vaginal birth and the risk increases as the number of cesarean section increases. However many of these problems are associated with emergency cesarean sections. The overall complication rate in this study was 59% and it was 52.23% in the study of Farkhundah Khursheed *et al*⁷. In this study the complication rate in emergency repeat sections was 67.95% which was more when compared to elective repeat sections where the complication rate was 42.55%. The complication rate is higher in the emergency delivery than in the elective one. The most common complication noted in this study was Thinned Out previous lower uterine segment scar noted in 24%. This was because of the unbooked cases, complicated cases, referrals from peripheries with already established labour reporting to us in a very late stage. In the study Farkhundah Khursheed *et al*⁷, the incidence of thinned out lower uterine segment was 11.6%. The second most common complication noted in this study was Intraperitoneal Adhesions with an incidence of 19.75%. The incidence of adhesions was 27% in the study of Farkhundah Khursheed *et al*⁷. In this study the incidence of intraperitoneal adhesions was 18.85% in previous 1 cesarean section and it was 26% in previous 2 cesarean sections. Subsequent cesarean section increases the risk of dense adhesions with significantly more adhesions found in patients having 2 cesarean sections compared to patients having 1 cesarean section as observed in this study. Different studies show different rates of adhesion formation and its consequences. It is reported 12%⁸, 48%⁹ and 73%¹⁰. The overall rate of 19.75% was found in this study. The third most common complication noted was Drawn up Bladder with an incidence of 16.75% in this study. The least common complication noted in this study was bladder injury in 1(0.25%) case, bowel injury in 1(0.25%) case, Placenta accreta in 1(0.25%) case and Cesarean Hysterectomy done for Placenta accreta in 1(0.25%) case. The incidence of scar dehiscence was 6.25% in this study and the same incidence was found in study of Farkhundah Khursheed *et al*⁷. The incidence of Rupture Uterus was 0.75% in this study and it was 1.6% in Farkhundah Khursheed *et al*⁷ study which was comparable. The incidence of placenta praevia was 1.75% in this study and it was 2.5% in Farkhundah Khursheed *et al*⁷ study. The incidence of placenta accreta was 0.25% in this study and it was 0.8% in this study of Farkhundah Khursheed *et al*⁷. The incidence of cesarean hysterectomy done for placenta accreta was 0.25% in this study and it was 0.8% in the study of Farkhundah Khursheed *et al*⁷. The incidence of bladder injury was 0.25% in this study and 0.8% in the study of Farkhundah Khursheed *et al*⁷. The incidence of

bladder injury was 2% in cases of two previous sections and there was no incidence of bladder injury in 1 previous section cases. The incidence of scar dehiscence, scar rupture, placenta previa, placenta accreta and cesarean hysterectomy for placenta accreta was increased in cases with 2 previous cesarean sections when compared to cases with 1 previous cesarean section. The incidence of scar dehiscence was 5.71% in 1 previous cesarean section and it was 10% in 2 previous cesarean sections. The incidence of scar rupture was 0.57% in 1 previous cesarean section cases and it was 2% in 2 previous cesarean sections. The incidence of placenta previa was 1.42% in 1 previous cesarean section and it was 4% in 2 previous cesarean sections. There was no incidence of placenta accreta in 1 previous cesarean section cases and it was 2% in 2 previous cesarean section cases. There was no incidence of cesarean hysterectomy done for placenta accreta in one previous cesarean section cases and it was 2% in 2 previous cesarean section cases. The incidence of bowel injury was 0.25% in this study and it was 0.8% in the Farkhundah Khursheed *et al* study⁷. The incidence of bowel injury was 0.28% in 1 previous cesarean section whereas no bowel injury occurred in 2 previous cesarean section cases. The incidence of concurrent sterilisation was 64% in 1 previous cesarean section and it was 90% in 2 previous cesarean section cases. So, the acceptance of concurrent sterilisation was more after 3rd repeat cesarean section.

CONCLUSIONS

The Cesarean section is now safer than in the past, because of improvements in Anaesthesia, Antibiotics and Blood transfusion services, but still it carries a significant risk to the mother compared to a normal vaginal delivery. As the complication rate is more with repeat cesarean section following 2 previous cesarean sections, than with repeat cesarean section following 1 previous section, the woman and her family members should be counselled regarding concurrent sterilization. If they are not willing atleast temporary contraceptive methods should be advised. As no specific risk is associated with repeat cesarean sections that is not normally associated with

single cesarean sections one should judiciously perform cesarean sections and avoid unnecessary cesarean sections performed due to simple reasons such as lack of patience on the part of patient, lack of time and patience on the part of obstetrician and commercial attitude which is most commonly seen in private hospitals. As the repeat caesarean section procedure is more difficult and risky than primary cesarean section, it is prudent to involve a senior experienced obstetrician in the surgical procedure of repeat cesarean section.

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