

## Original Article

# Intra-operative difficulties in repeat cesarean sections – A study of 287 cases

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### Abstract

**Objectives:** To study the incidence of and type of surgical difficulties encountered in repeat cesarean sections. **Methods:** An observational prospective study of cases of repeat cesarean sections in a district hospital setup catering services to rural low-mid socioeconomic group. The case histories and intra-operative findings of all cases of repeat cesarean sections over a period of 14 months were analyzed to know the difficulties that might be because of previous cesarean surgery. **Results:** Out of the 1240 cesareans that were done during the study period 287 (23.14%) were repeat sections, abdominal wall cicatrization (24.39%) and some degree of adhesions between various intra-peritoneal structures (25.43%) were the chief causes of intra-operative difficulties. This resulted into inaccessibility of lower uterine segment in 4.53% cases, bladder injury in two cases (0.69%), extensive ventrofixation of uterus causing direct entry into uterine cavity without clearly defining peritoneal cavity occurred in 1.74% cases. In 5.92% cases take over of surgical procedure by senior obstetrician was necessary. **Conclusion:** Parietal wall and intra-peritoneal adhesions make repeat cesarean section a difficult procedure. It is prudent to involve a senior experienced obstetrician in the surgical procedure of repeat cesarean section.

**Key words:** repeat cesarean section, cesarean section difficulties, cesarean adhesions

### 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. The rate of cesarean section in the urban educated population in Chennai is 45% <sup>1</sup>. In medical colleges and teaching hospitals in India the overall rate for cesarean deliveries is 24.4% <sup>2</sup>. In a population based cross sectional study the public, charitable and private sector hospitals had cesarean section rates of 20%, 38%, and 47% respectively <sup>3</sup>. After any laparotomy it is fairly common to develop scar tissue, or adhesions, and cesarean sections are no exception. This scarring and adhesion formation is known to increase the major complications rate from 4.3% to 12.5% depending upon the number of previous cesarean sections <sup>4</sup>. Intra-peritoneal adhesions have an incidence of 5.5% to 42.5% <sup>5</sup>. Repeating a cesarean section in subsequent pregnancies is a

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common mode of delivery <sup>6</sup>, and happens variably in 11% to 24% cases of previous one cesarean section <sup>7</sup>. Prior cesarean delivery forms a major indication for repeat cesarean deliveries <sup>8</sup>. The present study aims at knowing the surgical difficulties encountered by a surgeon in this highly prevalent surgical procedure of repeat cesarean section.

### Methods

For this study case histories of repeat cesarean deliveries were studied and the data recorded. This was done prospectively for 14 months from 01-12-2003 to 31-01-2005. The existing methods of performing cesarean procedures were unaffected by the study. The surgeons were requested to note in particular the difficulties they encountered while operating on cases of previous cesarean section. The collected data was analyzed for type and incidence of the intra-operative problems.

### Results

In this study, over a period of 14 months, 19.72% births were by cesarean section (total births 6288, total cesarean sections 1240). Out of 1240 cesarean sections 287 (23.15%) were repeat cesarean sections and 953 (76.85%) were primary cesarean deliveries. Out of 287, 250 cases were of previous one section, 36 were of previous two sections and one was of previous three sections. Of the total cases of previous cesarean section, 173 (60.27%) were unbooked and 147 (51.21%) did not possess written medical records of their previous pregnancy or cesarean section. Joel Cohen type of low transverse skin scar indicating the use of Misgav Ladach method for their previous cesarean procedure was observed in 201 cases (70%), 80 cases (28%) had a midline infra-umbilical scar, and 6 cases (2%) had right paramedian scar. Among these cases of previous cesarean section, 109 (38%) weighed 45 kg or less (low maternal body weight) at term in the current pregnancy, 259 (90.24%) women had hemoglobin less than 10 gm%

**Table 1. Indications of cesarean sections (n=287).**

S. No.	Indication	Previous pregnancy <sup>a</sup> * No. of cases (%)	Present pregnancy <sup>b</sup> * No. of cases (%)
1.	Contracted pelvis*	03 (1.04)	06 (2.09)
2.	Cephalo-pelvic disproportion*	65 (22.64)	66 (22.99)
3.	Bad obstetric history *	04 (1.39)	16 (5.57)
4.	Obstructed labor *	05 (1.74)	08 (2.78)
5.	Previous 2 or > cesareans*	-	37 (12.89)
6.	Fetal distress	65 (22.64)	56 (19.51)
7.	Oligohydramnios*	06 (2.09)	01 (0.34)
8.	Twin pregnancy*	01 (0.34)	08 (2.78)
9.	Mal presentation *	41 (14.28)	34 (11.84)
10.	Scar dehiscence	-	19 (6.62)
11.	Rupture uterus	-	06 (2.09)
12.	Prolonged pregnancy*	05 (1.74)	10 (3.48)
13.	Hypertensive disease*	02 (0.69)	03 (1.04)
14.	Prolonged latent phase	05 (1.74)	02 (0.69)
15.	Failure to progress	11 (3.83)	05 (1.74)
16.	Cord presentation	-	03 (1.04)
17.	Placenta previa*	05 (1.74)	07 (2.43)
18.	No records, no information available	69 (24.04)	-
19	Total	287	287

<sup>a</sup>- indications of previous sections were available from written records in only 51.21% cases (147 cases); in few cases (71 cases, 24.04%) the indication verbally told by the patient or that extracted from history taking could be relied upon.

<sup>b</sup>- most prominent indication is mentioned; few patients had more than one reason.

\*- had these cases come antepartum, were sure to undergo elective cesarean section.

(4 gm% to 5.99 gm% in 10 cases, 6-7.99 gm % in 75 cases, 8-9.99 gm% in 174 cases and 10-12 gm% in 28 cases). In 265 cases (92.33%) repeat cesarean section was performed as an emergency procedure. In 196 cases (68.29%) there was a clear evidence of the need for elective repeat cesarean section (marked \* in table 1), had they reported before the onset of labor. Skin scars were excised in 117 (40.76%) cases. Abdominal wall cicatrization (very bad scars with extensive fibrosis) was seen in 70 (24.39%) cases of the total 287 cases. It was seen in 28 cases (32.55%) out of the total 86 cases of previous vertical incisions, and in 42 cases (20.89%) out of 201 of Joel Cohen type of skin incisions. In 49 cases (17.07%) skin incisions were changed when compared to previous procedure (Table 2), this resulted in inverted T or bow-arrow and rail road type of final scar outcomes. Abdominal wall cicatrization increased surgery duration by causing difficulties in opening abdomen and necessitating scar excision.

Intraperitoneal adhesions of varied types were seen in

73 cases (25.43%) out of the total 287 cases. Table 3 shows 118 instances of various intraperitoneal adhesions in these 73 cases. These adhesions not only slowed down the surgical procedure but also necessitated change of the surgeon to a more experienced one. This change to senior obstetrician happened in 17 cases (5.92%) for reasons like separating dense adhesions, controlling blood loss, repair of bladder injury and uterine incision extensions, and difficulties in baby extraction. In repeat procedures, 13 cases required a change in uterine incision over its location in the previous procedure (Table 4). Scar dehiscence and scar rupture was seen in 19 (6.62%) and 6 (2.09%) cases respectively. In 172 cases (59.93%) the patients underwent concurrent tubal ligation. Five cases had very dense and extensive type of adhesions between the anterior surface of the uterus and parietal wall. This prevented access to the free peritoneal cavity and gave a direct entry to the uterine cavity following incision of cicatrized layers of anterior abdominal wall. This happened in three cases of previous midline infraumbilical incisions and in two cases done previously by Misgav Ladach method.

**Table 2. Change of skin incision.**

Skin incision	No. of cases (%)	Resulting scar
Joel Cohen to Vertical	8 (2.78)	Inverted T/Bow Arrow
Vertical to Joel Cohen	31 (10.80)	Inverted T/Bow Arrow
Joel Cohen to right paramedian	1 (0.34%)	Inverted T/Bow Arrow
Right paramedian to Joel Cohen	2 (0.69)	Inverted T/Bow Arrow
Right paramedian to Vertical	1 (0.34)	Rail road
Vertical to right paramedian	6 (2.09)	Rail road
Total	49 (17.07%)	—

**Table 3. Intraperitoneal adhesions.**

S. No.	Adhesion: Structure and Structure	No. of cases <sup>a</sup> (%)
1.	Parietal peritoneum and anterior surface of uterus	19 (6.62)
2.	Parietal peritoneum and bladder	11 (3.83)
3.	Parietal peritoneum and omentum	14 (4.87)
4.	Parietal peritoneum and bowel	01 (0.34)
5.	Omentum and uterus	19 (10.09)
6.	Omentum and utero-vesical fold	02 (0.69)
7.	Bladder and uterus (dense)	32 (11.14)
8.	Bladder and uterus (loose advancement)	19 (6.61)
9.	Uterus and small bowel	01 (0.34)
10.	Total	118

<sup>a</sup>- few cases had more than one type of adhesions

**Table 4. Uterine incision locations in previous and present sections.**

S. No.	Previous section/Present section	No. of cases (%)
1.	Low transverse/Low transverse	273 (95.12)
2.	Low transverse / High transverse	03 (1.04)
3.	Low transverse/Inverted T	07 (2.43)
4.	Low transverse/Classical	03 (1.04)
5.	Classical/Classical	01 (0.34)

## Discussion

Modern obstetrics practice for medical, social, economic, and legal reasons has witnessed an increase in the primary cesarean section rates everywhere. This has created a common clinical entity of “previous cesarean section” in subsequent pregnancies, giving a high risk pregnancy status to the reference pregnancy. This raises the issue of not only deciding the mode of delivery – VBAC or elective cesarean section, but also of difficulties in repeat procedure making it a high risk surgical procedure. In developing countries where antenatal care seeking rate is poor and last moment reporting or transfer to tertiary units is very high, these high risk cases are managed as emergency sections as against the ideal for them, the elective cesarean. In the present study this resulted in a very high anemia rate, low maternal body weight and very high emergency cesarean section rate in these cases of previous cesarean section, further aggravating their risk state. Cases of primary cesarean section should be educated about the need of antenatal care, need of last few visits to a tertiary level centre in order to decide the mode of delivery and to undergo elective or emergency cesarean section in a center both better equipped and manned.

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