



ISSN: 2091-2749 (Print)  
2091-2757 (Online)

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## Relaparotomy after caesarean section

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### ABSTRACT

**Introductions:** Relaparotomy after caesarean section is rare and literature are scanty. The decision requires a good clinical judgment to save mother's life. Our objective was to analyse the outcome of relaparotomy after caesarean section at Patan Hospital.

**Methods:** This was a cross sectional study done at the department of obstetrics and gynaecology, Patan Hospital, Lalitpur, Nepal. Charts of the caesarean section from January 2010 to December 2014 were reviewed to analyze the cases of relaparotomy for incidence, indication, management and outcome. Descriptive analysis was done using SPSS.

**Results:** During 5 years, there were 17,538 caesarean deliveries, 39.15% of total 44,788 deliveries. Relaparotomy was done in 15 cases, 0.085% of 17,538 caesarean. Mean age was 26.6±4.7 years, 14 (93.3%) were between 25-35 years, 12 (80%) were primigravida. Indications for relaparotomy were pyoperitoneum (40%), hemoperitoneum (33.3%) and rectus sheath hematoma (26.7%). Out of 15 relaparotomies, 14 were conservative surgery and one required hysterectomy. There was no maternal mortality.

**Conclusions:** Relaparotomy rate in our study was eight in 10,000. Those requiring relaparotomy had fetal distress as indication for first caesarean.

**Keywords:** caesarean section, pyoperitoneum, relaparotomy

## INTRODUCTIONS

Caesarean section (CS) is considered to be a safe operation to circumvent maternal and fetal complication.<sup>1</sup> Primary caesarean rates are persistently increasing worldwide, presumably reflecting changes in maternal characteristics and obstetric practices.<sup>2,3</sup> Thus, increase in rates of major maternal complications are expected as this trend escalates.

Relaparotomy after CS is rare. Literature is scant and insufficient to make a valid comparison about this important issue.<sup>4,5</sup> Objective of this study was to determine the incidence, indication, management and outcome of relaparotomy after CS at Patan Hospital.

## METHODS

This was a cross sectional study done at the department of obstetrics and gynaecology of Patan Hospital, Patan Academy of Health Sciences (PAHS), Kathmandu, Nepal. The study duration was 5 years from January 2010 to December 2014. Ethical approval was taken from the Institutional Review Committee of PAHS. Records of all CS deliveries were reviewed to find out cases of relaparotomy. Demographics, obstetric variables, indications, intra-operative findings, and procedure done at relaparotomy were recorded in a structured proforma. The frequency and percentage distributions of the data were analyzed using SPSS version 20.

## RESULTS

There were 17,538 CS, (39.15%) out of total 44,788 deliveries. Relaparotomy was done in 15 (0.085% of 17,538 CS).

In 15 relaparotomies, the mean age was 26.6±4.7 years, 14 in age group of 20 to 35 years and one above 35 years. Twelve (80%) were primi, 2 (13.3%) were parity two and one (6.7%) was parity three. Twelve (80%) were

after emergency CS and 3 (20%) following elective CS. Indication for CS was meconium in 20%, Table 1.

**Table 1. Indication for CS in patients requiring relaparotomy (n=15)**

Indication of CS	Frequency	Percent
<b>Fetal Distress</b>	<b>6</b>	<b>40.0</b>
Meconium liquor	3	20.0
Fetal bradycardia	1	6.7
Persistent fetal tachycardia with GHTN	1	6.7
Failed IOL with Decreased fetal movement, Hypothyroidism, Morbid obesity	1	6.7
<b>Cephalopelvic disproportion</b>	<b>4</b>	<b>26.67</b>
CPD	1	6.7
CPD with previous section	1	6.7
CPD with previous section with epilepsy with GHTN	1	6.7
CPD with PROM	1	6.7
<b>Eclampsia</b>	<b>2</b>	<b>13.33</b>
<b>Non progress of labor</b>	<b>2</b>	<b>13.33</b>
<b>Preterm breech in labor</b>	<b>1</b>	<b>6.7</b>
<b>Total</b>	<b>15</b>	<b>100.0</b>

Note: CS-caesarean section, GHTN-gestational hypertension, IOL-induction of labor, CPD-cephalopelvic disproportion, PROM-premature rupture of membrane

Relaparotomy was done after 3 to 456 hours (19 days) after CS, mean duration of 129.4 hours (5.4 days), Table 2. Pyoperitoneum was indication for relaparotomy in six cases, Table 3. Conservative surgery i.e. peritoneal lavage, evacuation of hematoma and re-suturing was done in 14 cases and one had total hysterectomy (6.6% of 15). All recovered well postoperatively. Maternal mortality was nil.

**Table 2. Timing for relaparotomy after CS**

Duration (hours)	Frequency	Percent
<24hrs	3	20.0
24hrs-48 hrs	3	20.0
48hrs-72 hrs	1	6.7
>72hrs	8	53.3
Total	15	100.0

**Table 3. Indications for relaparotomy after CS**

Indications	Frequency	%
Rectus sheath hematoma	4	26.6
Hemoperitoneum	5	33.3
Pyoperitonium	6	40
Total	15	100

## DISCUSSIONS

Relaparotomy after CS in 0.085% (15 out of 17,835) in our study is lower than most reported series of 0.13% by Ahmed,<sup>6</sup> 0.2% by Levin,<sup>7</sup> 0.4% by Shiri<sup>8</sup> and 1.04% by Raagab,<sup>9</sup> possibly because Patan Hospital has good antenatal care.

Most of our cases (93.33%, 14 out of 15) were younger in the age group of 20 to 35 years, similar to the study by Biswas SP,<sup>10</sup> and Ahmed Khan,<sup>6</sup> possibly because of early marriage in our part of the world.

Emergency CS is an important risk factor for relaparotomy as seen from our finding of 12 (80% of 15) relaparotomies after emergency CS and only 3 (20% of 15) after elective CS. Seal SL<sup>11</sup> reports 95.5%, Raagab AE<sup>9</sup> 95.5%, and Ahmed Khan NB et al.<sup>6</sup> 85.18% of relaparotomy cases were following emergency CS deliveries.

In our study, the most common indication for CS in patients who later required relaparotomy was fetal distress in 6 (40%, Table 3), similar to Biswas SP<sup>10</sup> who has reported the commonest indication for primary caesarean section was prolonged labor and fetal distress in 40%. In study by Ahmed Khan NB et al.,<sup>6</sup> the most common indication for caesarean section was failure of progression of labor (29.6%) and fetal distress (22.2%).

In our series, the mean time of relaparotomy was 5.4 days after CS, whereas Levin<sup>7</sup> had an average of 5 hours, Biswas SP<sup>10</sup> reports 32.73% within 7<sup>th</sup> day, Raagab AE<sup>9</sup> within 5.5 hours, and Kessous R<sup>12</sup> had 51.2% relaparotomy within 24 hours after primary CS. In all these studies the commonest indication for relaparotomy was post partum hemorrhage (PPH), early detection followed by definitive relaparotomy. The delayed relaparotomy after primary CS in our study was because most of our cases had pyoperitoneum (40%, Table 3) which is generally manifested after 2<sup>nd</sup> or 3<sup>rd</sup> postoperative day.

The PPH after primary CS was the commonest cause for relaparotomy in study by Biswas SP,<sup>10</sup> Levin<sup>7</sup> and Seal SL<sup>11</sup> had 42.4% PPH and rectus sheath hematoma 27.3%. Incidence of infection, manifested as pyoperitonuem was higher in our case and PPH was lowest, Table 3.

Only one case required total hysterectomy out of 15 in our series and rest 14 were managed by conservative surgery, similar to a study

by Lurie,<sup>5</sup> who reports one hysterectomy out of 18. However, Ahmed et al.<sup>6</sup> reports hysterectomy was required in 21 (77.78%), of which 14 was total (66.66%) and 7 (33.33%) subtotal hysterectomy. In the study by Biswas SP,<sup>10</sup> hysterectomy or subtotal hysterectomy was done in 38.18% and conservative surgery was done in 61.82%. In the study by Kessous Roy,<sup>12</sup> hysterectomy was performed in 31.3% patients. As most of our cases had pyoperitoneum or rectus sheath hematoma, conservative surgery during relaparotomy was adequate.

There was no maternal mortality in our case unlike other study where maternal death was as high as 18.52% in Ahmed Khan NB et al,<sup>6</sup> 15.38% in Shyamal D<sup>13</sup> and 9% in Seffah<sup>14</sup> series.

## CONCLUSIONS

The relaparotomy rate following caesarean deliveries was low at 0.085%, due to pyoperitoneum and hemoperitoneum in two-third. Hysterectomy was required in one out of 15. Mortality was nil.

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