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ORIGINAL RESEARCH

STUDY OF INTRAOPERATIVE COMPLICATIONS OBSERVED IN LOWER SEGMENT CAESAREAN SECTION (LSCS) SURGERIES AT A DISTRICT HOSPITAL.

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ABSTRACT

Background: Caesarean section is probably the most common surgical procedure carried out in the field of obstetrics in both industrialized and low-income countries. The risk of complications increases with increasing number of cesarean sections with subsequent adverse fetal and maternal. Present study was aimed to study various intraoperative complications observed in lower segment caesarean section (LSCS) surgeries at a District hospital.

Material and Methods: Present study was hospital based, prospective, observational study, conducted in LSCS surgeries conducted at our hospital, had intraoperative surgical complication/s.

Results: Incidence of intraoperative complications was 2.78 %. Incidence of Intraoperative complications were more previous 2 LSCS cases (34.02 %), followed by previous 1 LSCS cases (39.18 %), previous 3 LSCS cases (5.15 %), as compared to primary CS (9.28 %). Intra-operative complications noted were extension of uterine incision (32.99 %), difficult delivery (27.84 %), intra operative atonic post-partum haemorrhage (21.65 %), scar dehiscence (14.43 %), bleeding from placental bed (11.34 %), bladder injury (4.12 %) & placenta previa (3.09 %). Cases were managed with combination of various surgical interventions such as obstetric hysterectomy, step wise devascularization, uterine compression sutures, bladder repair, & transfusion of blood. Among those cases mortality was observed in 1 case(post-partum hemorrhage).

Conclusion: Preoperative assessment by history, previous records, ultrasonography (placental location & invasion) with intraoperative readiness for additional procedures is need of hour to reduce morbidity & mortality in patients undergoing LSCS.

Keywords: Intra-operative complications, LSCS, placental location, previous LSCS.

INTRODUCTION

Caesarean section is probably the most common surgical procedure carried out in the field of obstetrics in both industrialized and low-income countries.[1] Hemorrhage due to uterine atony, adherent placenta, uterine rupture and PPH are still the causes of maternal death in developing countries.[2] With increase in the number of cesarean delivery; abnormal placental

adhesions, placenta previa has emerged as the most common indication in developed countries.[3]

The risk of complications increases with increasing number of cesarean section, the well-known complications are intraabdominal dense adhesions, morbid adherent placenta, uterine dehiscence/ uterine scar rupture with subsequent adverse fetal and maternal outcome, bowel and bladder injury and cesarean hysterectomy.[4,5]

Though modern technology and facilities have made this operation remarkably safe, which is mainly due to availability of antibiotics, safe anaesthesia, blood transfusion facilities and recent improvement in surgical techniques but still caesarean section is associated with increased risk of maternal morbidity and mortality as compared to vaginal delivery.[6] Present study was aimed to study various intraoperative complications observed in lower segment caesarean section (LSCS) surgeries at a District hospital.

MATERIAL AND METHODS

Present study was hospital based, prospective, observational study, conducted in department of obstetrics & gynaecology, at District hospital, Udhampur J&k India. LSCS surgeries done during January 2019 to December 2021 were considered for study. Study approval was taken from institutional ethical committee.

Inclusion criteria

- LSCS surgeries conducted at our hospital, had intraoperative surgical complication/s

Exclusion criteria

- Patients posted for upper segment caesarean section, elective caesarean hysterectomy
- Patients referred with outside intra-operative complications
- Cases presenting with rupture uterus.
- Patients with anaesthetic complications

Study was explained in local language to all patients undergoing LSCS & written consent was taken for participation & study. Demographic & clinical details such as age, parity, detailed obstetric history, course of present pregnancy, indication of previous caesarean, antenatal, intra and post-operative complications in previous pregnancy, any history of surgical procedure like D and C, findings of physical and obstetric examination, investigations (ultrasonography especially for placental localization) were noted in case record proforma.

Any intra-operative complication/s, surgical findings, additional procedures & their management (e.g. as uterine incision extensions, adhesions, thinned lower uterine segment, advanced bladder, extension of uterine incision, scar dehiscence, excess blood loss, uterine rupture, bladder injury, morbidly adherent placenta, caesarean hysterectomy, etc.) was noted. Follow-up was kept till discharge & outcome noted.

Data was collected and compiled using Microsoft Excel, analysed using SPSS 23.0 version. Statistical analysis was done using descriptive statistics.

RESULTS

During study period, we observed intraoperative complications in 97 cases, out of 3488 LSCS surgeries conducted, thus incidence of intraoperative complications was 2.78 %. In present study majority of patients were 26-30 years age group (43.3 %) & 21-25 years age group (34.02 %). Common risk factors noted were Obesity (BMI > 25 kg/m^2) (31.96 %), hypertensive disorders of pregnancy (22.68 %), previous laparotomy (22.68 %), Anemia (19.59 %), h/o intraoperative complication in previous LSCS surgery (8.25 %), History of myomectomy (4.12 %) & Intra-operative adherent placenta (3.09 %). Incidence of

Intraoperative complications were more previous 2 LSCS cases (34.02 %), followed by previous 1 LSCS cases (39.18 %), previous 3 LSCS cases (5.15 %), as compared to primary CS (9.28 %).

Table 1: General characteristics

Characteristics	**No. of Cases (n=97)**	**Percentage**
Age (Years)		
≤ 20	3	3.09%
21-25	33	34.02%
26-30	42	43.30%
31-35	14	14.43%
≥ 36	5	5.15%
High risk factors		
Obesity (BMI > 25 kg/m^2)	31	31.96%
Hypertensive disorders of pregnancy	22	22.68%
previous laparotomy	22	22.68%
Anaemia	19	19.59%
h/o intraoperative complication in previous LSCS surgery	8	8.25%
History of myomectomy	4	4.12%
Intra-operative adherent placenta	3	3.09%
History of Caesarean section/ hysterotomy		0.00%
None	9	9.28%
Previous 1	38	39.18%
Previous 2	45	46.39%
Previous 3	5	5.15%

In cases with previous LSCS, common indication was Impending scar dehiscence (37.11 %) followed by Elective LSCS for previous ≥ 2 LSCS (36.08 %), Fetal Distress (12.37 %) & Antepartum Hemorrhage (5.15 %). In cases with unscarred uterus common indication was Prolonged Labour (3.09 %), Premature Rupture of Membrane (PROM) (2.06 %), Abnormal Presentation (2.06 %) & Cephalopelvic Disproportion (2.06 %).

Table 2: Indications of caesarean section

Indication	**No. of Cases**	**Percentage**
In cases with previous LSCS		
Impending scar dehiscence	36	37.11%
Elective LSCS for previous ≥ 2 LSCS	35	36.08%
Fetal Distress	12	12.37%
Antepartum Hemorrhage	5	5.15%
Unscarred uterus cases		
Prolonged Labour	3	3.09%
Premature Rupture of Membrane (PROM)	2	2.06%
Abnormal Presentation	2	2.06%
Cephalopelvic Disproportion	2	2.06%

In present study intra-operative complications noted were extension of uterine incision (32.99 %), difficult delivery (27.84 %), intra operative atonic post-partum haemorrhage (21.65 %), scar dehiscence (14.43 %), bleeding from placental bed (11.34 %), bladder injury (4.12

%)&placenta previa (3.09 %).Cases were managed with combination of various surgical interventions such as obstetric hysterectomy, step wise devascularization, uterine compression sutures, bladder repair & transfusion of blood. Among those cases mortality was observed in 1 case (1-post-partum hemorrhage)

Table 3: Intra-operative complications

Intra operative complication	No. of Cases	Percentage
Extension of uterine incision	32	32.99%
Difficult delivery	27	27.84%
Intra operative atonic post-partum haemorrhage	21	21.65%
Scar dehiscence	14	14.43%
Bleeding from placental bed	11	11.34%
Bladder injury	4	4.12%
Placenta previa	3	3.09%
Bowel injury	0	0 %

DISCUSSION

The worldwide rise in CS is a major public health concern and cause of considerable debate due to potential maternal and perinatal risks, cost issues and inequity in access.[7] World Health Organization has recommended that Caesarean Section (CS) rates should not be more than 15%, as CS rates above this are not associated with additional reduction in maternal and neonatal mortality and morbidity.[8]

Raising trends in caesarean section may be due increased referrals of complicated pregnancies to higher centres, low threshold for LSCS with slightest indications of FHR abnormalities and decreasing trends in instrumental delivery, vaginal birth after CS. Other causes for the rise in caesarean deliveries in India include reasons such as the greater uptake of institutional deliveries overall, physician convenience in part due to an imbalance in the ratio of obstetricians to patients, and financial gain for caesarean deliveries in private sector hospitals.[9]

Women undergoing cesarean section have a higher morbidity and mortality rate than those having vaginal birth, such as massive postpartum hemorrhage, need for blood transfusion, anesthesia-associated complications, surgical risks (intestinal obstruction, wound dehiscence, wound scars, infection, etc.), and obstetric complications in subsequent pregnancies.[10]

Nidhi G,[11] noted that adhesions (38.33%), advanced bladder (20%), excess blood loss (10%), placenta accrete (1.67%), thinned out scar (5%), bladder injury (1.67%) were common intraoperative morbidities encountered. While Singh P et al.,[12] noted that intraoperatively adhesions between uterus, anterior abdominal wall and bladder were seen in 42.6% cases, 13 cases had placenta previa and 4 cases had adherent placenta.

Poorly healed uterine scar might affect the regeneration of the isthmus of uterus and make it thinner, resulting in much thinner lower uterine segment scar in subsequent pregnancy. Thin lower uterine segment scar is likely to rupture during labor. We noted higher incidence of scar dehiscence () as compared to other studies, such as Nazaneen S et al.,[13] (7.69%), Ramkrishnarao MA et al.,[14] (6.62%). Unsecured prediction of the integrity of the scarred lower uterine segment during labor appears to be one of the reasons for repeat caesarean sections.

Malakar A et al.,[15] noted that, intraoperative adhesions and extension of uterine incision were common intraoperative complications whereas PPH was the most common post-operative

morbidity. Intra operative complications were more in cases of emergency CS. In women with previous cesarean section/s, intraoperative morbidities such as adhesions, thin lower uterine segment, advanced bladder, extension of uterine incision, scar dehiscence, excess blood loss are encountered, may require caesarean hysterectomy. Similar findings were noted in present study.

Hemorrhage is the most frequent complication of the cesarean section during or after the surgical event, which eventually leads to additional interventions such as obstetric hysterectomy, step wise devascularization, internal iliac artery ligation, uterine compression sutures. The main complications of obstetric/peripartum hysterectomy comprise of blood and blood product transfusions, chances of surgical re-exploration because of continuous ooze and bleeding, febrile morbidity, disseminated intravascular coagulopathy, bladder/ureteral injury, postoperative depression, prolonged ICU stay or maternal death.[16]

A better effort in reducing relatively preventable primary caesarean section need enforcement which includes preventing failed induction by a better induction protocol, allowing vaginal birth after primary caesarean section, wait for spontaneous onset of labor up to 40 weeks and then induction, practicing external cephalic version for breech presentation , use of low forceps or ventose for second-stage delay, allow the second stage 3 hours in nulliparous before saying arrest in the second stage.[17]

CONCLUSION

Intra-operative complications in patients undergoing LSCS were noted more in women with increasing number of cesarean sections. Preoperative assessment by history, previous records, ultrasonography (placental location & invasion) with intraoperative readiness for additional procedures is need of hour to reduce morbidity & mortality in patients undergoing LSCS. Reduction in primary caesarean section, elective surgery in previous LSCS whenever indicated can be applied at institute level.

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