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Original Research Article

Record based analysis of indications and complications of 500 cases of lower segment cesarean sections at a tertiary care hospital

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ABSTRACT

Background: The drastically increasing rate of caesarean section is a topic of constant worry and analysis throughout the world. In order to understand the degree to which caesarean section may be preventable, it is important to know why caesarean section are performed. This study is aimed to find out the rate of caesarean section at our institute, various indications of the procedure and complications related to them.
Methods: This study was carried out retrospectively in the department of obstetrics and gynecology at Chirayu Medical College and Hospital, Bhopal. Study period was from January 2017 to December 2017. 500 cases of lower segment cesarean section were studied including both elective and emergency caesarean sections. Statistical analysis of age, parity, period of gestation, indications of LSCS and complications was done.
Results: The rate of caesarean section came out to be 47.7%, which is far above recommended. Majority of patients (81.6%) were in 21-30 years age group; while the number of primary and repeat caesarean section were comparable (40.8% and 59.2%respectively). Commonest indication was previous LSCS (31.6%) followed by fetal distress (21.6%). Surgical site infection was present in 4.6% cases whereas, post-partum hemorrhage occurred in 5.8% cases. Three patients underwent obstetric hysterectomy and two cases of maternal mortality were reported among post LSCS patients.
Conclusions: Increasing rates of caesarean section has contributed to maternal morbidity along with financial burden. Individualization of the indication and careful evaluation, following standardized guidelines, practice of evidenced-based obstetrics and audits in the institution, can help us limit rate of caesarean section.

Keywords: Caesarean section, Indication of caesarean section, Maternal morbidity

INTRODUCTION

Caesarean delivery is defined as the birth of a live or dead foetus through incisions in the abdominal wall (laparotomy) and the uterine wall (hysterotomy). Since 1985 the international healthcare community has considered the ideal rate for caesarean section to be between 10-15%.[1] Cesarean section is one of the most commonly performed surgeries today with an increasing rate both in developed and developing countries.[2,3] Increasing rates can be partly explained by improved surgical and anesthetic techniques, advent of electronic fetal monitoring and availability of tertiary care neonatal facilities. As caesarean section rates increased above 10% and up to 30%, no effect on neonatal or maternal mortality rates was observed.

Moreover, as with any surgery, caesarean sections are associated with short- and long-term risk which can extend many years beyond the current delivery and affect the health of the woman, her child and future pregnancies.[4-6] Also, potentially medically unjustified

cesarean sections appear to command a disproportionate share of global economic resources.[7]

The indications of caesarean section vary among institutions as no standard classification system exists for indications of caesarean section.[8,9] A major challenge is that definitions are not standardized and indications can be multiple or related.[10] Among the existing systems used to classify caesarean sections, the 10-group classification (also known as the 'Robson classification') has become widely used in many countries in recent years.[9-11] The system stratified women according to their obstetric characteristics, thereby allowing a comparison of caesarean section rates with fewer confounding factors.

In order to understand the degree to which caesarean section may be preventable, it is important to know why caesarean section is performed. This study is aimed to find out various indications of the procedure and their contribution to the total caesarean section rate which may help us to reduce the incidence of caesarean section in future.

The aims and objective of this method is to analyze the rate of cesarean section in our institute, to analyze the maternal and fetal indications for caesarean section, to know the intra operative and post-operative complications.

METHODS

The present study was a retrospective study conducted in the Department of obstetrics and gynecology at Chirayu Medical College and Hospital, Bhopal from 1st February 2018 to 15th April 2018. The case record of patients who had undergone caesarean section in the institute between 1st January 2017 to 31st december 2017 were traced from the medical records department and operation theatre registers, after approval from research committee of the hospital. All cases of caesarean section whether elective or emergency were included in the study. All the relevant information with respect to demographic profile, clinical presentation and indication of caesarean section, intra operative findings and postoperative complications were noted in a preformed proforma and analyzed in detail.

Inclusion criteria

- All patients undergoing caesarean section whether elective or emergency, during the study period were included in study.

Exclusion criteria

- Patients, who had undergone caesarean section elsewhere, admitted at Chirayu medical college during postoperative period, were excluded from the study.

RESULTS

In this study, the rate of caesarean section came out to be 47.7% whereas 52.3% patients had delivered vaginally.

Table 1: Distribution of cases according to mode of delivery.

Type of delivery	Number	Percentage
Vaginal delivery	548	52.3
Caesarean section	500	47.7
Total delivery	1048	100

In present study, 81.6% patients were in 21-30 years age group, which is in accordance to the trend of early marriage and child birth in our country. 12.2% patients were in 31-35 years age group. Patients>35 years of age were 3.8%. Only 12 (2.8%) cases were below 20 years of age.

Table 2: Distribution of cases according to age.

Age group	No. of cases	Percentage
<20 years	12	2.4
21-25 years	209	41.8
26-30 years	199	39.8
31-35years	61	12.2
>35years	19	3.8

In present study 59.2% patients were multigravida, while 40.8% patients were primigravida.

Table 3: Distribution of cases according to obstetric history.

Parity	No. of cases	Percentage
Primigravida	204	40.8
Multigravida	296	59.2
Total	500	100

Majority (76.8%) of caesarean section were done at term gestation. Twelve percent patients had undergone caesarean section at <37 weeks of gestation while 10.8% cases were post-dated pregnancies.

Table 4: Distribution of cases in relation to period of gestation.

Period of gestation	No. of cases	Percentage
Preterm (<37weeks)	62	12.4
Term (≥ 37 weeks)	384	76.8
Postdated(>40wks)	54	10.8

In present study, 74.6% patients had babies with birth weight more than 2.5kg. Only 4.4% babies were below 2kg of weight whereas, 21% babies were between 2.1 to 2.5kg.

Table 5: Distribution of cases according to birth weight of baby.

Birth weight	No. of cases	Percentage
<2kg	22	4.4
2-2.5kg	105	21
2.6-3kg	225	45
>3 kg	148	29.6

In present study, most common indication came out to be previous caesarean section (31.6%), followed by fetal distress (21.6%). About twelve percent patients were operated for cephalo pelvic disproportion (CPD) and 10.6% had non-progress of labour (NPOL). The incidence of failed induction and placenta previa was equal (2.4%). Obstructed labour, abruption placentae and high priority fetus were minor indications each accounting for <1% cases.

Table 6: Distribution of cases according to indication of cesarean section.

Indication	Number	Percentage
Previous caesarean section	158	31.6
Fetal distress	108	21.6
Non-progress of labour	53	10.6
Cephalopelvic disproportion	59	11.8
Breech	41	8.2
Severe oligohydramnios with IUGR	26	5.2
Failed induction	12	2.4
Placenta previa	12	2.4
Eclampsia /severe pre-eclampsia	8	1.6
Multifetal gestation	7	1.4
Malpresentation	5	1.0
Abruption placentae	4	0.8
High priority fetus	4	0.8
Obstructed labour	3	0.6

In present study, 5.8% patients had post-partum haemorrhage, 10.2% patients required blood transfusion and surgical site infection occurred in 4.6% cases.

Table 7: Distribution of cases according to complications.

Complications	Number	Percentage
Blood transfusions	51	10.2
Post-partum hemorrhage	29	5.8
Obstetric hysterectomy	03	0.6
Surgical site infection	23	4.6
Dense adhesions	05	1.0
Maternal mortality	02	0.2

Intra operatively dense adhesions were present in five cases. Three patients underwent obstetric hysterectomy while maternal mortality occurred in two post-operative patients.

DISCUSSION

Authors observed the rate of caesarean section is 47.7% in present study which is much above the norms set by WHO. Similarly, higher rates of caesarean section were observed in studies done at tertiary care hospital in jaipur as 31.8% and 31.46%.[12,13] Mittal et al, reported a rising rate of caesarean section from 17.15% in 2001 to ≥28.93% in 2011.[14] A rate of 54.9% was reported in mainland China in 2011 by Lieu et al and 21.3% in UK in 2000.[15,16] The overall rate is higher in present study as it is done at a tertiary care center where more women with high risk pregnancies are admitted. Also, this institute caters to a large population of referred cases from nearby PHCs and CHCs. It is also possible that caesarean section rates have been overestimated as vaginal deliveries at home are not reported.

The most common indication for caesarean section in present study was previous caesarean section (31.6%). Anand Nikhil et al,and Pandya J M et al also reported 42.09% and 46.2%, respectively as the most common indication for caesarean section.[17,18] After one LSCS there is 67% chance of having repeat caesarean delivery.[19] The low threshold for performing VBAC (vaginal birth after caesarean section) is probably due to fear of uterine rupture in labour which is 5.2/1000 VBAC compared with (1.6/1000) ERCD (elective repeat caesarian delivery) and it can be catastrophic leading to perinatal death (1/2000) and very rarely maternal death.[20-22]

On the other hand, the secondary rise in repeat caesarean delivery has been associated with an increase in severe complications particularly the complication of placentation like placenta previa and placenta accreta which in turn increases the maternal morbidity and even mortality.[23,24]

In present study trial of labour after caesarean section was given very judiciously as many patients were not having documentation of previous caesarean records, so were not candidate for VBAC. Authors are working on this group to decrease the rate of repeat caesarean section. In our setup no trial was given to previous two or more scars due to presumed risk of maternal and fetal complications.[25]

Second most common indication for caesarean section was found to be fetal distress (21.6%). This could be attributed to very liberal use of CTG and intense fetal monitoring. Similar results were reported by Pandya J M et al, and Liu et al (11.81%).[18,26] Non-progress of labour (10.6%) and CPD (11.8%) contributed to a major proportion of cases. Authors observed 29.6% of newborns with birth weight >3kg which is due to better antenatal care and increase in number of mothers with

GDM with macrosomic babies leading to higher rates of CPD and NPOL. Caesarean section due to breech was 8.2% and severe oligohydramnios with IUGR was 5.2%. Improved NICU facilities have led to increased number of caesarean sections in preterm, PPROM and IUGR cases. There has been an increase in number of patients with age >35yrs and conceptions after artificial reproductive technique leading to increased apprehension in mothers for the wellbeing of their unborn child which has also contributed to increased rate of caesarean section. Post-partum haemorrhage (5.8%) and dense adhesions (1%) were the common complications during caesarean section. Two patients underwent classical caesarean section followed by obstetric hysterectomy due to placenta previa with increta. One obstetric hysterectomy was done following atonic PPH not controlled by uterotonics and internal iliac artery ligation. Chavda D et al, reported similar complications in their study. Two cases of maternal mortality were reported.[27]

CONCLUSION

With time, despite increased safety of caesarean section, increasing rates of caesarean section has contributed to maternal and neonatal morbidity along with financial burden. Individualization of the indication and careful evaluation, following standardized guidelines, practice of evidenced-based obstetrics and audits in the institution, can help us limit caesarean section rate.

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