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Original Research Article

A cross sectional study of indications and complications of primary caesarean section at district hospital Patiala

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ABSTRACT

Background: Caesarean section is one of the major oldest surgical procedure that has been performed all over world to save life of mother and fetus. The steadily increasing global rates of caesarean section have become one of the most debated topics in maternity care, as its prevalence has increased alarmingly in recent years. The aim is to assess the indications and complications of primary caesarean section in primigravida and multigravida.
Methods: A cross sectional study carried out over a period of 1 year from April 2022 to March 2023, among 300 pregnant women from labour room in Mata Kaushalya District Hospital, Patiala by simple random sampling method.
Results: Majority 54.7% of cesarean section were of primigravida and 45.3% were of multigravida. Maximum number of caesareans was between 26-30 yrs of age group. 68% women underwent emergency caesarean section and 32% underwent elective caesarean section. 6% underwent caesarean section at <37 weeks gestational age, maximum 83%caesarean section were at 37- 40 weeks gestational age and 11% caesarean section were at >40 weeks gestational age. Among primigravida, majority 35%were fetal distress, 24.29% CPD, malpresentation and malposition were 6.77%, 5.08% NPOL, 3.38% were placenta previa, 2.25% were IUGR, 3/177 (1.69%), severe oligohydroamnios 1.69%, preeclampsia and 1/177 (0.56%) were abruptio placenta. Among multigravida women 41.46% had most common indication was fetal distress, 2.43% had non progress of labour, 14.63% had malpresentations and malpositions.
Conclusions: The proportion of primigravida undergoing primary Caesarean delivery was much more than multigravida. However, complications related to primary CS was much higher in multigravida.

Keywords: Primary cesarean section, Primigravida, Multigravida, Cephalopelvic disproportion, Fetal distress, Low lying placenta

INTRODUCTION

Caesarean (CS) is one of the major surgeries performed in obstetrics worldwide as a lifesaving procedure for mother and fetus.[1-3] Caesarean delivery defines the birth of fetus via laparotomy and then hysterotomy. This definition is not applied to removal of fetus from abdominal cavity in case of uterine rupture or with abdominal pregnancy.[4] Primary caesarean delivery defined as caesarean deliveries out of all births in women who have not had a previous caesarean delivery.[5] Many factors like maternal request, high risk pregnancy and various fetal conditions and with advancement of technique, better anaesthesia, blood transfusion facilities, better antibiotic therapy c-section rate has been increase rapidly in recent years. Rapid increase of Cesarean section rate has become a serious public health issue because it has been found that the high rate of caesarean section does not necessarily contribute to

an improved pregnancy outcome. In fact it acts as double sword . Unindicated c-section exposes mother to surgical risk including bowel and bladder injury, increase hemorrhage risk, sepsis, post operative peritonitis, deep venous thrombosis and anaesthetic complications. Later there is an increase in incidence of placenta previa and accreta in subsequent pregnancies.[6-8] Fetal risk include injury to fetal presenting parts, neonatal respiratory distress and transient tachypnea of newborn.[9,10] However when cesarean sections are medically justified and planned they lower risk of birth injury such as asphyxia, shoulder dystocia, fractures. It is also beneficial for women having previous pelvic and uterine surgeries or medically unfit for vaginal delivery. Thus indicated c section can effectively prevent maternal as well as perinatal morbidity and mortality.[11] As there is no standard classification system for indication of caesarean section the indication vary among institutions.

The most common indications of caesarean section are as follows, Fetal indications are Fetal distress, Absent liquor, Severe IUGR, Oligohydramnios, Multiple gestation, Cord prolapse, Hand prolapse, Malpresentation or malposition-Breech, Face, Brow, Transverse lie, Oblique lie, Deep transverse arrest. Maternal indications are cephalopelvic disproportion, failure of progress of labour/failed induction of labour/NPOL, Obstructed labour, Placenta previa, abruptio placenta, bad obstetric history, elderly primigravida, maternal diseases. Primary caesarean section performed on a woman is of much obstetric significance and needs an in-depth study. Hence this study was taken up to study and understand the trends and profiling of primary CS in our tertiary care centre, which in turn helps us to identify strategies for reducing primary caesarean deliveries.[5]

METHODS

A cross sectional study carried out over a period of 1 year from April 2022 to March 2023, among 300 pregnant women from labour room in Mata Kaushalya District Hospital, Patiala by simple random sampling method. All necessary details were collected from the records after obtaining permission from medical record department.

Inclusion criteria

All primigravida with pregnancy of >28 weeks of gestation, who have undergone caesarean section, multigravida with pregnancy of >28 weeks of gestation (gravida 2 and above), each of whom has had a previous vaginal delivery of viable foetus and who have undergone primary caesarean section in the present pregnancy were included.

Exclusion criteria

Multiple pregnancies in the present pregnancy among both groups, woman with non-viable pregnancies, Women with previous history of caesarean section and Women with rupture uterus and women with ectopic pregnancy were excluded.

RESULTS

Total no. of deliveries from March 2022 to April 2023 was 2799 out of which 300 primary caesarean sections were done during this period. So, incidence during this study period was 10.71%. Out of 300 cases164/300 (54.7%) were primigravida and 136/300 (45.3%) were multigravida.

Table 1: Frequency of primary caesarean section.

Total no. of deliveries	Primary caesarean
2799	300

Table 2: Obstetric score.

Obstetric score	N	%
Primigravida	164	54.7
G2A1	6	2.0
G2P1LO	1	0.3
G2P1LI	58	19.03
G3A2	33	11.0
G3P2L0	3	1.0
G3P2L1	4	1.3
G3P2L2	10	3.3
G3P1L1A1	6	2.0
G4P1LOA2	3	1.0
G4P2L0A1	1	.3
G4P3L2	1	.3
G4P3L3	5	1.7
G5A4	2	0.7
G5P1L0A3	3	1.0
G5P2L0A2	1	0.3
G6P1L1A4	1	0.3
Total	300	100.0

Out of 300 cases taken up for primary caesarean section, 177 were primigravida, 62/177 (35%) were fetal distress, 43/177 (24.29%) were CPD, malpresentation and malposition were 12/177(6.77%), 9/177 (5.08%) were NPOL, 3/177 (1.69%) were oligohydramnios, 6/177 (3.38%) were placenta previa, 4/177 (2.25%) were IUGR,3/177 (1.69%) preeclampsia and 1/177 (0.56%) were abruptio placenta. Out of 300 cases taken up for primary caesarean section, 123 were multigravida women, 51/23 (41.46%) had most common indication was fetal distress, 3/123 (2.43%) had non-progress of labour, 18/123 (14.63%) had malpresentations and malpositions, 5/123 (4.06%) had bad obstetric history, 6/123 (4.87%) had CPD, 3/123 (2.43%) had severe oligohydramnios, IUGR 5/123 (4.06%) and placenta previa constitute 11/123 (8.94%), abruption placenta 3/123 (2.43%) and severe preeclampsia constitute 1/123 (0.81%). Out of total 300 pregnant women 204 women underwent emergency caesarean section and 96 underwent elective caesarean section.

Table 3: Indication of caesarean in primigravida and multigravida.

Indication	Parity					
	Primi		Multi		Total	
	N	%	N	%	N	%
Fetal distress	62	20.66	51	17	113	37.66
Severe IUGR	4	1.33	5	1.66	9	3.0
Severe oligohydramnios	3	1	3	1	6	2.0
Twin with malpresentation	4	1.33	1	0.33	5	1.66
Malpresentation	12	3.0	18	3.0	30	10.0
Cord prolapse	0	0	1	0.33	1	0.33
Hand prolapse	0	0.00	1	0.33	1	0.33
CPD	43	14.33	6	2.0	49	16.33
NPOL	9	3	3	1	12	3.0
Failure of induction	22	7.33	13	4.33	35	11.66
Uncontrolled PIH	3	1	1	0.33	4	1.33
Placenta previa	6	2	11	3.66	17	5.66
Abruptio placenta	1	0.33	3	1	4	1.33
Obstructed labour	2	0.66	1	0.33	3	1.0
BOH	0	0.0	5	1.66	5	1.66
Elderly Primi	4	1.33	0	0.0	4	1.33
Maternal request	2	0.66	0	0.00	2	0.66
Total	177	59	123	41	300	100

Irrespective of various demographic factors rate of emergency caesarean section was more than elective caesarean section (Table 5).

Table 4: Distribution of type of caesarean section.

Type of caesarean section	N	%
Elective	96	32.0
Emergency	204	68.0
Total	300	100.0

Table 5: Distribution of age.

Age	N	%
16-20	10	3.3
21-25	63	31.0
26-30	126	42.0
31-35	64	21.3
36-40	37	12.3
Total	300	100.0

Table 6: Distribution of antenatal care.

Antenatal care	N	%
Booked	1121	40.3
Un-booked	179	59.7
Total	300	100.0

Out of 300 cases of primary caesarean section taken, maximum number of caesarean was between 26-30 yrs of age group. Among 300 pregnant women 40.3% were Booked and 59.7%were unbooked. Out of 300 pregnant women 6% underwent caesarean section at <37 weeks gestational age, maximum 83% caesarean section were at 37-40 weeks gestational age and 11% caesarean section were at >40 weeks gestational age.

Table 7: Distribution of gestational age.

Gestational age (weeks)	N	%
<37	18	6.0
37-40	249	83.0
>40	33	11.0
Total	300	100

Table 8: Distribution of postoperative period.

Post-operative period	Frequency in primi	Multipara	Total	%
Uneventful	130	120	250	83.33
UTI	8	7	15	5.0
Wound infection	7	12	20	6.66
Puerperal fever	5	10	15	5.0
Total	150	150	300	100

Out of 300 pregnant women who underwent primary caesarean section, 250/300 (83.33%) have uneventful postoperative period, 20/300 (6.66%) have wound infection in postoperative period, 15/300 (5.0%) have urinary tract infection (UTI) in postoperative period, and 15/300 (5.0%) have puerperal fever in postoperative period.

DISCUSSION

A hospital based cross sectional study was carried over a period for 1 year with an aim to study on analysis of indications, incidence and outcome for primary caesarean sections. In present study, CS rate was high because ours is tertiary facility; high risk patients from peripheral areas, those in established labor, who need specialist and immediate care and those babies who need SNCU care, were referred to us that's why women landed in emergency CS. Continuous electronic fetal monitoring (EFM) was introduced to detect fetal distress. It was hoped that this would reduce deaths during birth and the frequency of cerebral palsy. However, while the use of EFM has been directly associated with an increase in caesarean delivery, it has not led to better health outcomes.[12]

Table 9: Distribution of parity.

Author	Primigravida (%)	Multigravida (%)
Joshi et al[12]	55	45
Nigar et al[13]	68.1	31.9
Present study	59	41

Table 10: Distribution of fetal distress.

Authors	Fetal distress (%)
Daniel et al.[16]	30.3
Das et al.[17]	32.38
Present study	37.66

Table 11: Distribution of post operative complication.

Authors	Post-op complications (%)
Somalwar et al.[18]	16.5
Das et al.[17]	12.02
Present study	16.66

When fetal distress is suspected, this should be confirmed by fetal blood sampling before proceeding with caesarean section, unfortunately, this technique is not available in our unit. In our study 0.66% of primary caesarean delivery on maternal request which can be avoided by proper counselling of patients explaining merits and demerits of cesarean delivery. Raising trends in caesarean section may be due Referral hospital gets larger number of complicated pregnancies, caesarean section performed for slightest indications of FHR abnormalities, decreasing trends in instrumental delivery, vaginal birth after CS. Two important strategies for reducing caesarean deliveries are to increase the number of vaginal deliveries among women who have had caesarean deliveries and to increase the number of operative vaginal deliveries. The efficient way to lower the repeat caesarean rate is trial of labor and the way to reduce the number of primary caesareans is in practicing of the guidelines for various indications.

In present study primigravida were (59%) more than multigravida (41%.In study done by Joshi et al and Nigar et al.[12,13] In our study 68% of pregnant women underwent caesarean section inemergency and 32% were elective. This was comparable with study done by Govendera et al, Yadav et al.[14,15] Our study shows fetal distress to be 37.66% which is comparable to study by Daniel et al and Das et al.[16,17] Complication rate in our study results are comparable to study done by Somalwar et al and Das et al.[17,18] Incidence of total primary caesarean section in our study was 300/2799 10.7%. Out of 300 cases 177/300 (59%) were primigravida and 123/300 (41%) were multigravida, 40.3% were Booked and 59.7% were unbooked, 204,68% women underwent emergency caesarean section and 96,32% underwent elective caesarean section. Amongst primigravida, 62/177(35%) were fetal distress, 43/177 (24.29%) were Cephalopelvic disproportion, malpresentation and malposition were 12/177 (6.77%), 9/177 (5.08%) were NPOL, 3/177 (1.69%) were oligohydramnios, 6/177 (3.38%) were placenta previa, 4/177 (2.25%) were IUGR,3/177 (1.69%) preeclampsia and 1/177 (0.56%) were abruptio placenta. Amongst multigravida women, 51/23 (41.46%) had most common indication was fetal distress, 3/123 (2.43%) had non progress of labour, 18/123 (14.63%) had malpresentations and malpositions, 5/123 (4.06%) had bad obstetric history, 6/123 (4.87%) had CPD, 3/123(2.43%) had severe oligohydramnios, IUGR 5/123 (4.06%) and placenta previa constitute 11/123 (8.94%), abruption placenta 3/123 (2.43%) In and severe preeclampsia constitute 1/123 (0.81%). In our study maximum 83% caesarean section were at 37- 40 weeks gestational age and 11% caesarean section were at >40 weeks gestational age, 6% underwent caesarean section at <37 weeks gestational age, maximum number of caesarean was between 26-30 yrs of age group. Out of 300 pregnant women who underwent primary caesarean section, 250/300 (83.33%) have uneventful postoperative period, 20/300 (6.66%) have wound infection in postoperative period,15/300 (5.0%) have urinary tract infection (UTI) in postoperative period, and 15/300 (5.0%) have puerperal fever in postoperative period. Maternal complications were higher in multigravida as compared to primigravida.

CONCLUSION

The proportion of primigravida undergoing primary Caesarean delivery was much more than multigravida. However, complications related to primary CS was much higher in multigravida. The incidence of primary CS is higher in a district hospital with a lot of referrals and handled cases from periphery and rural health centres. However, every effort should be made to provide cesarean section to women in need, rather than to achieve a specific rate.

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