



INDICATIONS OF CESAREAN SECTION IN A TERTIARY CARE HOSPITAL IN DELHI

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ABSTRACT

Introduction: Cesarean rates have almost doubled globally from 12% in year 2000 to 21% in 2015. Around 10-15% pregnant women need cesarean section (CS) which can be life saving for both mother and baby. Scientific, social, cultural and medico-legal reasons are seen to be the reason behind this increase in CS. Besides being life- saving, CS also lowers the future risk of incontinence and prolapse in women. As compared to vaginal birth, maternal mortality and maternal morbidity is higher after CS. In pregnancies after CS there is dose dependent increase in risk of uterine rupture, abnormal placentation, ectopic pregnancy, stillbirth and preterm birth. Babies born via C-section have been found to have different hormonal, physical, bacterial and medical exposures during birth, which can subtly alter their health. Common indications for CS are fetal distress, malpresentations, cephalon-pelvic disproportion, non-progress of labor, hypertensive disease and antepartum hemorrhage. Rates of cesarean have increased because the procedure has become safer there is an increase in offering and acceptance of this surgery. Beside this, there is a decrease in VBAC trial, operative vaginal deliveries (Forceps/Ventouse) and threshold of patients for bearing labor pains and there is increase in litigations, electronic monitoring, decreasing and cesarean on maternal request. So there is need to study indications and their weight age in contribution to this procedure.

Material and methods: This retrospective observational study was done in Deptt. of Obs and Gynae in NDMC Medical College & Hindu Rao Hospital. Case records of 140 patients who underwent cesarean section from November 2018 to January 2019 were reviewed.

Results: Current cesarean rate in our hospital is 22%. Previous cesarean was the commonest reason seen in 43% cases. CPD, fetal distress and malpresentations were the common cause of cesarean and together contributed to half of all the indications. Failed IOL accounted for 10% of all the cesareans. Cesarean done on maternal request was 5% and its contribution to cesarean section was almost same as severe preeclampsia, non- progress of labor, decrease fetal movement and severe oligohydramnios with or without fetal growth restriction. There were 2 cases with cord around neck as indication for CS.

Discussion: The routine indications for cesarean section like previous CS, CPD, malpresentation, fetal distress, failed induction of labor are comparable to other studies. CSMR contributed to 5% of all cesareans and cord around neck was an indication in 2 cases which was not reported by previous studies.

Conclusion: The decision to do a cesarean section should be individualised so that it is done timely in a needy patient and unnecessary cesarean sections are avoided. In modern era of safe obstetrics, cesarean on maternal request and cord around the neck have emerged as newer indications for cesarean section. Besides educational interventions for women, audit of cesarean sections and timely feed back to health professionals about indications for cesarean section should be routinely done.

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INTRODUCTION

Globally, the rate of caesarean section (CS) almost doubled between 2000 and 2015 without significant benefit to the health of women or their babies. The cesarean rates have risen from 12% in the year 2000 to 21% in 2015. The number of C sections done annually have increased from 16 million in 2000 to 29.7 million in 2015. This was reported after compiling data from 169 countries. Scientific, social, cultural and medico-legal reasons are seen to be the reason behind this increase in CS. This increase in CS rate is also due to more births taking place in health institutions (about two-thirds of the increase)

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and to greater frequency of intervention through C-section in health facilities (one-third of the increase).¹ Reasons for increase in cesarean rate are increase in primary cesarean section rate, a decrease in VBAC trial, decrease in operative vaginal deliveries (Forceps/Ventouse), increase in litigations, increasing facility of electronic monitoring, and decreasing threshold of patients for bearing labor pains.

Cesarean section, the most common obstetric surgery can be a life-saving procedure for both mother and baby if complications occur during pregnancy or birth for example in malpresentation, non-progress of labor, antepartum hemorrhage, fetal distress or hypertensive disease. Besides being lifesaving, CS also lowers the future risk of incontinence and prolapse in women. On the other hand, CS can lead to short-term and long-term health effects for women and

children. As compared to vaginal birth, maternal mortality and maternal morbidity is higher after CS. In pregnancies after CS there is dose dependent increase in risk of uterine rupture, abnormal placentation, ectopic pregnancy, stillbirth and preterm birth. Babies born via C-section have been found to have different hormonal, physical, bacterial and medical exposures during birth, which can subtly alter their health.²

C-section is a type of major surgery, which carries risks that require careful consideration. WHO has published new guidance on nonclinical interventions specifically designed to reduce unnecessary caesarean sections.³ It is estimated that 10-15% of births medically require a C-section due to complications.⁴ In our hospital the annual cesarean rate during the year 2018 was 22%. In order to understand the degree to which caesarean deliveries may be preventable, it is important to know why caesareans are performed. Keeping this in mind we aimed to study the indications for cesarean section and their relative contribution to the total Cesarean section rate in NDMC medical College and Hindu Rao hospital from Nov 2018 till January 2019.

MATERIAL AND METHODS

We conducted retrospective observational study of various indications of cesarean sections done from November 2018 till January 2019 at NDMC Medical College and Hindu Rao Hospital. Data was collected from medical records. Case records of 140 patients who underwent cesarean were analysed. Various parameters like age, gravida, obstetric history, emergency or elective, primary or repeat and indications of cesarean sections were recorded. Severe oligohydramnios was diagnosed when ultrasound showed AFI < 5. The data was entered on MS excel sheet and analysed on SPSS software.

RESULTS

- There were total 140 cases of cesarean section out of which 127 were done in emergency and 13 were elective CS.
- The average age of 140 patients was 27 years.
- The average gestational age was 38.4 weeks.
- 55 patients were primigravidas, 42 were pregnant for second time, 30 patients were 3rd gravidas and 13 patients were pregnant for 4 times or more.
- Out of 140 case of cesarean section, 80 were primary CS and 60 patients had undergone previous CS.
- Out of 60 patients of previous CS, 8 patients had undergone more than 1 previous CS.

Table 1 Distribution of cesarean sections

Type of Cesarean	Primary CS	Repeat CS	Total
Emergency	73	54	127
Elective	7	6	13
Total	80	60	140

Table 2 Distribution of Medical co-morbidities in cesarean patients

Medical comorbidity	Primary CS	Repeat CS	Total
IHCP	3	2	5
Hypothyroidism	3	4	7
Diabetes	6	5	11
Mild preeclampsia	5	8	13
Severe preeclampsia	3	4	7

There were some indications common to both primary and repeat cesareans. These indications for CS are mentioned in table 3. The indications specific to previous cesarean are mentioned separately in Table 4 in the decreasing frequency. Amongst the results, important observations are:

- Previous cesarean was the commonest indication for cesarean section and was there in 43% of pregnant women.
- CPD, fetal distress and malpresentation were the common indication and accounted for 50% of all the cesareans all together.
- 13 patients (9.28 %) had failed induction of labor.
- Decrease fetal movement, NPOL and severe preeclampsia, previous 2 CS were present in around 5% cases each and accounted for 20% of all the indications.
- Cesarean on maternal request was done in 8 patients (5.71%) which included 1 patient of primary cesarean section. This contribution was same as that of severe preeclampsia.
- Nuchal cord around neck diagnosed on ultrasound was an indication for cesarean in 2 cases. One patient had 3 and other had 2 loops of cord around neck. The loops of cord around neck were found during surgery.
- One patient undergoing primary surgery had undergone Purandres repair so was not allowed vaginal delivery.
- In the previous cesarean patients CPD and previous 2 CS were the commonest indications.

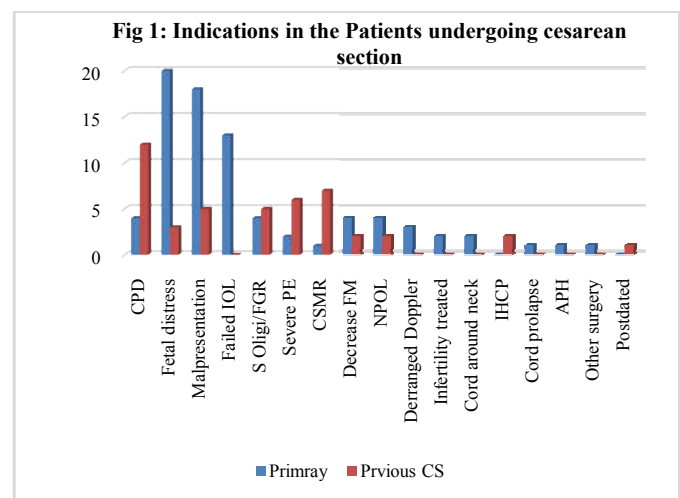
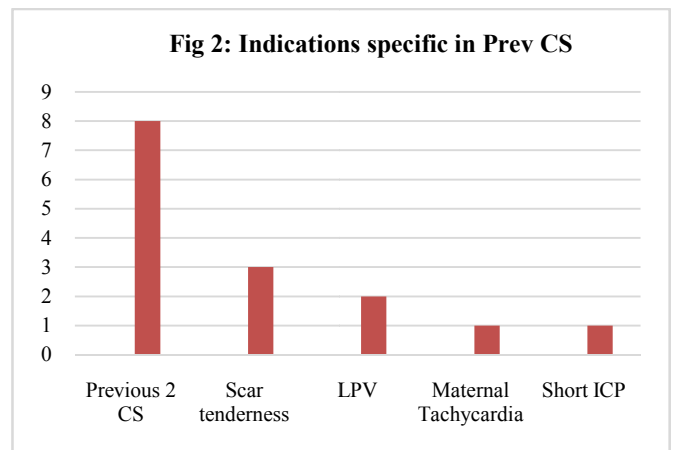


Table 3 Indications in the Patients undergoing cesarean section

Indication	Primary CS (n=80)	% of Indication in Primary CS out of 140 pts	% of indication in Primary CS out of primary CS (80)	Prev. CS (n=60)	% of indication in Prev. CS out of 140 pts.	% of Indication out in Prev. CS out of prev. CS (60)	Total (140)	Total in % (140)
CPD	4	2.86%	5%	12	8.57%	20%	24	17.14
Fetal distress	20	14.28%	25%	3	2.14%	5%	23	16.42
Malpresentation	18	13.6%	23.75%	5	3.57%	8.33%	23	16.42
Failed IOL	13	9.28%	16.25%	0	0%	0%	13	9.28
S.Oligo/ FGR	4	2.86%	5%	5	2.14%	8.33%	9	6.42
Severe PE	2	1.43%	3.75%	6	4.29%	10%	8	5.71
CSMR	1	0.7%	1.25%	7	5%	11.67%	8	5.71
Decrease FM	4	2.85%	5%	2	1.43%	3.33%	6	4.29
NPOL	4	2.86%	5%	2	1.43%	3.33%	6	4.28
Derranged doppler	3	2.14%	3.75%	0	0	0%	3	2.14
Infertility treated	2	1.43%	3.75%	0	0	0%	2	1.43
Nuchal cord	2	1.43%	2.5%	0	0	0%	2	1.43
IHCP	0	0%	0%	2	1.43%	3.33%	2	1.43
Cord prolapse	1	0.7%	1.25%	0	0	0%	1	0.7
APH	1	0.7%	1.25%	0	0	0%	1	0.7
Other surgery	1	0.7%	1.25%	0	0	0%	1	0.7
Postdated	0	0%	0%	1	0.7%	1.67%	1	0.7

Table 4 Indications Specific for repeat cesarean section

Indication	Number	Prev CS (60)	% of Indication(out of total 140 cases)
Previous 2 CS	8	13.33%	5.71%
Scar tenderness	3	5%	2.14%
LPV with poor bishops	2	3.33%	1.43%
Maternal tachycardia	1	1.67%	0.7%
Short Inter conception period	1	1.67%	0.71%

DISCUSSION

Table 5 Comparison of indication for CS with other studies (values in %)

Indication	Gupta <i>et al</i>	Janki <i>et al</i>	Chavda <i>et al</i>	Present study
Previous cesarean	36.5	46.2	39.9	42.9
Fetal distress	11.28	13.4	19.1	16.4
CPD	12.03		4.8	17.1
NPOL	13.65	10.2	0.90	4.3
Malpresentation	8.05	11.4	18.6	16.4
Oligohydramnios/IUGR	5.16	3.4	2	6.4
Failed IOL	3.54		7.3	9.3
Severe PIH	3.54	6.6	-	5.7
APH	-	3.6	-	0.7
CSMR	-	-	-	5.7
Nuchal cord	-	-	-	1.4
Precious pregnancy	-	0.8	-	1.4
Twins	-	1.2	-	0.7
Obstructed labor	-	3.2	-	-

Like previous authors^{5,6,7} previous CS, CPD, fetal distress, malpresentations, failed induction of labour, non-progress of labor, oligo hydramnios / fetal growth restriction and severe preeclampsia were the leading cause of cesarean sections. The important difference in our findings was that none of the previous authors had reported cesarean done due to cord around neck. Also cesarean on maternal request has emerged an important indication in our study and accounted for almost 6% of all the Cesarean sections which was almost equivalent to contribution made by severe preeclampsia, decrease or loss of fetal movement and Non-progress of labor. Karunanidhi *et al* in a study of 363 cases with nuchal cord concluded that nuchal cord loop did not have adverse effect on maternal outcome but led to increases in meconium stained liquor,

irregular fetal heart and low 1st minute Apgar score. Nuchal cord did not increase the operative interference in mother.⁸ Nuchal cords are a potential cause for perinatal distress and a rarely significant risk factor for long-term neurodevelopmental consequences in the developing fetus.⁹ In our hospital if the patient shows 2 or more tight loops of cord around neck then cesarean is offered to the patient after careful counselling.

CONCLUSION

The decision to do a cesarean section should be individualised so that it is done timely in a needy patient and unnecessary cesarean sections are avoided. In modern era of safe obstetrics, cesarean on maternal request and cord around the neck have emerged as newer indications for cesarean section. Besides educational interventions for women, audit of cesarean sections and timely feed back to health professionals about indications for cesarean section should be routinely done.

Abbreviations

- CS: Cesarean section
- Prev: Previous
- CPD: Cephalo-pelvic disproportion
- MSL: Meconium stained liquor
- NPOL: Non-progress of labor
- APH: Ante-partum hemorrhage
- LPV: Leaking Per vaginum
- IOL: Induction of labor
- CSMR: Cesarean on maternal request
- IHCP: Intra hepatic Cholestasis of Pregnancy
- ICP: Inter-conception period

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