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Original Research Paper

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EMERGENCY CESAREAN SECTION- INCIDENCE AND INDICATIONS IN A TERTIARY HOSPITAL

Dr Radha B — MBBS, DGO, MD, Assistant professor, Department of Obstetrics and Gynaecology, Amala Institute of Medical Sciences, Thrissur, Kerala-680555

Dr Dhanya R Shenoy* — MBBS, MS, DNB, Junior Resident, Department of Obstetrics and Gynaecology, Amala Institute of Medical Sciences, Thrissur, Kerala-680555
*Corresponding Author

ABSTRACT

Rationale of the study: Against the background that Cesarean section rates are on the surge, a lookback into the indications of emergency Cesareans would help us identify where we should focus on to reduce the total Cesarean rates.

Methodology: Retrospective observational study at Amala Institute of Medical Sciences, Thrissur including all emergency Cesarean patients during the year 2018.

Results: Cesarean rates showed an increasing trend over the past 5years. Of all the patients who underwent Cesarean, 56.8% were emergency Cesareans. The overwhelming majority was done for previous CS(28%), followed by cephalopelvic disproportion with failed trial of labor(19.2%), failed induction(14.5%) and fetal distress (14.5%).

Conclusion: There are so many factors leading to increasing Cesarean sections; and determining the most important contributing factor gives us a place to begin with. We should strive together to help fulfill the dream and aspiration of every pregnant woman to deliver normally to a healthy baby.

KEYWORDS : Cesarean rate, indications

INTRODUCTION

It is the dream and aspiration of every woman who becomes pregnant that she would be able to deliver normally to a healthy and happy baby. However an analysis of birth trends worldwide shows a rising Cesarean Section rate. There has been steep increase in Cesarean birth rates from 1996 to 2014[1] without clearcut evidence of concomitant decrease in maternal or neonatal morbidity or mortality, which raises significant concern that Cesarean delivery is being overutilised. The causes for this trend may be due to the rampant and mandatory use of electronic fetal monitoring even in low risk cases, use of arbitrary Cesarean Section in previous Cesarean patients and hesitance in the use of instrumental delivery.

As far as emergency Cesarean Section is concerned, the woman who sets out in the path of a vaginal delivery ends up in Cesarean due to various factors. We hope that by analyzing the trends and indications for which emergency Cesareans are performed, we can identify various factors which may help us to lower the Cesarean Section rates.

RATIONALE OF THE STUDY

Against the background that Cesarean section rates are on the surge and elective Cesarean rates are usually static, a lookback into the indications of emergency Cesareans would help us identify where we should focus on to reduce the total CS rates.

AIM

To find out the incidence and indications of emergency Cesarean Section in a tertiary care centre.

OBJECTIVES

- To calculate the incidence of emergency Cesarean section.
- To analyse the indications for which emergency Cesarean section was performed.

MATERIALS AND METHODOLOGY

This is an observational study conducted in Amala Institute of Medical Sciences, Thrissur during the period January1, 2018 to December 31, 2018. Ours is a 800 bedded tertiary hospital, which caters to the middle and lower middle class population. The present study was conducted to find the incidence and indications of emergency Cesarean section among women attending the antenatal clinic in our institution and those referred from the surrounding private hospitals. The relevant data was collected from the parturition register maintained in the labor room and any further clarifications required were obtained from the case sheets.

Inclusion criteria: All women who underwent emergency Cesarean Section at Amala Institute of Medical Sciences, Thrissur during the period January 1, 2018 to December 31, 2018.

Collected data included details such as patient's age, parity, co-morbidities, period of gestation, whether labor was spontaneous or induced, reason for taking up for emergency Cesarean, and baby weight. In cases where there were more than one indication, the most important indication was considered for data analysis. The Cesarean delivery rate was calculated as the number of Cesarean deliveries per 100 deliveries.

RESULTS

There were a total of 2565 deliveries during the period January1, 2018 to December 31, 2018; out of which 1622 were vaginal deliveries and 943 were Cesarean, thus amounting to a Cesarean rate of 36.8%. Data from our hospital has shown an increasing trend over the past 5years- 34.46% (in 2014) to 35.24%(in 2015) to 36.75% (in 2016) to 35.4% (in 2017) to 36.8% (2018). Of all the patients who underwent Cesarean, 56.8% were emergency Cesarean sections.

The mean age of the women who underwent emergency CS was 25.93 years. The various indications of emergency CS were CPD with failed trial, failed induction, fetal distress, previous CS with PROM, failure to progress, previous 2 or more CS in labor, failed TOLAC, abruptioplacentae, placenta previa with bleeding , breech in labor, HELLP syndrome, cord prolapse, twins with first nonvertex in labor.

Table 1 summarizes the characteristics of patients who underwent emergency Cesarean section. The maternal age of the patients ranged from 18 to 42 years. Majority of the

patients (51.6%) were in the age group 20-25 years. 32.2% were between 26-30 years, 10.4% between 30-35 years, 3.5% were below 35 years and only 2.05% were below 20 years.

50.9%of the patients were primigravida and 84.7% had term gestation. 48.5% of the patients who underwent emergency Cesarean had induced labor.

Out of the co-morbidities that the patients had, gestational diabetes mellitus was the most frequently encountered (14.9%). Hypertensive disorder was the next frequent morbidity with a rate of 8%. 1.8% and 0.3% patients had heart disease and renal disease respectively.

Table 1 Patient characteristics of Emergency Cesarean section

Characteristics	Number	Percent%
Age		
<20	11	2.05
20-25	277	51.60
26-30	173	32.20
31-35	56	10.40
>=36	19	3.50
Gravidity		
1	273	50.90
2	155	28.90
3	77	14.30
>3	31	5.70
Labor		
Spontaneous	276	51.50
Induced	260	48.50
Period of gestation		
<34 weeks	23	4.20
34-36 weeks	59	11.00
>=37 weeks	454	84.70
Co-morbidities		
Gestational diabetes mellitus	80	14.90
Hypertensive disorders	43	8.00
Heart disease	10	1.80
Kidney disease	2	0.30
Gynaecological	2	0.30

Table 2 summarizes the major indications for emergency Cesareans. The overwhelming majority was done for previous Cesarean(28%). The next top seven indications were first degree cephalopelvic disproportion(CPD), failed trial of labor(19.2%), fetal distress (14.5%), failed induction(14.5%), failure to progress (7.1%), meconium stained amniotic fluid(MSAF) (5.9%), breech in labor(4.2%), abruption (2.2%), placenta praevia(1.4%)

Table 2 Indications for emergency caesarean section

Indication	Number	Percent(%)
Maternal	**284**	**53.00**
Previous caesarean	155	28.00
Failed induction	78	14.50
Failure to progress	38	7.10
Placenta praevia	8	1.40
HELLP syndrome	5	0.90
Fetal	**138**	**25.74**
Foetal distress	78	14.50
MSAF	32	5.90
Breech	23	4.20
Twins	4	0.70
Cord prolapsed	1	0.10
Combined	**114**	**21.26**
CPD, Failed trial of labor	102	19.20
Abruptio placenta	12	2.20

Table 3 summarizes the indications for emergency Cesarean in previous Cesarean patients. First degree CPD and premature rupture of membranes(PROM) with unfavorable cervix (35.4% and 20.6% respectively)accounted for the commonest reasons among previous Cesarean patients who underwent emergency Cesarean. Failed trial of labor after Cesarean (failed TOLAC) constituted only 5.1%

Table 3 Indications for emergency Cesarean in previous CS patients

Indication	Number	Percent
CPD	55	35.4
PROM	32	20.6
Previous two CS	23	14.8
Unfavourable cervix	21	13.5
Failed TOLAC	8	5.2
MSAF	9	5.8
Placenta praevia	4	2.6
Twins	2	1.2
Previous three caesarean	1	0.6

DISCUSSION

Cesarean section is defined as delivery of fetus/fetuses through an abdominal incision and an incision on the intact uterus after 28 weeks of pregnancy. It can be Elective Cesarean (when it is a planned procedure for a specific indication) or Emergency Cesarean (when it becomes necessary to save the life or reduce significant morbidity to the mother or baby)

It is estimated that about 20million Cesarean deliveries occur worldwide every year2. It is thus the most frequently performed abdominal surgery in adults.

The World Health Organization declared in 1985 that there is no justification for any region to have Cesarean rates higher than 10-15%3. Several studies worldwide have conclusively proved that Ceasrean rate above 19% do not have any concomitant decrease in perinatal morbidity or mortality rates4. In India, the Cesarean rates show a tremendously increasing trend year by year. It has increased from 2.9% in 1992-1993 to 7.1% in 1998-1999; and from 8.5% in 2005-2006 to 17.2% in 2015-20165. Gibbons et al(2010) reported that Cesarean births increased from 20.7% in 1996 to 31.1% in 2006.6 Our institution also has showed a rising Cesarean section rates, similar to studies from various parts of the world5,6. Elective Cesarean rates usually remain constant. But are all the emergency Cesareans done for real indications? If then, why is it not that there is no concomitant decrease in maternal/neonatal morbidity/mortality with increasing Cesarean rates? With the present study, we are trying to evaluate the incidence and indications of emergency Cesareans, thus trying to identify the most important contributing factors driving changes in CS rates.

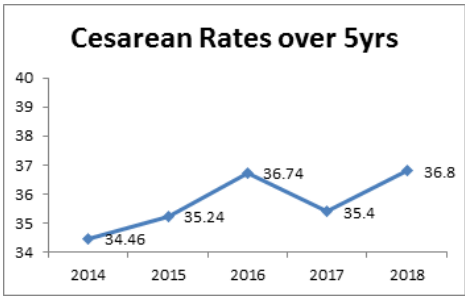

Chart 1: Cesarean rates in our institution over past 5 years

Of 2565 deliveries during the study period 943 were Cesarean section, thus amounting to a total Cesarean rate of 36.8%. Of all the patients who underwent Cesarean, 56.8% were emergency Cesarean sections.

Regarding patient characteristics, majority of the patients were in the age group 20-25 years(94.2%), which is the age group where a woman competes the family usually. This is similar to study by Moogambigai et al 7. 49.1%of the patients were multigravida; and inspite of this they ended up in emergency Cesarean. 84.7% patients who underwent emergency CS had reached term gestation. 48.5% of the emergency CS patients had induced labor. Out of the comorbidities that the patients had, gestational diabetes mellitus(GDM) was the most frequently encountered(14.9%). Probably, these GDM patients had increased incidence of CPD or fetal distress and ended up in emergency CS. Pregnancy induced hypertension and other hypertensive disorders was the next frequent morbidity with a rate of 8%. 1.8% and 0.3% patients had heart disease and renal disease respectively.

Regarding the indications for emergency Cesarean, the overwhelming majority was done for previous Cesarean(28%). The next top seven indications were first degree cephalopelvic disproportion(CPD), failed trial of labor(19.2%), fetal distress (14.5%), failed induction(14.5%), failure to progress (7.1%), meconiium stained amniotic fluid(MSAF) (5.9%), breech in labor(4.2%), abruption (2.2%), placenta praevia(1.4%).

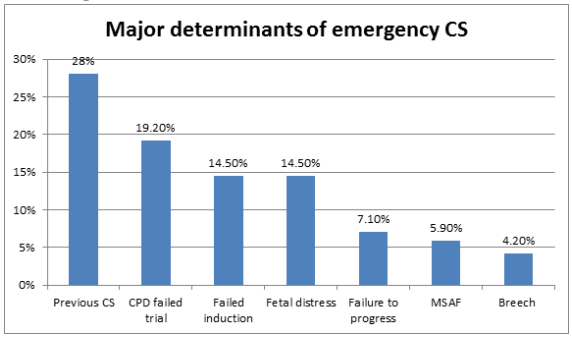

Chart 2: Major determinants of emergency CS

When we analyse the indications for emergency CS, 53% were done for maternal indications of which previous CS(28%)ranked the top. 25.74% were done for fetal indications with fetal distress (14.5%) being the most common cause. 21.26% were for combined indications, of which CPD with failed trial accounted for the majority(19.2%) . However this is contrary to the studies of Moogambigai et al7and Ehrenthal et al8, where most of the emergency CS was done for fetal factors.

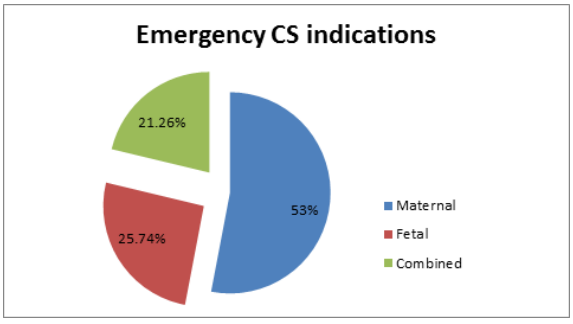

Chart 3: Indications of Emergency CS in our study

Summarizing the indications for emergency Cesarean in previous Cesarean patients, first degree CPD (35.4%)and PROM with unfavorable cervix (20.6%)accounted for the commonest reasons, while Failed trial of labor after Cesarean (failed TOLAC) constituted only 5.1%. This data probably signifies that we obstetricians should encourage TOLAC among previous CS patients.

CONCLUSION

To conclude, we should make every effort to fight the rising Cesarean rates in our country. There are so many factors contributing to this; and determining the most important contributing factor gives us a place to begin with. We should strive together to help fulfill the dream and aspiration of every pregnant woman to deliver normally to a healthy baby.

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