



STUDY ON MATERNAL MORBIDITY, MORTALITY AND NEONATAL OUTCOME OF LOWER SEGMENT CAESARIAN SECTION CASES CONDUCTED AT TERTIARY CARE HOSPITAL, RANCHI

Obstetrics & Gynecology

DR. NIBHA M.B.B.S, M.D (OBSTETRICS AND GYNAECOLOGY)

DR. MEETALI PARASHAR M.B.B.S, M.D (OBSTETRICS AND GYNAECOLOGY), REGISTRAR, R.I.M.S, RANCHI

ABSTRACT

Introduction: Caesarean section is the most common surgical procedure all over the world, this study was conducted to determine the maternal and neonatal outcome and complications in caesarean sections, so that measures can be taken to reduce further mortality and morbidity in near future.

Material and method: All patients who delivered after 28 weeks in Rajendra Institute of Medical Sciences, RANCHI by caesarean section were included to calculate incidence of Lower Segment Caesarean Section and their fetomaternal outcome. The Incidence of Lower Segment Caesarean Section, post-operative complications, causes of maternal morbidity and mortality after Lower Segment Caesarean Section, still births, perinatal deaths, early neonatal deaths and neonatal morbidity were assessed.

Result: With increased incidence of Lower Segment Caesarean Section, maternal morbidity, mortality and poor neonatal outcome has increased significantly with postpartum haemorrhage, eclampsia and other causes. Still births are mostly having history of ante partum eclampsia and ante partum haemorrhage in mother, also respiratory distress syndrome, congenital anomalies and birth asphyxia are the leading causes of early neonatal deaths.

Conclusion: The decision to do delivery by caesarean section should be clear and justified. Improvement in antenatal care is required in villages of Jharkhand where tribals live, also there should be early identification of high risk pregnancies, adoption of integrated approach to improve health status of women along with health education and proper counselling about baby birth. There should be special care of neonates born through Lower Segment Caesarean Section especially emergency caesareans.

KEYWORDS:

Fetomaternal outcome, Lower Section Caesarean Section, maternal morbidity, still birth, early neonatal deaths.

I. INTRODUCTION

Caesarean delivery is defined as birth of viable fetus through incision in abdominal wall (laparotomy) and through uterine wall (hysterotomy). Earlier caesarean section was performed only to save mother's life but with introduction of modern anaesthesia, blood transfusion, facilities, and higher antibiotics, the indications of caesarean delivery are liberalized. New modern technology in labour rooms along with several other medical, social, economic and medico-legal factors have lead to alarmingly high rate of caesarean section in all obstetric medical facility. Among the caesarean sections, emergency caesarean sections are those with identified as high risk pregnancy and elective ones are those with no clear medical reasons. Low rate of Lower Segment Caesarean Section might indicate poor access to Lower Segment Caesarean Section when obstetric complications occur, while high rate increases the risk of maternal and neonatal morbidity. Lower Segment Caesarean Section is a procedure that often is life saving, but it is not without risk and can also become life-threatening for both mother and child. The incidence of immediate complications after Lower Segment Caesarean Section is reported to be around 21%. Anaesthetic complications, infection and lower breastfeeding rates are some important early complications. In a long term perspective, women with previous Lower Segment Caesarean Section are at risk of chronic pain, infertility, bowel obstruction, uterine rupture and abnormal placentation.

The consensus recommendation for optimal caesarean section rate of 10-15% was made by WHO in 1985. Proportion of caesarean section to the total births is considered as one of the important indicators of Emergency Obstetric Care (World Health Organization, 2009). A figure below 5% implies that a substantial proportion of women do not have access to surgical obstetric care; on the other hand a rate higher than 15% indicates overutilization of the procedure for other than life saving reasons World Health Organization (1985; World Health Organization, 1993). The caesarean delivery rate in United States in 1970 was 5.5 percent. In India also the rate of caesarean has increased. Now it varies between 10% to 30% in different states. The recommendation from World Health Organization, 1985, states that the Lower Segment Caesarean Section rate should not exceed 15%. In 2009, World Health Organization revised their guidelines, still recommending a LSCS rate between 05-15%, they stated that a rate above 12-15% is not associated with better outcome, neither for the mother nor the child. The alarming rise in rate of caesarean sections is a matter of concern as it has lead to increased rate of poor

fetomaternal outcome and hence the existing practices needs to be scrutinized along with other measures to improve maternal and fetal outcome. For this purpose this study was conducted to know maternal morbidity, mortality and fetal outcome after caesarean sections at tertiary care hospital, Rajendra Institute of Medical Sciences, Ranchi.

II. MATERIALS AND METHODS

The present study was a prospective and observational study carried out in the department of Obstetrics and Gynaecology, Rajendra Institute Of Medical Sciences, Ranchi during April 2015 to October 2016. All patients who delivered after 28 weeks in Rajendra Institute Of Medical Sciences, Ranchi, by caesarean section were included to calculate incidence of lower segment caesarean section and their fetomaternal outcome. Those patients were excluded who had classical caesarean section or were admitted after getting their lower segment caesarean section done outside Rajendra Institute Of Medical Sciences. Detailed history and examination was done and the incidence of caesarean section, Information regarding post-operative morbidity was collected. Consent from the subject was obtained prior to collection of any data. No interventions were made in this study. The outcome studied were Incidence of lower segment caesarean sections, post-operative complications, still births, perinatal deaths, early neonatal mortality, neonatal morbidity and birth of term or preterm neonate. Duration of hospital stay of more than 10 days was considered as an indicator for post-operative morbidity. Causes of maternal morbidity, mortality, still births, perinatal deaths, early neonatal deaths and neonatal morbidity were assessed.

All the patients were followed up for another 7 to 10 days after operation for the following, any complaints, pulse, B.P., respiration, temperature, breast examination and lactation, urine output, bowel condition, wound, lochia, condition of neonate.

III. RESULTS

For the present study all patients who deliver in Labour room, Rajendra Institute of Medical Sciences, Ranchi after 28 weeks of pregnancy during April 2015 to Sept 2016 were considered.

Table no.1 Showing incidence of caesarean section

Total no. Of deliveries	No. Of caesarean sections	percentage
10828	4472	41.30%

Table 2- Showing incidence of elective or emergency LSCS

Lower Segment Caesarean Section	No. of cases	Percentage
Emergency	3706	82.86%
Elective	766	17.14%
Total	4472	100%

Out of 4472 cases ,3706(82.86%) cases underwent emergency LSCS,766(17.14%) cases had elective LSCS.

Table no 3-Showing incidence of maternal morbidity with >10 days hospital stay & their causes

S no.	Morbidity	No. of cases	Percentage
1	Pyrexia	376	37.5%
2	Anaemia	257	25.6%
3	Wound infection	204	20.4%
4	Urinary infection/Patients with prolonged need of bladder drainage(Foley's)	95	9.5%
5	Abdominal distension	26	2.6%
6	PPH	15	1.5%
7	Pulmonary infection	10	1.0%
8	Genital tract infection	6	0.6%
9	Burst abdomen	5	0.5%
10	Breast infection	6	0.6%
11	Convulsion	2	0.2%
	Total	1002	100%

376(37.5%) cases had puerperal pyrexia after caesarean delivery.Second most common cause of maternal morbidity was anaemia seen in 257(25.6%) of cases.204 cases had wound infection,95 had urinary infection or needed prolonged bladder drainage(Foley's).PPH was seen in 15 cases.10 had pulmonary infection,6 had genital tract infection,6 had breast infection.Burst abdomen was seen in 5 cases and 2 cases had post partum eclampsia.

Table no.4 Showing incidence of maternal mortality out of LSCS observed

No. of LSCS	No. of deaths	Percentage
4472	10	0.22%

Maternal mortality was 10 out of 4472 cases of LSCS.

Table no.5 Associated causes in cases of maternal deaths

S no.	Cause	No. of death
1	APE	4
2	Obstructed labour+Septicaemia+DIC	3
3	APH	2
4	Severe anaemia+ Cardiorespiratory failure	1

In my study 4 patients died due to severe eclampsia,3 patients died due to obstructed labour leading to septicaemia,2 patients of central placenta praevia bled profusely to death during operation,1 patient of severe anaemia with scar tenderness died due to cardiorespiratory failure.Antepartum eclampsia was the most common cause of death.

Table no.-6 Incidence of perinatal mortality

Total no. of live births	Perinatal deaths	PMR=still birth +early neonatal death Total no. of live birth
	Still births	Early neonatal deaths
4429	43	77
		27.09%

Perinatal mortality rate was 27 per 1000 live births.

Table no. 7 causes of early neonatal deaths

S no.	Causes	No. of cases	%age
1	Respiratory distress syndrome	37	48%
2	Congenital anomalies	15	19.5%
3	Birth asphyxia	13	16.4%
4	Meconium aspiration	10	13.5%
5	Kernicterus	2	2.6%

Maximum number of deaths in early neonatal period(<7 days of birth) was due to RDS (37cases).i.e.48%. Congenital anomalies were identified in 15 deaths(19.5%).13 deaths(16.4%) were due to birth

asphyxia followed by meconium aspiration in (10) deaths i.e.(13.5%).2 neonates died due to kernicterus(2.6%).

Table no-8 Neonatal outcomes

S no.	Neonatal outcome	No. of fetuses	Percent age
1	Weight <2.5 kgs	551	12.44%
2	Neonates requiring immediate NICU care(ventilation,phototherapy	200	4.5%
3	APGAR score <7 at 5 min.	80	1.8%
4	Hyperbilirubinaemia	983	22.2%
5	Congenital anomalies	8	0.18%
	a)Mild hydrocephalus	4	
	b)Meningomyelocele	1	
	c)Cleft lip+cleft palate	2	
	d)CTEV	1	

Table no.9 LBW (<2.5 kgs) neonates were further classified as term (IUGR) and preterm

	No. of foetuses	Percentage
IUGR	452	82%
PRETERM	99	18%
TOTAL	551	100%

Among the LBW babies 452(82%) cases were IUGR and 99(18%) cases were preterm.

III.DISCUSSION

In the present study majority of cases,3706(82.8%) cases underwent emergency LSCS and 766 cases(17.2%) had elective LSCS.

About(22.4%)1002 cases had to stay >10 days at hospital following caesarean delivery due to some morbidity. In my study 376(37.5%) cases had puerperal pyrexia after caesarean delivery. Second most common cause of maternal morbidity was anaemia which was seen in 257(25.6%)of cases. Other common causes were wound infection ,urinary infection, abdominal distension etc.

According to the Sample Registration System(SRS Report2013) prepared by the REGISTRAR GENERAL OF INDIA, maternal mortality rate(MMR) in Jharkhand was 208 deaths per one lakh live births,which is much higher than the national average of 167 deaths.

In the present study, the MMR at Rajendra Institute of Medical Sciences is 226. But out of 4472 cases who underwent LSCS, 10 patients died so that maternal mortality was only 0.22%.It reflects efficient obstetrical care at RIMS. As many patients coming here and undergoing LSCS are unbooked and present here with various complications. In my study maximum number of deaths was due to antepartum eclampsia. The second most common cause was obstructed labour leading to septicaemia and DIC.2 patients of central placenta previa bled profusely to death during operation even after blood transfusion.There was 1 death due to severe anaemia leading to cardio-respiratory failure. In my study there was no death due to sepsis.

As per the SRS, Government of India, the overall PNMR in India for 2009 was 35 per 1000 births. Perinatal Mortality Rate was 26.8 per 1000 births in the present study, 43 cases had still births and there were 77 early neonatal deaths. According to my study, antepartum eclampsia was the leading cause of still births, 46.5%(20) followed by ante partum haemorrhage(12) i.e.28%. 5(11.6%) still births were associated with obstructed labour. Still births due to cord prolapse was seen in 4 cases (9.4%), 2cases(4.5%)were of fetal distress where the babies could not be survived even by the paediatrician

Due to lack of proper ANC, still births because of ante partum eclampsia was still high(46.5%).

In my study maximum number of deaths in early neonatal period (<7days) was due to RDS,37i.e.48%. Congenital anomalies were identified in 15 deaths(19.5%).13 deaths (16.4%) were due to birth asphyxia followed by meconium aspiration in 10 deaths(13.5%).2 neonates(2.6%) died due to severe kernicterus(mother was Rh negative).

In the present study 551 babies were born with birth weight<2.5kg (12.44%). These Low Birth Weight (LBW) babies were further studied

as Term IUGR & Preterms. 82% of the LBW babies were IUGR and 18% were Preterm. These may be cases iatrogenic prematurity which happen when even with repeated ultrasound scans, there are errors in judging when to do an elective CS causing the CS rates to rise, so do premature births.

About 4.5% i.e. 200 babies were admitted to NICU for CPAP, ventilation, phototherapy, exchange transfusion etc. 1.8% (80) of neonates had APGAR score <7 at 5 minutes. Hyperbilirubinemia was the most common morbidity seen in about 22.2% (983) neonates.

IV. CONCLUSION

The incidence of Lower Segment Cesarean Section is increasing all over India including Rajendra Institute of Medical Sciences with modernization of facilities and socio-economic plus medicolegal factors. The increased incidence of Lower Segment Cesarean Section has probably led to high maternal and neonatal mortality and morbidity in such cases. The decision to do delivery by caesarean section should be clear and justified. Improvement in antenatal care is required in villages of states like Jharkhand where tribals are away from basic facilities of life, also there should be early identification of high risk pregnancies, adoption of integrated approach to improve health status of women along with health education and proper counselling about baby birth. There should be special care of neonates born through LSCS especially emergency caesareans as they are prone of developing complications. Also, further studies are required for measures which are effective to improve the fetomaternal outcome of caesarean section.

V. REFERENCES

1. Ian Donald's PRACTICAL OBSTETRIC PROBLEMS 7th edition, P - 568
2. Lebas (1769) Fasbender, Geschichted der Geburtshilfe (1906) 979-1010; Quoted by Munro Kerr (1996), Munro Kerr's operative obstetrics ed. X, P-318
3. Kehler (1881) Arch Gynak 19: 177, Quoted by Munro Kerr (1996); Munro Kerr's operative obstetrics ed. X, P-518
4. Kerr J. M. M., American Journal of Obstetrics and Gynaecology, (1926) 12: 729; Quoted by Sesuru & Simpson, 1958. 40, American Journal
5. Karkee R, Lee AH, Khanal V, et al. Obstetric complications and caesarean delivery in Nepal. Int J Gynaecol Obstet. 2014; 125(1):33-6.
6. Irani M, Deering S. Challenges affecting access to caesarean delivery and strategies to overcome them in low-income countries. Int J Gynaecol Obstet. 2015; 131(1):30-4.
7. UN. UN millennium goals 5. http://www.un.org/millenniumgoals/pdf/Goals_5_fs.pdf. Published 2013
8. Rijken MJ, Meguid T, van den Akker T, et al. Global surgery and the dilemma for obstetricians. Lancet. 2015; 386:1941-42.
9. Karlstrom A, Lindgren H, Hildingsson I. Maternal and infant outcome after caesarean section without recorded medical indication: findings from a Swedish case control study. BJOG. 2013; 120(4):479-86
10. Oian P. Vileder I fodselsjelp (obstetric guidelines). <http://legeforeningen.no/Fagmed/Norsk-gynekologisk-forening/Veiledre/Veilder-i-fodselsjelp-2014/> Published 2014.
11. The American College of Obstetrician and Gynaecologists (ACOG). ACOG committee opinion no. 559: caesarean delivery on maternal request. Obstet Gynecol 2012; 124(4):904-07.
12. Abalos E, Oyarzun E, Addo V, et al. CORONIS-international study of caesarean section surgical techniques: the follow-up study. BMC Pregnancy Childbirth. 2013; 13:215.