

A Retrospective Analysis of Cesarean Section in a Tertiary Care Hospital

Dr. C. Santhanalakshmi¹, Dr. Vijayalakshmi Gnanasekaran², Dr. A. R. Chakravarthy³

^{1,2,3}Department of Obstetrics & Gynaecology, Karpaga vinayaga Institute of medical sciences, Kancheepuram, India

Abstract: *Objectives:* To analyze the various indications of caesarean delivery over a period of 4 years .To evaluate the maternal and fetal outcomes between elective and emergency caesarean section. *Design:* Retrospective study conducted at the Department of Obstetrics and Gynecology Karpaga Vinayaga Institute of Medical sciences and Research centre, Maduranthagam , Tamil Nadu , India. The study period was from January 2011 - December 2014. The details were taken from case sheets, operation & parturition records and newborn records of 530 patients who underwent caesarean section.The data was analyzed with special reference to the indication of caesarean section, maternal and fetal outcomes among elective and emergency cases. *Results:* The incidence of caesarean section was 12.5%. The commonest indication for C-delivery was repeat cesarean (43%) followed by CPD (15 %). Failed induction and Fetal distress were the next common indication (10 %) and (7%) respectively. Maternal morbidity was 20% with 1 maternal death. (0.1%). The commonest complications were primary hemorrhage and wound infection, intra op and post op respectively. The perinatal morbidity and mortality was 10% and 2.26% respectively.

Keywords: caesarean section, indications, complications, child birth.

1. Introduction

Advancements in health care system and access to medical facilities have greatly reduced the maternal and perinatal mortality due to complications of pregnancy and childbirth. Cesarean section is the surgical intervention in case of serious delivery complications and has been life saving for a long period of time.

The WHO guidelines revised in 1994 states that the proportion of cesarean births should range between 5 to 15%. But both in developed and developing countries cesarean section rate is on the raise.

This study aims at analyzing the incidence , indications of ceseraen section and their maternal and fetal complications performed in a teaching hospital of South India over a period of 4 years.

2. Materials and Methods

It is a retrospective study conducted at our hospital. The study period was from January 2011 - December 2014. A total no. of 530 caesarean deliveries were analyzed from the data on the case sheets, operation registers & new born records. Preterm deliveries were excluded from the study. Maternal data collected included the age, parity, booked or unbooked cases, elective or emergency procedure , indications & post operative complications . The neonatal data included birth weight , apgar score , complications and NICU admissions.All data were computed and analyzed.

3. Results

A total of 4265 patients delivered during the study period of which 530 had undergone caesarean section . The incidence of cesarean section at our hospital comes to be around 12.5% of these cases , 210 patients(40%) had elective cesarean section, 320 patients (60%) had emergency cesarean section.

Demographic analysis as shown in Table I showed maximum number of patients to be between 21-30 years 405cases (76.4%). Those < 20 and between 31 -40 years were 10 (2%) and 115(22%) respectively. The youngest person was 19years of age and the oldest was 39 years. 172 patients (32.5%) were primi and 356 patients (67%) were G2-G4 and 2 persons (0.4%) were grand multi 274 patients(52%) were booked and 256 patients(48%) were unbooked or booked elsewhere and were referrals. Detailed analysis of the cases showed that the number of patients who underwent primary section were 300 (57%) and repeat cesarean were 230 (43%). Most of the patients, 380 cases (72%) had spinal anesthesia and 150cases (28%) had general anesthesia. Among those who had General anesthesia 120 cases (80%) had emergency surgery and only 30 patients (20%) belonged to the elective C-section group.

The commonest indication for C- section was repeat cesarean (230 patients-43%), this was followed by CPD(82 cases-15%). Failed induction and fetal distress were the next common indication 54 cases - (10 %) and 35 cases- (7%) respectively. The other indications are shown in Table II

Maternal morbidity was observed in 104 cases (20%) and there was one maternal death. Analysis of intra operative complications showed primary hemorrhage in 6 cases (6%) and bladder injury in 3 patients(3%) . Post op wound infection occurred for 39 cases (38%). Others were urinary tract infection, fever, spinal headache etc. as shown in Table III.

There was one case of maternal death , 0.1% incidence among all cases of cesarean section and it was due to severe PIH with pulmonary edema in the late post-partum period.

Perinatal morbidity was seen in 54 cases (10%) and mortality in 12 cases (2.26%). The major cause for perinatal morbidity was meconium aspiration - 24 cases (44%) followed by respiratory distress -17 cases (31.5%) and the

morbidity was more among the emergency c-section patients (Table IV)

There were 12 cases of death and they were due to sepsis, meconium aspiration and low birth weight in that order. (TABLE V)

Table 1: Demographic Analysis

	No. of Cases	Percentage
Total deliveries	4265	
Total cesarean section	530	12.5%
Elective cesarean section	210	49%
Emergency cesarean section	320	50.9%
Age distribution		
<20 years	10	1.88%
21-30 years	405	76.4%
31-40 years	115	21.69%
Parity		
Primi	172	32.5%
G2-G4	356	67%
>G4	02	0.4%
Booked		
Booked	274	51.6%
Unbooked		
Unbooked	256	48.30%

Table 2: Indications

S. No	Indication	Total		Emergency No. of Cases	Elective No. of Cases
		No. of Cases	%		
1	Previous LSCS	230	43.3	120	110
2	Cephalopelvic disproportion	82	15.47	50	32
3	Failed induction	54	10.18	54	-
4	Fetal distress	35	6.60	30	5
5	Malpresentations	18	3.39	3	15
6	Multiple pregnancy	13	2.45	8	5
7	Precious Pregnancy (BOH, Infertility)	21	3.96	7	14
8	Tumors complicating pregnancy	7	1.32	3	4
9	APH	6	1.13	4	2
10	Uterine malformations	1	0.18	-	1
11	Cervical dystocia	1	0.18	1	-
12	Severe PIH	13	2.45	8	5
13	IUGR	26	4.9	7	19
14	Medical disorders complicating pregnancy	23	4.3	7	16

Table 3: Complications - Intra & Post Operative.

S. No	Maternal	Total Cases	Percentage of Total Complications	Emergency	Elective %
1	Primary hemorrhage	6	5.8	4	2
2	Bladder injury	3	2.9	2	1
3	Wound infection	39	38	26	13
4	UTI	21	20.1	14	7
5	Post-op fever	20	19.2	11	9
6	Spinal headache	15	14.4	9	6
	TOTAL	104			
	Maternal death	1			

Table 4: Perinatal Morbidity

S. No	Fetal Complications	Total	Percentage	Emergency	Elective
1.	Meconium aspiration	24	44.4	18	6
2	TTN & Respiratory distress	17	31.5	10	7
3	Hyperbilirubinemia	8	14.8	4	4
4	Sepsis	5	9.3%	4	1
	Total	54	10.1%	36	18

Table 5: Neonatal Mortality - Causes

S.NO	Cause	Total	Emergency	Elective
1	Sepsis	5	4	1
2	Meconium aspiration	5	3	2
3	LBW	2	1	1
	Total	12	8	4

4. Discussion

There is an increasing trend of cesarean section deliveries worldwide. A large population based study in Madras shows an incidence of cesarean section to be 20% , 38% , and 47% in public , charitable and private sector respectively (1). The incidence of cesarean section in our hospital is 12.5%. This is in accordance with the Consensus conference held by WHO in Brazil 1986 (2), which concluded that there is no justification for any region to have a cesarean section rate higher than 10-15% for attaining the best maternal and fetal outcome.

Ben Onankpa et al (3) reported a cesarean section rate of 8.4% , of these 80.6% were emergency and 19.4% were elective. Our study shows 60% emergency and 40% elective cesarean section , and the most common indication for cesarean section is previous cesarean section- incidence of 43% (n=230). This is in comparison to a study by Royal women's hospital in Australia (4) in 2005 which showed an incidence of 64.14% emergency and 35.8% elective sections, and their most common indication was also previous cesarean section.

The commonest indication of repeat cesarean section is also in comparison to another study by Ali et al (5) who have reported 43.2% of previous cesarean section, but our incidence of malpresentation is only 3.3% whereas their study quotes an incidence of 11.9%

Our study showed repeat cesarean section, cephalopelvic disproportion and fetal distress as the most common indications in both emergency and in elective cesarean section group followed by failed induction among the emergencies and IUGR, medical disorders complicating pregnancy and precious pregnancy in the electives.

Our incidence of cesarean section for severe PIH was only 2.5% (n=13) of these 62% were emergency and 38% were elective, When compared to another study in North India (6), where it was 91% and 9% respectively. Also we have not had any cases of eclampsia , whereas they show 15 cases.

Intra operative complications were mainly primary haemorrhage and bladder injury which comprised of 9 cases,

8.7% of the total (n=104) . The rest 91.3% (n=95cases) were post op. The commonest complication in our patients was wound infection (38%). The next common complications were UTI, post op fever and spinal headache, 20%, 19%, and 14.4% respectively. These were more common in the emergency group as compared to the elective cases , comparable to studies by Ali et al (5) and Rehana et al(6).

There was one case of maternal death, MMR of 143/100,000 . This is in contrast to the MMR reported as 564/100,000 & 666/100,000 by Rehana et al(6) and Ali et al (5) respectively . This low MMR is attributable to high level of antenatal care services contributed both by public and private sector in TamilNadu.

The incidence of neonatal morbidity was about 10% of all cesarean section deliveries, mainly contributed by meconium aspiration 44%. This is similar to the study by Rehana et al (6). The others were respiratory complications and hyperbilirubinemia 31.5% & 14.8% respectively. Sepsis contributed to only 9.3% of neonatal morbidity.

The incidence of hyperbilirubinaemia was same in both emergency and elective cases whereas all others were more common in emergency group.

The common causes for neonatal mortality were sepsis and meconium aspiration which were more common in the emergency section groups.

5. Conclusion

The incidence of cesarean section is 12.5% in our hospital falling well within the WHO guidelines. Among the indications, previous LSCS is contributing to a greater percentage, which should be reduced by promoting more VBAC . It also emphasizes the need for reducing primary sections. Post partum Haemorrhage has been brought well under control, sepsis still accounts for greater postop morbidity and meconium aspiration is the commonest cause for perinatal morbidity and mortality.

6. Ethical Statement

Ethical clearance obtained from the ethical committee.

7. Conflict of Interest

The authors declare that they have no conflict of interest.

8. Author Contribution

Dr C Santhanalakshmi, Dr Vijayalakshmi Gnanasekaran, Dr A R Chakravarthy were involved in the conceptualization and designing of the manuscript, literature search, data analysis, manuscript preparation , editing and manuscript review . All authors read and approved the final manuscript.

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