



STUDY OF INDICATIONS & MATERNO- FETAL OUTCOME IN CAESAREAN SECTIONS

Medical Science

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ABSTRACT

Objective: The study attempts to determine the incidence, common indications, maternal and fetal outcomes and complications of cesarean section in a Tertiary care hospital

Methods: A prospective observational study done in department of Obstetrics and Gynecology, SMS Medical College Jaipur .All patients scheduled for elective and emergency caesarean sections(CS) between Jan-Dec 2014 .In total, 1406 CS were evaluated for indications, and maternal and neonatal outcome.

Results:The incidence of cesarean section was 1406/4875(28.8%) out of which emergency cesarean section accounted for 1153(82%) and elective cesarean section for 253 (18%) Majority of the patients were between 20-35 years with a mean age of 24.5 years with SD \pm 5.14. The leading indications for CS were, fetal distress (20.8%) ,previous Cs (15.8%), PROM(13%) ,breech presentation (11.1%),Cephalopelvic Disproportion (CPD) (5.9%), Severe Pregnancy induced hypertension (5.9%)and Antepartum Hemorrhage (APH) (6.5%) accounting for 82.6% of the indications for cesarean section In our study, 209 (14.9%) had neonatal morbidity Approximately 45(3.2%) neonatal deaths occurred

Conclusion Cesarean sections performed for appropriate medical or obstetric indications are life saving for both the mother as well as the new born.

KEYWORDS

cesarean section, pregnancy outcome, risk factors

Introduction

Cesarean section refers to the delivery of a fetus, placenta and membrane through the abdominal and uterine incision after 28 weeks of gestation¹ Cesarean delivery is lifesaving for obstructed labor and other emergency obstetrical conditions; ensuring access to cesarean delivery is an essential strategy for meeting the Millennium Development Goals¹ and the forthcoming Sustainable Development Goals² for reducing child and maternal mortality & morbidity²

Methods

All mothers admitted through OPD or emergency during the study period, of any age or parity undergoing C/S were recruited in the study The outcomes studied were-Incidence of caesarean sections, indications, age distribution, gravida, antenatal complications, intra-operative and post- operative complications. Patients having previous myomectomy, hysterotomy or classical C/S were excluded from the study

Results:

Overall, 1406 cases of cesarean section were carried during the study period among a total of 4875 births. Cesarean section deliveries accounted for 28.8% of all births. The mean maternal ages for the study group was 24.5 years. There were a total of 253 (18%) elective cesarean sections & 1153 (82%) emergency sections. (table 1). Table 2 shows Fetal distress was the leading indication and it accounted for 293 cases(20.8%) of all cesarean sections performed in this study. Second common indication for CS was previous CS 218(15.5%) and nearly the same no. of cases 183 (13.02%) was done for PROM/failed induction. Approx. 175 cases(13.35%) had malpresentation / malposition, 92(6.5%) cases had Antepartum haemorrhage, of these 52 cases were placenta previa & 40 cases were accidental haemorrhage. Table 3 shows the percentage of antenatal risk factors present in cases undergoing CS. 70.6% had anaemia, (28% cases received blood transfusion), 15.50% repeat CS, 13.02% PROM, 6.5% APH, 1.85% obstructed labour, 5.9% PIH, 1.49% multiple pregnancy, 0.28% heart disease . Table 4 summarises 196 (13.9%) patients had intra operative complications. 48(3.4%) had intra operative haemorrhage: uterine atony seen in 1.5%, about 140(10%) patients had adhesions of surrounding tissues of which 98(7%) had adherent and uplifted bladder while 42(3%) had adhesion of omentum or gut. Table 5 depicts 247 (17.5%) cases had post operative. morbidity of which 225(19.5)

were present in emergency CS of which 3.8% PPH, 4.8% wound infection, 2.6% p pyrexia, 2% UTI, 1.9% paralytic ileus, 1.9% post spinal headache, 0.09% muscle haematoma, 0.2% post partum eclampsia, 1.7% thrombophlebitis, 0.09% DIC, 0.26% endotoxic shock and 0.09% bronchospasm. Related to neonatal morbidity: 14.9% babies had neonatal morbidity of which 6.9% had respiratory complications, 4.3% had neonatal septicemia, 3% had neonatal jaundice, 0.1% had intra cranial haemorrhage, 0.1% pulmonary haemorrhage and 0.5% had congenital anomaly.(Table 6)

Discussions:

Modern obstetrics, for medical, social, economic, and legal reasons has witnessed an increase in the primary caesarean section rates everywhere. The Cesarean section rates among women in the current study was 28.8%. Annette Nakimuli³, et al reported 22.3 % deliveries were caesarean sections . Of these 15.9% were Elective Caesareans that was close to our study (18% elective CS) Ahmed et al⁴ study showed 32% underwent CS ,71.7% undergoing an emergency CS. Similar to our study, common indications for CS were fetal distress 30%, breech presentation 19.3%, failure of labor progression 18.8%, & failure to induce labor 11.7%. Gahiri⁵ reported fetal distress as the main reasons for CS that was comparable to our study.

Soukayna⁶ reported the leading indication for emergency caesarean section was cephalopelvic disproportion (39.3%), while antepartum hemorrhage and fetal distress followed in that order . Vardhan et al⁷ found that foetal distress was the commonest indication for emergency repeat caesarean section but in our study, previous LSCS was found to be most common indication for caesarean section.

Our study shows anaemia(70%) as the commonest antenatal risk factor followed by Previous CS(15%), PROM in 13%, PIH in 6% ,APH in 6.5% and delayed referrals contributed to the antenatal risk factors cases, however Kohli⁸ studied the common antenatal risk factors were IUGR, APH ,GDM, hypertensive disorders of pregnancy, twins & so on. Nanneli pallasma⁹ studied Haemorrhage seen in 8.4% cases. Ghazi¹⁰ studied that Haemorrhage is a frequent complication in CS, emergency or elective

In our study cases had intraoperative haemorrhage due to mainly uterus atony followed by extension of incision, varicose veins at base

of bladder. Annettee et al⁷ reported the commonest maternal morbidity was hemorrhage (17.2%). In our study, 6(0.43%) had bladder injury & was comparable to Bergholt's¹¹ study, who found that the incidence of hysterectomy & bladder injury were 0.2% & 0.5% respectively. Our study shows (10%) fewer intraoperative adhesions in CS, Kushboo et al¹² reported, The complication rate of repeat CS was 45%. This included adhesions (35%), thin LUS (19%), extension of uterine incision (3%), postpartum haemorrhage (5%). In present study the incidence of Placenta previa was 3% and that of placenta accreta was 2%.

In the present study maternal morbidity was much higher (almost double) in emergency CS as compared to the elective CS i.e. 19.5% and 8.7% respectively. The rates were 7.9% in the study by Häger¹³ et al and 10% in the study by Karlström¹⁴ et al Ayano¹⁵ reported the most common post-operative complications were respiratory tract infection 7(2.5%) and post op fever⁹ (2.1%) comparable to our study with puerperal pyrexia in 2.6% cases

Nanneli⁹ showed the incidence of NICU admission for asphyxia varied from 0.2% to 3.1%, however our study depicted neonatal respiratory complications in 6.9% cases. The present study reported total no. of neonatal deaths to be 45 (3.2%), of these, 23 (1.6%) patients had severe birth asphyxia, 8(0.6%) had neonatal septicemia, 8(0.6%) had respiratory distress syndrome, 2(0.1%) had ICH, 1(0.1%) had pulmonary haemorrhage, and 3(0.3%) had congenital anomaly which were incompatible with life. Ayano Moges¹⁵ reported the common causes of perinatal mortality were, birth asphyxia (2.1%), APH (1.4) and prematurity (1.4%), obstructed labor (1.4) which are close to our study

Conclusion

Identifying the common indications for Cesarean section and associations with maternal & fetal outcome can target improvements in antenatal services and emergency obstetric care.

Table 1 Indication of CS in SMS hospital during the study period.

Variable	No of cases	%
Type of CS		
Elective	253	18
Emergency	1153	82
Total	1406	100
Indications of CS		
Maternal	450	32
Fetal	675	48
Maternofetal	281	20
Primary/repeat CS		
Primary	1188	84.5
Repeat	218	15.5
Total	1406	100

Table 2 Distribution of cases of caesarean according to their indication

Indication of caesarean	No. of cases	%
Foetal distress (FD)	293	20.84%
Previous caesarean section	218	15.50%
Pre-labour rupture of membranes and / Failed induction (PROM/ FI)	183	13.02%
Breech	156	11.10%
Cephalopelvic disproportion (CPD)	83	5.90%
Severe pregnancy induced hypertension (PIH)	83	5.90%
Failed progress of labour per se (NPOL)	58	4.13%
Antepartum haemorrhage (APH)	92	6.54%
Postdated pregnancy/ Failed induction	45	3.20%
Intrauterine growth retardation (IUGR)	63	4.48%
Obstructed labour/ Deep transverse arrest (DTA)	26	1.85%
Rupture uterus	10	0.71%
Multiple pregnancy	21	1.49%
Antepartum eclampsia (APE)	14	1.00%

Bad obstetric history (BOH)	42	2.99%
Transverse lie	14	1.00%
Cord prolapse	4	0.28%
Brow presentation	1	0.07%

* Total Number of deliveries 4875

* Total Number of CS 1406

Table 3 Distribution cases according to antenatal risk factors in CS

Antenatal risk factors	No. of cases	%
Anaemia	993	70.6%
Previous caesarean section	218	15.5%
PROM	183	13.02%
PIH	83	5.9%
APH	92	6.5%
Obst.labour/prolonged labour	26	1.85%
Multiple pregnancy	21	1.49%
History of previous surgery other than CS	25	1.78%
Heart disease	4	0.28%
Eclampsia	14	1.0%
Treatment with super naturals	14	1.0%
Delayed arrival	450	32.0%
Handled by dai	42	2.99%
Inappropriate referrals	28	2%

Table 4 Disribution of cases according to intraoperative complications ions during section

S.No.	Intraoperative complications	No. of cases	%
1.	Haemorrhage	48(24.5%)	3.4%
	a) Uterine atony	21	43.75%
	b) Difficulty in removing placenta	7	14.58%
	c) Extension incision	6	12.50%
	d) Varicose vein at base of bladder	14	29.17%
2.	Injury to viscera	6(3.1%)	0.43%
	a) Bladder	6	
	b) Ureter	0	
	c) Bowel	0	
3.	Anaesthetic complications(bronchospasm)	2(12%)	0.14%
4.	Presence of adhesions	140(71.4%)	10%
	a) Adhesion to gut and omentum	42	30%
	b) Adhesion and uplifting of bladder	98	70%
	Total	196	13.9%

Table 5 Distribution of cases according to post operative maternal morbidity in CS

Maternal Morbidity	Emergency C.S. (n=1153; 82.4%)	Elective C.S. (n=253;17.6%)
PPH	44(3.8%)	13(5.1%)
Wound infection	55(4.8%)	3(1.2%)
P pyrexia	30(2.6%)	2(0.8%)
UTI	23(2%)	(0)
Paralytic ileus	22(1.9%)	(0)
Spinal headache	22(1.9%)	2(0.8%)
Muscle.haematoma	1(0.09%)	(0)
PPE	3(0.26%)	(0)
Thrombophlebitis	20(1.7%)	2(0.8%)
DIC	1(0.09%)	(0)
Endotoxic shock	3(0.26%)	(0)
Bronchospasm	1(0.09%)	(0)
Total	225(19.5%)	22(8.7%)

*Total no of caesarean section 1406.

Table 6 Distribution of cases according to neonatal morbidity in CS

S.No.	Neonatal Morbidity	No. of cases	%
1.	Respiratory Complications	97	6.9%

	(a) Meconium aspiration syndrome	50	
	(b) Respiratory distress syndrome	28	
	(c) Pneumonia	19	
2.	Neonatal septicemia	61	4.3%
3.	Neonatal jaundice	43	3.0%
4.	Intra cranial haemorrhage	1	0.1%
5.	Pulmonary haemorrhage	1	0.1%
6.	Congenital anomaly	7	0.5%
	Total	209	14.9%

References

1. United Nations. Millennium development goals and beyond 2015. <http://www.un.org/millenniumgoals>. Accessed October 1, 2014.
2. United Nations sustainable development knowledge platform. OpenWorking Group proposal for sustainable development goals. <https://sustainabledevelopment.un.org/sdgsproposal>. Accessed July 28, 2015.
3. AnneteeNakimuli, Sarah Nakubulwa, Othman Kakaire, Michael O. Osinde, Scovia N. Mbalinda, Rose C. Nabirye, Nelson Kakande, and Dan K. Kaye Incidence and determinants of neonatal morbidity after elective caesarean section at the national referral hospital in Kampala, Uganda BMC Res Notes. 2015; 8: 624.
4. Ahmed SR, AlsheehsMA, Alsammani. Riska & indications for cesarean sections in primiparous women: A case control study Anntrop Med Public Health 201.6-541
5. AtaollahGhahiri and MehroushKhosravi Adv Biomed Res. 2015; 4: 193.
6. Soukayna et al Fetal outcome in emergency versus elective cesarean sections at Souissi Maternity Hospital, Rabat, Morocco Pan African Medical Journal. 2016; 23:197-199. doi:10.11604/pamj.2016.23.197.7401
7. Vardhan S, Behera RC, Sandhu GS, Singh A, Bandhu HC. Vaginal birth after caesarean delivery. J ObstetGynecol India 2006;56:320-3. Kohli UA et al. Int J Reprod Contracept Obstet Gynecol. 2017 Jun;6(6):2421-2426
8. Kohli UA et al. Int J Reprod Contracept Obstet Gynecol. 2017 Jun;6(6):2421-2426
9. Nanneli Pallasmaa Cesarean section. – short term maternal complications related to the mode of delivery Department of Obstetrics and Gynecology. University of Turku, Turku, Finland. Annales Universitatis Turkuensis 2014)
10. Ghazi AI, Karim F, Hussain AM, Ali T, JabbarS. Maternal morbidity in emergency versus elective caesarean section at a tertiary care hospital. J Ayub Med Coll Abbottabad. 2012 Jan-Mar;24(1):10-3
11. Bergholt T, Stenderup JK, Vedsted-Jacobsen A, Helm P, Lenstrup C. Intraoperative surgical complications during cesarean section: an observational study of the incidence & risk factors. Acta Obstet Gynecol Scand. 2003; 82(3):251-256
12. Kushboo, 2 Sipra Singh, 3 Anju Karan Intra-Op Complications: Primary Versus Repeat Cesarean Section IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) e-ISSN: 2279-0853, p-ISSN: 2279-0861. Volume 16, Issue 4 Ver. IX (April, 2017), PP 30-34
13. Häger RME, Daltveit AK, Hofoss D, Nilsen ST, Kolaas T, Øian Pål & al; Complications of cesarean deliveries: Rates and risk factors. Am J Obstet Gynecol 2004; 190(2):428-34.
14. Karlström A, Lindgren H, Hildingsson I; Maternal and infant outcome after cesarean section without recorded medical indication: findings from a Swedish case-control study. BJOG 2013; 120(4):479-486.
15. Ayano Moges1, Beyene Wondafrash Ademe2, Geremew Muleta Akessa3 Prevalence and Outcome of Caesarean Section in Attat Hospital, Gurage Zone, SNNPR, Ethiopia Archives of Medicine