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RESEARCH ARTICLE

A RETROSPECTIVE STUDY ON FETOMATERNAL OUTCOME IN SECOND STAGE CESAREAN-SECTION

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Abstract

Introduction: Second stage C-section are associated with poor fetomaternal outcome due to deeply engaged head ,less liquor,and thinned out LUS.This can lead to maternal morbidities like thinned out the lower uterine segment. This can lead to a high risk of maternal morbidities like an extension of the lower uterine segment incision, uterine atony, and injury to urinary bladder as well as neonatal morbidities such as birth asphyxia, NICU admission, and meconium aspiration syndrome. This study aims to observe the maternal and neonatal outcomes of cesarean delivery performed in the second stage of labor.

Materials and Methods: This is a retrospective observational study conducted in a tertiary health center to study the fetomaternal outcome of all women with singleton, a cephalic fetus at term delivered by cesarean section in the second stage of labor over one year duration.

Results: During this study period, there were 6200 deliveries C-section. Among emergency LSCS 50 (0.8%)were performed in the second stage of labor. Most common indication was NPOL A/W fetal distress 24 (44%)followed by Obstructed labor 10(20%). Most common Intraoperative complication noted was extension of uterine segment 8(16%) followed by atonic PPH. Postoperative maternal who had complications were prolong catheterization:25(50%), postoperative fever : 4(8%), haemorrhagic urine;8(16%). In perinatal complications, meconium stained liquor: 22(44%),NNU admission;8(16%), Apgar score <5 at 5 min : 8(16%), NICU admission : 12(24%), fresh stillbirth : 1(2%) were observed.

Conclusion: Cesarean section in the 2nd stage of labor is associated with significantly increased maternal morbidity. Neonatal morbidity and mortality also increases. A proper judgment is required by a skilled obstetrician to take a decision for cesarean section at full cervical dilatation.

Introduction:-

Second stage of labor is called from full cervical dilation to delivery of baby, emergency C-section done in second stage of labor due to various reasons is a complicated procedure in terms of fetal as well as maternal outcomes. Second stage C-section is usually complicated with deeply engaged fetal head, bladder oedema and thinned out lower uterine segment and for these reasons it is a more challenging procedure than C-section in early

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labor(1).There is difficulty in delivery of deeply engaged head which can be delivered by Patwardhan method or by push method. Maternal morbidity in second stage CS is in the form of extension of uterine angles, postpartum hemorrhage and prolonged surgical time, Bladder injury, postpartum pyrexia were among the common complications reported during second stage CS(2-5).Neonatal morbidity in terms of NICU admissions, fetal academia, hypoxemia, prolonged NICU stay is reportedly higher in second stage CS(6-7).Second stage CS has been reported as a concerning increase trend within the increasing CS rate.Literature review suggests that this trend is multifactorial; probably a combination of lack of training for junior staff in second stage decision making, lack of expertise in assisted vaginal delivery. Increase in primary CS has a great impact on subsequent obstetric outcome and delivery. This study is being done to observe maternal and fetal complications among women undergoing cesarean section during the second stage of labor.

Materials and Methods:-

This retrospective observational study was carried out in the department of Obstetrics and Gynaecology of J.K.lone hospital,kota for the period of one year from January 2023 to December 2023 During the study period all the lower segment cesarean sections performed in second stage of labor were included in the study. The data was collected in preformed proforma . Fifty women who underwent second stage CS were analyzed in terms of indications for second stage CS, method of delivering the deeply engaged head, intraoperative and postoperative complications, as well as fetal outcome.

Inclusion criteria-

-Singleton pregnancy irrespective of parity -period of gestation >37 week
-cephalic presentation

Exclusion criteria-

1.Multiple pregnancy 2. Malpresentation
3. Preterm deliveries 4.Medical complications associated with pregnancy

Result:-

Total number of deliveries by C-section during the study period was 6200. Out of this 50 (0.8%) cesarean deliveries which performed in second stage of labor (after applying the exclusion criteria) were included. Non-progression of labor associated with fetal distress was the most common indication for LSCS in second stage of labor accounting for 22 cases (44%) followed by obstructed labor 10 cases (20%), deflexed head 8 cases (16%) and non- descent of head 5 case(10%), deep transverse arrest 4 cases (8%),failed instrumentation 1 case(2%).

Indications of C-Section in second stage of labour:

Indication	Number	Percentage
NPOL A/W Fetal distress	22/50	44%
Obstructed labour	10/50	20%
Deflexed head	8/50	16%
Non descent of head	5/50	10%
Deep transverse arrest	4/50	8%
Failed instrumentation	1/50	2%

Method of delivery of deeply engaged head:

Method	Number	Percentage
Vertex	22/50	44%
Patwardhan	20/50	40%
Push	8/50	16%

Most common method of delivery of deeply engaged head was vertex method in 22 cases (44%%) followed by Patwardhan method in20 cases(40%) and push method in 8 cases (16%)

Intra-operative complications :

Complication	Number	Percentage
Extension of uterine angles	8/50	16%
Atonic PPH	6/50	12%
Bladder injury	1/50	2%
Obstetric Hysterectomy	0/50	0%

Most common I/O complication was extension of uterine angles 8 cases(16%)F/b atonic PPH 6 cases(12%) which managed conservatively , bladder injuries 1 case (2%) and no obstetric hysterectomy noted due to any complication.

Post-operative complications:

Complication	Number	Percentage
Prolonged catheterisation	25/50	50%
Haemorrhagic urine	8/50	16%
Paralytic ilius	4/50	8%
Febrile illness	4/50	8%
Wound infection	5/50	10%

prolonged catheterisation seen in 25 cases(50%),Haemorrhagic urine 8 cases(16%) paralytic ileus 4 cases (8%), febrile illness 4 cases (8%) and wound infection 5 cases (10%),vesicovaginal fistula seen in 1 case(2%).Post operative blood transfusion done in 8 cases(16%).

Contributing factors for 2nd stage arrest: These are the contributing factors which seems to causes hindrance in descent of head in late first stage and in second stage of labor by different mechanisms.

Factors	Numbers	Percentage
Postdate	12/50	24%
PROM	8/50	16%
DLOC	2/50	4%
SLOC	2/50	4%
Placental classification	1/50	2%

Neonatal issues:

Neonatal outcome	Number	Percentage
Meconium stained liquor(MSL)	22/50	44%
NICU Admission	12/50	24%
NNU Admission	8/50	16%
Meconium aspiration syndrome (MAS)	8/50	16%
Fresh still-birth	1/50	2%

The mean birth weight was 3.3 kg,No. of babies with birth weight>=3kg was 38(76%),MSL present in 22 cases (44%). There were 12 babies (24%) required NICU admissions(Due to MSL, Perinatal hypoxia,poor apgar score),8 (16%) babies required NNU Admission,Meconium Aspiration syndrome noted in 8 babies (16%) fresh still birth were 1 (2%) and out of the 20 NICU admissions, neonatal death occurred in 5 cases(10%).**Discussion:** During the one year study period6200 babies were delivered by C-Section;out of these(n=50) 0.8%,C-Section were performed at full dilation.Caesarean section in the second stage of labor is a technically difficult operation with distortion of maternal pelvic anatomy and deeply impacted fetal head in the maternal pelvis. The most common indication of the second stage cesarean section was non-descent of the head(NPOL) Associated with fetal distress (44%) in this study.In the study by Goswami et al.NPOL A/W fetal distress was the MC indication for LSCS in second stage of labor accounting for 38% cases followed by deflexed head (16%) and DTA (14%). In a study by Belay et al (8), the most common indication of the second stage cesarean section was cephalopelvic disproportion (48.5%). A retrospective study from Canada has shown that women delivered by cesarean sections at full dilatation of the cervix were 2.6 times likely to have intraoperative trauma(9).In our study atonic PPH was observed in 12% of patients and extension of uterine incision was found in 16% cases.As compared to to study conducted byBaloch S et

al was observed 12.5% PPH and 5.4% extension of uterine incision(10). Difficult delivery of impacted head may be facilitated by an assistant pushing from below or by using a reverse breech delivery(11). This might be because non-descent of the head with major caput and molding formation makes the delivery of the fetal head challenge. Atonic postpartum hemorrhage was seen in 6(12%) cases, which is Comparable(11.5%) to the study done by Babre V M et al.(12) . The use of prophylactic uterotonics in the second stage Cesarean could have contributed to this decreased number of postpartum hemorrhage. Other maternal operative complications seen in our study were haematuria in 8(16%), febrile illness in 4 (8%), prolonged catheterisation 25(50%), post operative blood transfusion done in 8 cases (16%). Intraoperative fetal hypoxia is a serious complication associated with the second stage cesarean section, which may be due to strong uterine contraction or longer duration of cesarean section resulting from deeply engaged head and difficulty in delivery. Most of the second stage cesarean section had baby weight >=3 kg (76%) in this study. Cephalopelvic disproportion might be the cause of non-descent of the head in the second stage of labor. The most common fetal complication was meconium stained amniotic fluid, seen in 22 cases (44%) which is slightly more(30.75%)than a study by Jayaram J et al(13) This might be due to intraoperative fetal hypoxia caused by strong uterine contraction, which deeply impacted fetal head and longer duration of the second stage of labor. The NICU admission rate was 20 (40%) which is slightly more than the study by Allen VN et al(19.5%) (9). In our study the most common cause of C-Section in second stage was fetal distress secondary to MSL or abnormality in fetal heart rate pattern, and we found some high risk condition which contribute to fetal distress due to MSL,Eg. include post - datism,and conditions which interfere with descent of headEg.PROM which may lead to oligo-hydro-amnios and dry labour,loop around neck (SLOC/DLOC)etc.Majority of patients(28/50) which landed into 2nd stage CS were referred from periphery and were already in fetal distress and in obstructed labor. It reflects the poor management at peripheral centers.

Conclusion:-

Cesarean sections done in the second stage of labor are associated with increased maternal and neonatal complications,in terms of mortality and morbidity.Second stage CS can be avoided by using partograph, rational use of oxytocin, timely referral from peripheral centers, proper and selective instrumental deliveries. proper judgment and skilled obstetrician required for decision making and to perform second stage cesarean section.

References:-

(1)Mckelvey A, Ashe R, Mckenna D, Roberts R. Caesarean section in the second stage of labour; a retrospective review of obstetric setting and morbidity. Journal of Obstetrics and Gynaecology. 2010;30(3):264-7.
(2)Govender V, Panday M, Moodley J. Second stage caesarean section at a tertiary hospital in South Africa. The Journal of Maternal-Fetal& Neonatal Medicine. 2010 Oct 1;23(10):1151-5.
(3)Sung JF, Daniels KI, Brodzinsky L, El-Sayed YY, Caughey AB, Lyell DJ. Cesarean delivery outcomes after a prolonged second stage of labor. Am. J. Obstet. Gynecol. 2007;197(3):306-e1.
(4) Alexander JM, Leveno KJ, Rouse DJ, Landon MB, GilberS,Spong CY, et al. Comparison of maternal and infant outcomes from primary cesarean delivery during the second compared with first stage of labor. Obstet Gynecol. 200;109(4):917-21.
(5)Selo-Ojeme D, Sathiyathasan S, Fayyaz M. Caesarean delivery at full cervical dilatation versus caesarean delivery in the first stage of labour: comparison of maternal and perinatal morbidity. Arch Gynecol Obstet. 2008;278(3):245-9.
(6)Murphy DJ, Liebling RE, Verity L, Swingler R, Patel R. Early maternal and neonatal morbidity associated with operative delivery in second stage of labour: a cohort study. The Lancet. 2001;358(9289):1203-7.
(7) Davis G, Fleming T, Ford K, Mouawad MR, Ludlow J. Caesarean section at full cervical dilatation. Aust NZ J ObstetGynaecol. 2015;55(6):565-71.
(8)Belay T, Yusuf L, Negash S. A comparative study on first stage versus second stage caesarean section on maternal and perinatal outcome. Ethiop Med J. 2014;52(1):1-8.
(9)Allen VM, O'Connell CM, Baskett TF. Maternal and perinatal morbidity of caesarean delivery at full cervical dilatation compared with caesarean delivery in the first stage of labour. BJOG. 2005;112(7):986-90.
(10) Baloch S ,Khaskheli M. Frequency of second stage intervension and its outcome in relation with instrumental vaginal delivery VS caesarean section. J Ayub Med coll Abbotabad.2008;87-90.
(11)Fasubaa OB, Ezechi OC, Orji EO, Isabu PA, Okogbenin S, Okogbo FO, et al. Delivery of the impacted head of the fetus at caesarean section after prolonged obstructed labour: a randomised comparative study of two methods. J ObstetGynaecol. 2002;22(4):375-8.

(12)Babre VM, Bendre KR, Niyogi G. Review of caesarean sections at full dilatation. Int J ReprodContraceptObstet Gynecol. 2017;6(6):2491-3. (13)Jayaram J, Mahendra G, Vijayalakshmi S. Fetomaternal outcome in cesarean sections done in second stage of labor. IJOG. 2016;3(1):51- 4. C.