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Fetomaternal Outcome In Cesarean Section Performed In Second Stage Labour: A Prospective Observational Study

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Abstract
Introduction
With the increasing rate of caesarean section worldwide, there is a concerning rise of second stage cesarean section. Interventions in the second stage in a fully dilated cervix and deeply impacted head poses quite a risk to both mother and fetus . The objective of the present study was to observe and analyse the various fetomaternal complications in subjects who underwent caesarean section in second stage.
Meterials And Methods
This was a one-year prospective observational study that was conducted at Hitech Medical College and Hospital, Bhubaneswar from August 2023 to July 2024. All women with term singleton fetus with cephalic presentation who underwent caesarean section in second stage of labour were observed and analysed in terms of indication for caesarean, intraoperative and postoperative complications along with fetal outcomes.
Results
A total of 1806 cesarean sections was performed during the study period, out of which 39 (2.1 %) were performed in second stage . The most common indications was second stage arrest (33.3%) ,fetal distress (28.2%) followed by CPD(20.5%).Intraoperatively, extension of the uterine incision was seen in 30.7%,PPH in23% and hemorrhagic urine in 17.9% . Post operative complications were febrile illness accounting for 23.09 % cases, surgical site infection 30.7%. Among the 39 newborns 33.3% had birth asphyxia ,30.7 % had meconium aspiration and 15.3% developed neonatal jaundice.
Conclusion
Second stage cesarean being a technically demanding procedure showed a higher rate of fetomaternal complications

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I. Introduction

Cesarean section is one of the most commonly performed surgical procedure all over the world. Cesarean at second stage occurs when mother requires delivery at full dilation of cervix which is more challenging and poses a higher likelihood of adverse fetomaternal outcomes. The Largest study to date, an audit of all deliveries at the tertiary hospital in London over a period of 10 years demonstrated that 5% of cs were performed at full dilation [1].This disproportionate rise in second stage caesarean is due to decline in the use of instrumental delivery ,lack of training and supervision in second stage decision making and lack of techniques associated with difficult assisted delivery [2,3].Caesarean delivery in the second stage of labour have also been linked to longer surgery time and greater post operative fever.

This present study was done to observe and analyse the fetomaternal outcomes in subjects who underwent 2nd stage CS

II. Materials And Methods

Study Population

This study included primigravida or multi gravida women with Singleton pregnancy with period of gestation more than 37 weeks, cephalic presentation and full dilation of cervix.

The study excluded multiple pregnancies, pre term deliveries, malpresentation ,previous uterine surgery and women not willing to participate

Study Procedure

It is an observational and prospective study.

The study included cases from the Department of Obstetrics and Gynaecology, Hitech Medical College and hospital Bhubaneswar from August 2023 to july 2024

III. Results

Of total 1806 CS performed , the present study was conducted among 39(2.1%) women who delivered by caesarean section at 2nd stage of labour ,at term with single fetus with cephalic presentation in Hi-tech medical college and Hospital , Bhubneshwar and the results obtained were tabulated. In a duration of 1 year study the most common indication for the second stage caesarean section was found to be arrest in second stage of labour(33.3%). 11 cases were because of fetal distress i.e 28.2 % and then CPD accounting to 20.5% ,followed by obstructed labour(12.5%), failed instrumental delivery (2.56%)and declined trial of operative vaginal delivery(2.56%).

Table 1 : Indication of caesarean section

INDICATION	NUMBER	PERCENTAGE
Arrest in second stage	13	33.3%
Fetal distress	11	28.2%
CPD	8	20.5%
Obstructed labour	5	12.5%
Failed instrumental delivery	1	2.56%
Declined trial of operative vaginal delivery	1	2.56%

When we looked into the methods of delivery of fetal head, 27 (69.2%) were delivered as vertex , 9 (23.06%) by Patwardhan and 3 were delivered using modified Patwardhan technique as shown in table 2

Table 2 : Technique of delivery

TECHNIQUE	NUMBER	PERCENTAGE
Modified Patwardhan	3	7.69%
Patwardhan	9	23.06%
Vertex	27	69.20%

Table 3 : Intraoperative maternal complications

COMPLICATIONS	NUMBER	PERCENTAGE
Uterine incision extension	12	30.70%
PPH (atonic and traumatic)	9	23.07%
Hemmorhagic urine	7	17.9%
Angle hematoma	3	7.6%
Bladder injury	2	5.12%
No complications	6	15.38%

Table 3 showed that uterine incision extension(30.7%) was mostly found as intra operative complication of second stage CS while other associated risks being PPH, hemmorhagic urine, angle hematoma, bladder injury.

During the post operative period 30.7% mothers had wound infection, 23.07% suffered from febrile illness, 5 patients (12.8%) were catheterized for a longer period while 15.3% of the mothers had prolonged hospital stay.

Table 4 : post operative maternal complications

COMPLICATIONS	NUMBER	PERCENTAGE
Wound infection	12	30.7%
Febrile illness	9	23.07%
Prolonged catheterization	5	12.8%
Prolonged hospital stay	6	15.3%
No complications	7	17.6%

There were 36 NICU admissions and the causes were birth asphyxia (33.3%), MAS (30.7%), neonatal jaundice (15.3%) and low APGAR score (12.8%).

Table 5 ; Fetal and newborn complications

COMPLICATIONS	NUMBER	PERCENTAGE
Birth asphyxia	13	33.3%
MAS	12	30.7%
Neonatal jaundice	6	15.3%
Low APGAR score	5	12.8%
Fresh still birth	1	0.03%
No complications	2	0.05%

The mean duration of surgery was 55.52 minutes and mean hospital stay was 5.64 days

IV. Discussion

Caesarean sections during second stage are becoming more common with increasing incidence from 0.9% to 2.2% [2]. A previous study in Khartoum found that the second stage caesarean section rate was 2-4 % [4]. The Royal College of Obstetricians and Gynecologists (RCOG) reports that approximately 6% of caesarean sections for lack of training and supervision for junior staff in second -stage decision making, lack of expertise in difficult -assisted vaginal delivery and concerns related to litigious issues because of maternal and neonatal morbidity [5].

In the present study the most common indication for CS was second stage arrest (33.3%) followed by fetal distress(28.2%), CPD (20.5 %), which was similar with the study performed by *Jyoti Jayram et.al* where deep transverse arrest was the most common indication (38.46%) for caesarean section in second stage labour [6]. Whereas in a study by *Belay P et al* CPD (48.5%) was the most common cause for second stage caesarean section [7]. Similarly *Grurung P et al* in their study observed that the most common indication of 2nd stage CS was cephalopelvic disproportion (53.8 %) with major caput and moulding formation making the delivery of the fetal head challenging [8].

Women who had caesarean section in second stage had higher risk of complications like extension of uterine incision (30.7%),PPH (23%), hemmorhagic urine (17.9%). A retrospective study from cannada has shown that women delivered by caesarean section at full dilation of cervix were 2.6 times likely to have intraoperative trauma [9]. With the increase in duration of second stage there is a difficulty in delivery of head because of edematous lower portion, the lower segment gets thinned and overstretched and there is a greater amount of impact over the part in the pelvis that is being presented. Operative time was also increased due to difficulty in delivery of the engaged head. Delivery of engaged head can be accomplished by numerous techniques such as vertex procedure, Patwardhan or modified Patwardhan technique. *Nia et al* has done a prospective observational study in women who underwent second stage caesarean birth in UK where a dis-impaction technique was used for deeply impacted fetal head like push and Patwardhan techniques to reduce neonatal complication[10 *]* . *Mukhopadhyay et al* concluded that extension of the uterine incision and injury to the surrounding structures during LSCS is common in obstructed labour ,when the hand is forcibly introduced into the pelvis to deliver the head which is impacted and jammed in the pelvis and this was also seen in our study. They also showed that neonates who delivered by Patwadhar method had outcome similar to delivered by vertex and breech [11] .

The neonatal complications that require NICU admission were birth asphyxia (33.3%), MAS (30.7%), low APGAR score (12.8%), neonatal jaundice (15.3%).

A suggestion that has been provided by the RCOG of UK which says that a consultant needs to be present during the second stage of LSCS for taking the info decisions besides reducing the complications that arise from this type of operation .

V. Conclusion

Cesarean section in full cervical dilation is an undesirable situation associated with increased maternal and fetal complications. It can be avoided by Skilled and experienced team timely decision use of photograph, rational use of oxytocin ,proper and selective instrumental delivery and early referral by a properly trained midwife.

References

[1] Loudon JAZ, Groom KM, Hinkson L ,Harrington D ,Paterson-Brown S. Changing Trends In Operative Delivery Performed At Full Dilution Over A 10 Year Period. J Obstet Gynaec 2010;30:370-5

[2] Vousden N Cargill Z, Briley A Tydeman G, Shennan AH .Cesarian Section At Full Dilation : Incidence,Impact And Current Management. The Obstetrician Gynaecologist 2014 Jul 1:16(3) 199-205

[3] Unterscheider J, Mcmenamin M, Cullinane F,Rising Rates Of Caesarean Deliveries At Full Cervical Dilation : A Concerning Trend, European J Obstet Gynecol 2010 Apr 1;157 (2) :141-4.

[4] Azza Jaafar B, Rihab Jaafar, Yassir Ahmed Mohammed E , Awad Ali MA, Siddig Omer MH. Maternal And Perinatal Outcome Among Women Underwent 2nd Stage Vs First Stage Caesarean Delivery At Ibrahim Malik Hospital In Sudan. WJ Gynecol Womens Health. 1(3):2018

[5] Unterscheider J, Mcmenamin M, Cullinane F. Rising Rates Of Caesarean Delivery At Full Cervical Dilation: A Concerning Trend. Eur . J. Obstet. Gynecol. Reprod. Biol. 2011 ;157(2):141-4 Crossref
[6] Jayaram J, Mahendra G, Vijaylaxmi S. Fetomaternal Outcome In Caesarean Sections Done In Second Stage Of Labour. Indian Journal Of Obstetrics And Gynaecology Research 2016 ;3(1):51-54
[7] 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. Website
[8] Gurung P, Malla S, Lama S ,Malla A, Singh A. Caesarean Section During Second Stage Of Labour In A Tertiary Centre. J Nepal Health Res Counc 2017 May-Aug ;15(36):178-81.
[9] Allen VM, O Connell CM, Baskett TF. Maternal And Perinatal Morbidity Of Caesarean Deliveryat Full Cervical Dilation Compared With Caesarean Deliveryin The First Dstage Of Labour. BJOG. 2005 ;112 (7):986-90.Crossref
[10] Wyn Jones N, Mitchell EJ, Wakefield N, Knight M, Dorling J, Thornton JG, Walker KF. Impacted Fetal Head During Second Stage Caesarean Birth : A Prospective Observational Study . Eur J Obstet Gynecol Reprod Biol.2022;272:77-81
[11] Kumari A. Reducing Morbidity In 2nd Stage Caesarean Section By Patwardhan's (Shoulder First) Method Of Delivery. Int J Reprod Contracept Obstet Gynaecol 2014 ;34 (7): 598-604