



## SECOND STAGE CAESAREAN SECTION:IMPACT ON FOETO-MATERNAL OUTCOME-AN OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL

<b>Dr. Mousumi Dutta</b>	Assistant Professor, Dept. Of GYNAE And OBS,C.N.M.C
<b>Dr. Rezina Banu*</b>	Rmo Cum Clinical Tutor, Dept. Of GYNAE And OBS, Murshidabad Medical College *Corresponding Author
<b>Dr. Gouranga Sarkar</b>	Assistant Professor, Dept. Of Medicine, I.P.G.M.E & R.
<b>Dr. Ibadahun Suchiang</b>	Post Graduate Trainee, Dept. Of G&O, C.N.M.C.

### ABSTRACT

**Objectives-** To study the various foeto-maternal outcome in relation of second stage caesarean section.

**Method-** It is a prospective observational study of 80 patients from January 2018 to october 2018 .The foeto-maternal outcomes were recorded in all singleton pregnant mothers undergoing second stage caesarean section and analysed.

**Results-** Total number of deliveries in study period were 10,300. Total number of caesarean section (CS) were 3400 in the study period, rate of CS is 33%. Second stage CS is 80, rate is 2.35%. Mean maternal age was 26.7 years. Though most common indication was non-progress of labour(56.25%) and a good number of obstructed labour (31.25%) was also found. Most patients were multiparous (37.5%). 75% patient had spontaneous onset of labour. Several maternal complications were there e.g. mostly post partum haemorrhage(PPH) 31.64%, puerperal infection 31.25%, blood transfusion 37.5%, prolonged hospital stay more than seven days 15%,uterine angle extension 25%. We even encountered one maternal death due to ruptured uterus in second stage of labour 1.25%. Mean birth weight of neonate was 2.90Kg . 37.5% babies were more than 3kg, 50% babies were between 2.5 -3kg. 40 neonates were admitted in neonatal intensive care unit (NICU). Mostly 37.5% had birth asphyxia then hyperbilirubinemia 30%, sepsis 25%, respiratory distress syndrome 25%. One neonate was fresh stillborn 1.25% and eight perinatal death occurred in NICU that is 11.25%. 5% neonate had foetal injuries during extraction either bony or visceral.

**Conclusion-** Second stage CS are associated with maternal and foetal morbidity and mortality but it can be greatly avoided by an expert team of obstetrician and neonatologists where decision, judgement and operative skills and new born resuscitation matter a lot.

**KEYWORDS :** Caesarean section, second stage, foetal-outcome, maternal-outcome.

### INTRODUCTION

Second stage caesarean section means when caesarean section done at full dilatation of cervix in a labour patient. The increasing trend of CS at second stage are noted in modern obstetrics . Incidence of second stage CS has increased from 0.9 % to 2.2% (Vousden N, 2014)(Ref-1) . Second stage CS has been reported as a concerning increase trend within the increasing CS rate(Unterscheider J,2011;Vopusden N,2014) (Ref2).

This rising trends of second stage CS may be due to medico- legal problems and inability to do assisted vaginal delivery due to lack of expertise and wrong judgement of decision making by junior staffs. As the cervix is incorporated into the thin lower uterine segment and the fetal head is deeply impacted into the pelvis both maternal and foetal complications arise.

Intraoperative complications are obstetric haemorrhage, extended uterine incision, uterine artery tear, bladder injury, broad ligament haematoma and longer operative times. Post operative complications are PPH, sepsis, fever, blood transfusion hazards and longer hospital stay.

Neonatal complications include birth asphyxia, hypoglycaemia, meconium aspiration syndrome(MAS). respiratory distress syndrome(RDS). Delivery of fetal head is difficult due to deep impaction at pelvic cavity.

So to avoid these complications, proper and timely judgement regarding decision of CS must be taken by a senior obstetrician and CS must be supervised by a skilled obstetrician.

There are many indications of second stage CS. So proper indication must be noticed and reevaluated by expert obstetrician to avoid unnecessary CS at second stage and instrumental delivery must be considered where applicable to reduce the CS rate.

So the Royal college of obstetricians and gynaecologist (RCOG) recommended the presence of a consultant obstetrician whenever CS is performed in the second stage of labour (RCOG 2001)(Ref-3).

### MATERIALS AND METHODS

Our study was done at a tertiary care hospital. It is a prospective observational study from January 2018 to October 2018.

#### Our inclusion criterias :

- 1- Term pregnancy
- 2- Singleton pregnancy
- 3- Cephalic presentation
- 4- Onset may be spontaneous or drug induced

#### Exclusion criterias:

- 1- Pre term labour
- 2- Twin pregnancy
- 3- Other than cephalic and vertex presentation
- 4- Any medical or surgical co-morbidities

After proper consent we recruited total 80 patients in the study period. Their demographic data, antenatal history ,onset of labour, duration of labour, indication for second stage CS ,duration of second stage, attempt of instrumental delivery, intra and post operative complications and neonatal outcomes were taken in a proforma. All were recorded and analysed by SPSS statistical package. Institutional ethical committee approval was taken.

### RESULT

Total deliveries during our study period is 10300. Total CS is 3400, so rate is 33%. Second stage CS is 80, so rate is 2.35%. 50% patient's age group is between 25-30yrs (T-1). 18.75% patient are elderly > 30yrs. So mean maternal age is 26.7 years. Mostly patients are multiparous 37.5%. Nulliparous are 31% (T-2). 75% had spontaneous onset of labour where 25% were induced by PGE2 gel or oxytocin (T-3).

Majority 56.25% had non-progress of labor as indication thereafter obstructed labour 31.25% mainly referred from catchment areas where labour was not monitored by partograph and so they were neglected. Other indications were deep transverse arrest (DTA), foetal distress, failed instrumentation 6.25% (T-4). We found several maternal complications like PPH 31.64%, uterine angle extension 25%, cervical tear 6.25%, puerperal infection 31.25%. 37.5% patient had blood and component transfusion. Intra-operative blood loss more than one litre in 8.75% patient. 12 patient needed hospital stay more than seven days (T-5). It is seen that some patients had more than one complications. One patient succumbed due to rupture uterus though hysterectomy done.

37.5% babies are overweighted where 12.5% babies are underweight. Mean baby wt is 2.90kg (T-6). 40% babies were admitted in NICU due to various morbidities (50%). Same babies had more than one complications. Birth asphyxia was most common 37.5%. It was followed by hyperbilirubinemia 30%, RDS 25%, sepsis 25%, MAS 17.5%, hypoglycemia 10%. One baby was fresh stillborn due to ruptured uterus. Among 79 living babies total perinatal death was 10.12%. Total 5 (6.25%) patient have history of failed instrumentation either by forceps or ventouse (T-8).

**Table 1 Distribution according to age.(n-80)**

AGE	No.	%
<25	25	31.25
25-30	40	50
>30	15	18.75

**Table 2 Distribution according to parity. (n-80)**

Parity	No.	%
P <sub>0+0</sub>	25	31.25
P <sub>1+0</sub>	25	31.25
Multipara	30	37.5

**Table 3. Onset of labour.(n-80)**

Onset of labour	No.	%
Spontaneous	60	75
Induced	20	25

**Table 4. Indication of second stage caesarean section.**

Indication	No.	%
Non –progress of labour	45	56.25
Deep transverse arrest	13	16.25
Foetal distress	18	22.5
Failed instruments	5	6.25
Obstructed labour	5	6.25

Actual number of patients do not match with total patients due to more than one indications in same patient.

**Table 5. Maternal complication.**

Complications	No.	%
Uterine incision exclusion.	20	25
cervical tear	5	6.25
More intraoperative bleeding	7	8.75
Death	1	1.25
PPH	25	31.25
Puerperal infection	25	31.25
Needs blood transfusion	30	37.5
Prolonged hospital stay >7days	12	15

Actual number of patient do not match with the total number of patients as same patient have more than one complications.

**Table 6 New born outcome birth wt.(n-80)**

Wt(kg)	No.	%
<2.5	10	12.5
>2.5	40	50
>3	30	37.5

**Table 7 NICU admission complications:(n-40)**

Complications	No.	%	Death
MAS	7	17.5	2
Brith asphyxia	15	37.5	3
RDS	10	25	1
Sepsis	10	25	2
Hyperbilirubinemia	12	30	0
Hypoglycemia	4	10	
Fresh still born	1	1.25	1
Fetal injury	2	5	

Actual number of complications do not match with no of newborn as some baby had more than one complications.

**Table 8 Instrumental delivery.(n-80)**

Instrument	No.	%
Failed forcep	3	3.75
Failed ventouse	2	2.5
	5	6.25

**DISCUSSION-**

In our present study total CS rate is 33%. Second stage CS rate is 2.35% in comparison to published data 4.85% and 5.63% ( Ref-2,4). Maternal age is also considerable as it has impact on labour and vaginal delivery. In our study 18.75% mother are elderly group. Mean maternal age was 26.7 years. We found more second stage CS among multipara (37.5%) that is different from study by Babre VM et al (Ref-5). In multiparous patient commonly average baby weight was more. So cephalo-pelvic disproportion may occur. So descent may be hampered in second stage. 75% patient in our study showed spontaneous onset of labour. Though most common indication was non-progress of labour (56.25%). Obstructed labour was also high(31.25%). These may be due to the fact that our hospital is a tertiary care centre and many complicated and neglected labour patients are referred from peripheral hospitals. We selected duration of second stage is two hours in case of primigravida and one hour in multigravida plotted on a partograph. Decision making was done by expert registrar. We had no scope for labour analgesia. Injudicious administration of oxytocin may also prolong the second stage. We also kept in mind about it. Schissl et al, (Ref-6) found that the impact of epidural analgesia on the second stage of labour should be considered. 22.5% patient developed foetal distress. Lastly 6.25% patient had undergone CS due to failed instrumentation. It might be due to wrong judgement by junior staffs. Non-progress of labour and foetal distress percentage was same with published literature by Unterscheider J et al (Ref-2, 4).

The decision –delivery interval was 20-30 minutes. Women delivered at second stage of labour had higher risk of operative morbidity, PPH, visceral injury, sepsis etc, found by Alexander et al (Ref-7). We also encountered several maternal morbidity and unfortunately one patient died due to ruptured uterus. Mostly PPH (31.64%), puerperal infection (31.25%), traumatic injury in cervix and uterus and uterine artery were predominant morbidities. So blood and component transfusion needed in 37.5% and 15% patients stayed hospitals more than seven days. Puerperal infection was 31.25% similar to other studies by Baloch S, et al(Ref-8). A retrospective study from Canada has shown second stage CS carries 2.6 times high intraoperative traumatic complications by Allen et al (Ref-9). Some maternal morbidity might be due to inexperienced surgeons.

Big babies were associated with more neonatal complications as well as difficulty in delivery of the head due to impaction in pelvic cavity. 37.5% babies were heavy weight (>3kg). Mean birth weight 2.9 kg. Other techniques like Patwardhan and reverse breech technique to deliver the baby were associated with foetal visceral and bony injuries(5%). Study by Ayhan Sucak, Ascioglu et al (Ref-10) had proved adverse prognostic impact on foetal outcome. We observed eight perinatal death in NICU and one fresh stillborn in a case of ruptured uterus. Total perinatal death 11.25% that was high.

So our study had shown maternal and foetal morbidity and mortality in second stage CS.

High rate of birth asphyxia (37.5%), respiratory distress syndrome(25%), meconium aspiration syndrome(17.5%) among NICU admitted babies proved that all CS must be attended by expert neonatologists. Difficulty in head delivery must be avoided by push up method from vagina cautiously.

### Conclusion

Second stage CS can be avoided by using partograph, rational uses of oxytocins, proper and selective instrumental delivery and lastly but most importantly presence of senior and expert obstetrician in decision making. Maternal and foetal complications can be largely prevented by involvement of expert team of obstetrician, neonatologist and staff nurse and prompt resuscitation of newborn babies. Post operatively patient must be regularly followed up to detect any complication regarding vesico-vaginal fistula, wound sepsis, sub-involution etc. So second stage CS must be approached and conducted by an efficient team of doctors and other staffs to get healthy baby and healthy mother.

### REFERENCES

1. Vousden N, Cargill Z, Briley A, Tydeman G, Shennan AH(2014). Caesarean Section at full dilatation: incidence, impact and current management. *The Obstetrician and Gynaecologist*.16: 199-205.
2. Unterscheider J, McMenamin M, Cullinane F (2011). Rising rates of caesarean deliveries at full cervical dilatation: a concerning trend. *Eur J Obstet. Gynecol. Reprod Biol*. 157 (2):141-144.
3. Royal College of Obstetricians and Gynaecologists (2001). RCOG Clinical Effectiveness Support Unit. The National Sentinel Caesarean Section Audit Report. London; [www.rcog.org.uk/resources/public/pdf/nscs](http://www.rcog.org.uk/resources/public/pdf/nscs).
4. Davis G, Fleming T, Ford K, Mouawad MR, Ludlow J (2015). Caesarean section at full cervical dilatation *Aust NZ J Obstet&Gynecol*. 55 (6):565-571.
5. Babre VM, Bendre KR, Niyogi G (2017). Review of caesarean sections at full dilatation. *Int J Reprod Contracept Obstet. Gynecol*. 6 (6): 2491-2493.
6. Schiessl B, Janni W, Jundt K, Rammel G, Peschers U, Kainer F. Obstetrical parameters influencing the duration of the second stage of labour. *Eur J Obstet Gynecol Reprod Biol* 2005;118(1):17-20
7. Alexander JM, Leveno KJ, Rouse DJ (2007). Comparison of maternal and infant outcomes from primary caesarean delivery during the second compared with the first stage of labor. *Obstet&Gynecol*. 109 (4):917-921.
8. Baloch S, Khaskheli M (2008). Frequency of Second stage Intervention and its outcome in relations with instrumental vaginal delivery versus caesarean section. *J Ayub Med Coll Abbottabad*. 2 (1): 87-90.
9. Allen VM, O Connell CM, Baskett TF (2005). Maternal and perinatal morbidity of cesarean delivery at full cervical dilatation compared with cesarean delivery in the first stage of labour. *Br J Obstet Gynecol*; 112:986-90.
10. Ascioglu O et al. Second stage vs first-stage cesarean delivery: comparison of maternal and perinatal outcomes. *J Obstet and Gynecol*;2014:1-7.