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## A hospital-based assessment of the complications of caesarean section during second stage of labor: An observational study

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### Abstract

**Aim:** To evaluate the maternal and neonatal outcome of caesarean section in second stage of labour.

**Material and Methods:** This observational study was carried out in the Department of Obstetrics and Gynecology, Mamata Academy of Medical Sciences, Bachupally, Hyderabad, India, for the period of 1 year. Total 200 patients were included into the study. All caesarean sections performed at full cervical dilatation over this time period.

**Results:** Among the 200 patient's majority of them were in the age group of 20-30 years (73.5%). about 77.5% of the patients were primigravidae and only the remaining 22.5% were multigravida. 82.5% of patients from BPL socioeconomic class and 17.5% only from APL socioeconomic class. The commonest indications for doing caesarean section in the second stage of labour were cephalo pelvic disproportion, fetal distress and obstructed labour. Incidence of PPH was 27 out of 200 cases (13.5%). Post-operative wound infection was seen in 12(6%) and post-operative fever was seen in 32(16%) out of 200 cases. There were no cases of maternal deaths reported. The mean operative time was 51.7 min. The mean length of hospital stays was 6.8 days. Mean weight of the babies of the second stage caesarean section was 3.4 kg. 11 (5.5%) babies were admitted to the Neonatal Intensive Care Unit and 26 (13%) to neonatal nursery for management of respiratory distress, sepsis, jaundice, and observation. 25 (12.5%) babies had Neonatal jaundice and There were 2 neonatal deaths reported.

**Conclusion:** Caesarean sections during the second stage are increasing in prevalence and are associated with significant long-term psychological and physical maternal morbidity.

**Keywords:** Uterine incision extension, neonatal morbidity, neonatal jaundice, Apgar score

### Introduction

One frequent surgical procedure used to save the lives of mothers and/or infants is the caesarean section. In the last three decades, the number of cesarean sections performed globally has skyrocketed <sup>[1, 2]</sup>. By reducing the risk of severe difficulties during birth, its invention and practical use have allowed us to improve the quality of life for both mothers and their newborns. Recent years have seen a dramatic rise in the number of women undergoing cesarean delivery. Despite efforts to limit the number of abdominal births that require surgery, the number of cesarean sections performed each year has increased. This is worrisome since compared to natural childbirth, cesarean sections have been linked to a greater risk of negative consequences for both mother and child.

When the cervical opening has been fully dilated, the second stage of labor can begin. Second-stage interventions, such as aided vaginal delivery or instrumental delivery, are used to hasten the birth of the baby. Epidural analgesia, occipito posterior posture, lengthier first stage of labor, nulliparity, low maternal height, birth weight, and high station of head at full cervical dilation are all variables that increase the likelihood of a protracted second stage <sup>[3]</sup>.

Intervention during childbirth is necessary in 30–40% of cases worldwide. There is a considerable risk of maternal and fetal morbidity during a second cesarean. There are a number of causes for the rise in second cesarean sections, including inadequate oversight of such decisions and rising litigation over maternal morbidity. The decision to have a primary cesarean section might affect subsequent pregnancies and labor and delivery in significant ways. Second-stage labor that lasts too long is associated with an increased risk of complications such bladder damage, postpartum hemorrhage, and an extended hospital stay <sup>[4]</sup>. Trial of scar allows between 30 to 80 percent of women who have already had one lower segment caesarean surgery to have a

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successful vaginal birth [5]. A decrease in the rate of cesarean sections may result from efforts to encourage scar trials followed by vaginal births. Many medical professionals continue to worry most about the potential for uterine rupture and other morbidities following a failed scar trial [6]. This research set out to examine the effects of caesarean sections performed during the second stage of labor on both the mother and the new-born.

### Material and methods

This prospective observational study was carried out in the department of Department of Obstetrics and Gynecology, Mamata Academy of Medical Sciences, Bachupally, Hyderabad, India, for the period of 1 year after taking the approval of the protocol review committee and institutional ethics committee. After taking informed consent detailed history was taken from the patient.

### Methodology

Total 200 patients were included into the study. All caesarean sections performed at full cervical dilatation over the time period of one year. Caesarean section cases were identified through data log of the operating theatre. Record of labor and operation reports, were reviewed for all CS cases over the study period. Women with a singleton fetus in cephalic presentation at term ( $\geq 37$  weeks) who underwent CS at full dilatation were included in the study while the multigravida with comorbid conditions like diabetes and preeclampsia were excluded from the study. Indications, instrumentation before caesarean section, intra operative Complications like haemorrhage, uterine incision extension, atonic post-partum haemorrhage (PPH), postoperative complications like febrile illness, wound infection and neonatal morbidity and mortality were evaluated.

**Results:** During the two year period, a total of 9500 women delivered by caesarean section, 5100 emergency and 4400 elective cases. Of these 200(2.10%) were at full cervical dilatation,  $>37$  weeks gestation with a singleton fetus in cephalic presentation. Among the 200 patient's majority of them were in the age group of 20-30 years (73.5%). about 77.5% of the patients were primigravidae and only the remaining 22.5% were multigravida. 82.5% of patients from BPL socioeconomic class and 17.5% only from APL socioeconomic class. Majority were booked patients, only 1.5% was un-booked from remote areas near the district. The commonest indications for doing caesarean section in the second stage of labour was cephalo pelvic disproportion, fetal distress and obstructed labour.

**Table 1:** Maternal demographic features

Age	N=200	%
Below 20 years	6	3
20-30 years	147	73.5
30-40 years	27	13.5
Above 40 years	20	10
Socio economic status		
APL	35	17.5
BPL	165	82.5
Parity		
Primi	155	77.5
Multi	45	22.5
Gestational age		
37-38 weeks	81	40.5
38 weeks 1 day-39 weeks	87	43.5
39weeks 1 day -40 weeks	26	13
$\geq 40$ weeks	6	3

**Table 2:** maternal complication

Maternal Complications	Number	Percentage
Atonic PPH	27	13.5%
Uterine incision extension	29	14.5%
Postoperative fever	32	16%
Wound infection requiring resuturing	12	6%
Maternal death	nil	
bowel or bladder injury	Nil	
Blood transfusion required	6	3
Blood stained urine	37	18.5

Incidence of PPH was 27 out of 200 cases (13.5%). There were no cases of bowel or bladder injury reported. Post-operative wound infection was seen in 12(6%) and post-operative fever was seen in 32(16%) out of 200 cases. There were no cases of maternal deaths reported. The mean operative time was 51.7 min. The mean length of hospital stays was 6.8 days. Mean weight of the babies of the second stage caesarean section was 3.4kg. 11(5.5%) babies were admitted to the Neonatal Intensive Care Unit and 26 (13%) to neonatal nursery for management of respiratory distress, sepsis, jaundice, and observation. 25 (12.5%) babies had Neonatal jaundice and There were 2 neonatal deaths reported.

**Table 3:** Fetal and new born complication

Perinatal complications	Number	%
Meconium stained liquor	69	34.5%
Admission to nursery	26	13%
NICU admission	11	5.5%
Neonatal jaundice	25	12.5%
Cephalhematoma	4	2%
Apgar score $<7$ at 5min	22	11%
neonatal deaths	2	1
stillbirth	2	1
Respiratory distress	63	31.5

### Discussion

The present study shows that the caesarean section performed in the second stage of labour have significantly higher maternal and neonatal morbidity. In our study among the 200 patient's majority of them were in the age group of 20-30 years (73.5%). about 77.5% of the patients were primigravidae and only the remaining 22.5% were multigravida. In the study by Malathi *et al.*, most of women were between 21-30 years of age (58%) and primigravida (72%) [7]. Higher rate of second stage caesarean section in young primigravida woman was probably due to higher incidence of rigid perineum, fetopelvic disproportion and uterine inertia.

The international literature suggests that within a rising CS rate, there is an increasing trend to perform CS at full cervical dilatation. The strong medico-legal mind set in current obstetrics, and concerns over neonatal and maternal morbidity associated with difficult or failed instrumental delivery may contribute to this trend [8]. Over the 2-year study period, the overall CS rate was higher than international rates [9, 10]. However, our rates of CS at full cervical dilatation are lower than other published cohorts [10]. The lower rate may be explained by more women not reaching full dilatation due to an arrest in the first stage of labor or unsuccessful induction of labor. Caesarean section in the second stage of labor is a technically difficult operation with distortion of pelvic anatomy and the fetal head that is often deeply impacted in the maternal pelvis. Women delivered by CS at full dilation have a higher risk of obstetric haemorrhage, bladder injury, extended uterine tear leading to broad ligament

hematoma, infection and longer hospital stay<sup>[3]</sup>. A retrospective study from Canada has shown that women delivered by Caesarean sections at full dilatation of the cervix were 2.6 times likely to have intraoperative traumatic complications<sup>[3]</sup>.

In our study uterine incision extension was seen in 14.5%, which is slightly higher compared to the other studies<sup>[11, 12]</sup>. This might be due to the fact that the most common indication of second stage in our study was cephalopelvic disproportion with major caput and moulding formation making the delivery of the fetal head challenging. The most common maternal operative complications seen in our study was blood stained urine in 37 (18.5%), febrile illness in 33 (16.5%), and wound infection in 12 (6%) cases. Atonic postpartum haemorrhage was seen in 27 (13.5%) cases, which is near to in the previous studies<sup>[11, 12]</sup>. The use of prophylactic uterotonics in second stage Caesarean could have contributed to this decreased number. One woman returned to the operating room for management of postpartum haemorrhage. The rest of the PPH cases were managed with uterotonic drugs and uterovaginal packing.

6 (3%) of these women required blood transfusion. Controversies regarding the fetal outcome in the cases of caesarean sections in second stage of labor are seen throughout literature. Adverse prognostic impact on fetal outcome was noted in the studies conducted by Sucak<sup>[13]</sup> and Asicioglu *et al.*<sup>[14]</sup> However this was contradicted by other studies.<sup>[15, 16]</sup> The most common fetal complication was meconium stained amniotic fluid, seen in 69 (34.5%) cases which is comparable to other studies<sup>[17]</sup>. This might be due to intra-operative fetal hypoxia caused by strong uterine contraction, deeply impacted fetal head and longer duration of second stage labor. Neonatal Intensive Care Unit admission rate of 11 (5.5%) and nursery admission rate of 26 (13%) seen in our study is consistent with published literature<sup>[18]</sup>. This was mostly due to newborns requiring septic screening and intravenous antibiotics. Fresh still birth and perinatal deaths were recorded 23 (4.9%) and 7 (1.5%), respectively in a study<sup>[19]</sup>. while we had only 2 fresh stillbirth and 2 early neonatal death. Similarly, the same study<sup>[19]</sup> reported 37 (6.6%) cases with Apgar score less than five at five minutes while only 22 (11%) of our babies had an Apgar score of complications. It can be avoided by careful judgement for cephalopelvic disproportion, attendance of skilled health care provider during labor and deliveries and implementation of effective instrumental delivery leading to a better fetal outcome. The focus should be on ensuring normal progression of labor, proper use of the partogram, pain relief measures, oxytocin augmentation and the promotion of effective pushing techniques.

### Conclusion

The present study concluded that the caesarean sections during the second stage are increasing in prevalence and are associated with significant long-term psychological and physical maternal morbidity.

### Reference

1. Bailit JL, Love TE, Mercer B. Rising cesarean rates: are patients sicker? *American Journal of Obstetrics & Gynecology*. 2004;191:800-803.
2. Declercq E, Menacker F, Macdorman M. Maternal risk profiles and the primary cesarean rate in the United States, 1991-2002. *American Journal of Public Health*. 2006;96:867-872.
3. 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. *BJOJ*. 2005;112:986-990.
4. Cebekulu L, Buchman EJ. Complications associated with caesarean section in the second stage of labour. *Int J Gynecol Obstet*. 2006;95:110-114.
5. Landon MB, Hauth JC, Leveno KJ, Spong CY, Leindecker S, Varner MW, *et al.* Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. *The New England Journal of Medicine*. 2004;351:2581-2589.
6. McMahan MJ, Luther ER, Bowes WA, Jr, Olshan AF. Comparison of a trial of labor with an elective second cesarean section. *New England Journal of Medicine*. 1996;335:689-695.
7. Malathi J, Sunita V. Comparison of obstetric outcome between first and second stage caesarean section in rural tertiary hospital. *Int J Pharma Biomed Res*. 2012;3:222-225.
8. Menticoglou SM, Manning F, Harman C, Morrison I. Perinatal outcome in relation to second stage duration. *Am J Obstet Gynecol*. 1995;173(3):906-912.
9. Vousden N, Cargill Z, Briley A, Tydeman G, Shennan AH. Caesarean section at full dilatation: incidence, impact and current management. *The Obstetrician & Gynaecologist*. 2014;16:199-205.
10. Unterscheider J, McMenamin M, Cullinane F. Rising rates of caesarean deliveries at full cervical dilatation: a concerning trend. *Eur J Obstet Gynecol Reprod Biol*. 2011;157(2):141-144.
11. Babre VM, Bendre KR, Niyogi G. Review of caesarean sections at full dilatation. *Int J Reprod Contracept Obstet Gynecol*. 2017;6(6):2491-2493.
12. Shahla Baloch, Meharunnissa Khaskheli, Imdad A Khushk, Aneela Sheeba. Frequency of Second stage Intervention and its outcome in relation with instrumental vaginal delivery versus caesarean section. *J Ayub Med Coll Abbottabad*. 2008;20(1):87-90.
13. Sucak A, Celen S, Akbaba E, Soysal S, Moraloglu O, Danisman N. Comparison of nulliparas undergoing cesarean section in first and second stages of labour: a prospective study in a tertiary teaching hospital. *Obstet Gynecol Int*. 2011, 986506.
14. Asicioglu O, Güngördük K, Yildirim G, Asicioglu BB, Güngördük ÖÇ, Ark C, Günay T, Yenigül N. Second-stage vs first-stage caesarean delivery: Comparison of maternal and perinatal outcomes. *Journal of Obstetrics and Gynaecology*. 2014;34(7):598-604
15. Selo-Ojeme D, Sathiyathan S, Fayyaz M. Caesarean delivery at full cervical dilatation versus caesarean delivery in the first stage of labour: comparison of maternal and perinatal morbidity. *Archives of gynecology and obstetrics*. 2008;278(3):245-249
16. Alexander JM, Leveno KJ, Rouse DJ, Landon MB, Gilbert S, Spong CY, *et al.* Comparison of maternal and infant outcomes from primary cesarean delivery during the second compared with first stage of labor. *Obstetrics & Gynecology*. 2007;109(4):917-921.
17. Jayaram J, Mahendra G, Vijayalakshmi S. Fetomaternal Outcome in Cesarean Sections Done in Second Stage of Labor. *Indian Journal of Obstetrics and Gynecology Research*. 2016;3(1):51-54.
18. Davis G, Fleming T, Ford K, Mouawad MR, Ludlow J. Caesarean section at full cervical dilatation. *Australian and New Zealand Journal of Obstetrics and Gynaecology*. 2015;55(6):565-571.

19. Umbeli T, Salah Ismail, Kunna A, Elmahgoub A, Nasr A, Rabaa A. Maternal and neonatal complications associated with caesarean section in the second stage of labour at Omdurman maternity hospital during 2012-2013. Merit Research Journal of Medicine and Medical Sciences. 2014;2(10):225-228.