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RESEARCH ARTICLE

FETOMATERNAL OUTCOME IN CESAREAN SECTIONS DONE IN SECOND STAGE OF LABOR

Nanthini and Mirunalini, S

Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College and Hospital, Annamalai University, Chidambaram – 608 002

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ABSTRACT

Objective: To study the fetomaternal outcome in cesarean sections done in second stage of labor
Method: It is a prospective observational study of 60 cases of cesarean sections done in second stage of labor in Rajah Muthiah Medical College and Hospital, Annamalai University, Chidambaram, from November 2014 to October 2016.
Result: There were 4725 deliveries including 3071 cesarean sections in the study period. The cesarean rate was 64.99%. Of 3071 cases 60 were performed in second stage of labor contributing 1.26% of all cesarean sections. Most common indication for cesarean section in second stage of labor is obstructed labour due to CPD. Second stage cesarean sections are associated with increased risk of atonic PPH requiring medical management (8.3%), lower segment tears including angle extension and broad ligament hematoma (25%) along with other complications like extraction difficulty, post operative fever, wound sepsis, longer duration of hospital stay. Meconium stained amniotic fluid is present in 43.3% cases. Though timely second stage cesarean sections reduce perinatal mortality complications like low apgar, MAS, neonatal death can occur.
Conclusion: Cesarean sections done in second stage of labor are associated with increased intra-operative maternal complications and neonatal morbidity.
Theme: Healthy mother, healthy baby: Timely intervention to reduce fetomaternal complications.

INTRODUCTION

Cesarean delivery is defined as the birth of the fetus through incisions in the abdominal wall and the uterine wall. Cesarean is the most commonly performed major abdominal operation in women all over the world. Variable rates of cesarean sections are reported between and within the countries[1,2]. The rate of cesarean delivery continues to increase despite efforts to constrain operative abdominal deliveries. This is a cause for concern because cesarean section is associated with higher likelihood of adverse outcome for both mother and fetus as compared to vaginal delivery[3].

Cesarean can be performed before labor, during first and second stages of labor. A decrease in the rates of operative vaginal delivery has been observed with a corresponding increase in the cesarean deliveries during second stage of labor[3].

Second stage of labor begins when cervical dilatation is complete and end with the fetal delivery[1]. There has been considerable debate in the recent years on the duration of the second stage of labor. In the past the second stage of labor was limited to < 2hours[4,5].

Recently the duration of second stage is extended upto three hours with regional anaesthesia[6,7].

Second stage interventions are the methods to facilitate delivery of the fetus in the form of assisted vaginal delivery or by instrumental delivery[8]. Worldwide, 10-20% of deliveries require some form of intervention which is frequently cesarean section[9]. A second stage cesarean is technically difficult due to engagement of the fetal head and is associated with increased maternal and fetal morbidity[3]. The maternal morbidity includes major hemorrhage, uterine incision extension into the broad ligament and prolonged operating time[10,11,12]. Neonatal mortality and morbidity is mainly due to hypoxia and fetal trauma[13,14].

This is a prospective observational study of fetomaternal outcome in cesarean sections done in second stage of delivery.

Objective

To study the fetomaternal outcome in cesarean sections done in second stage of labor.

METHODS AND MATERIALS

This is a prospective observational study of 60 cases of cesarean sections done in second stage of labor in a rural medical college, Rajah Muthiah Medical College and Hospital, Annamalai University, Chidambaram, from November 2014 to October 2016. This study was approved by local ethics committee. Verbal consent was obtained from the patient. The onset of labor is defined as the initiation of regular painful uterine contractions. The second stage of labor is defined as the period of time from full cervical dilatation (10cm) to delivery.

Inclusion criteria

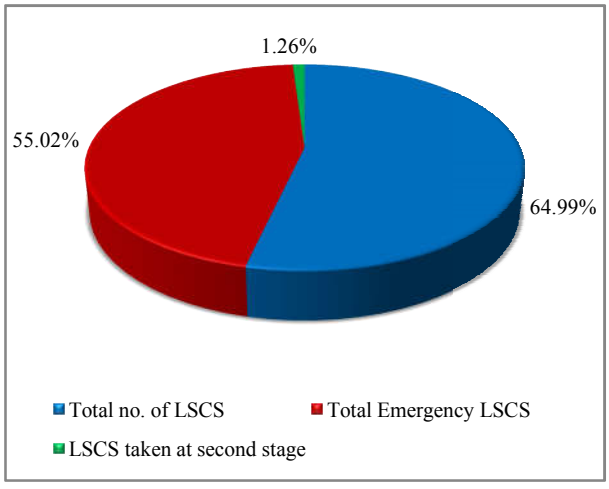
- Singleton pregnancy irrespective of parity
- Period of gestation of >37 weeks
- Cephalic presentation
- Without previous LSCS
- **Exclusion criteria:**
- Multiple pregnancy
- Preterm deliveries
- Malpresentations
- Medical complications associated with pregnancy

RESULT

There were total 4725 deliveries during the study period. 3071 (64.9%) cesarean sections, of the 3071 cases of cesarean sections, 60 cases were performed in the second stage of labor contributing 1.26% of total deliveries and 1.95% of all sections. Most common indication for cesarean section in second stage of labor is obstructed labour due to cephalopelvic disproportion (45%).

Table 1 Incidence of second stage cesarean section

Mode of Delivery	No. of patients	Percentage
Total no. of deliveries	4725	
Total no. of LSCS	3071	64.99
Total Emergency LSCS	2600	55.02
LSCS taken at second stage	60	1.26



Incidence of second stage cesarean section

The mean age of the patients who underwent cesarean in the second stage was 25.78 years. Among these 60 patients, 41 (81%) were primi gravida and 11 (18%) were multi gravida.

Second stage cesareans are associated with increased risk of PPH. Total 5 patients had PPH. managed medically lower segment tears including extension, broad ligament hematoma were 25% along with other complications like extraction difficulty, blood stained urine, post operative fever, wound sepsis and longer hospital stay (mean duration being 8.9 days).

Table 2 Matenal Morbidity

Complication encountered	Number of patients	Percentage
PPH (medical management)	5	8.3%
LUS tear, angle extension	15	25%
Febrile morbidity	9	15%
Wound sepsis	2	20%
Blood Transfusion	8	13.3%

Neonatal issues

Among the 60 babies born 35 were female and 25 were male babies. The mean birth weight was 2.8 kg. Number of babies with birth weight >=3 kg is 20, Meconium stained amniotic fluid is present in 43.3% cases. 11 Babies had APGAR score at 5^{th} minute less than 4 Birth asphyxia is seen in 16 (26.7%) cases, neonatal death 3 cases. Though timely second stage cesarean sections reduce the neonatal complications,

Table 3 Neonatal outcome

Neonatal morbidity	Number of patients	Percentage
APGAR < 4 at 5 mins	11	18.3
NICU (A)	40	66.7
Birth asphyxia	16	26.7
MAS	12	20.0
Death	3	5.0
BMR	6	10.0

DISCUSSION

This was a prospective observational study conducted at a rural medical college from November 2014 to October 2016. Out of 3071 cesarean sections 60 sections were performed in the second stage of labour which contributes to 1.26% of the total deliveries and 1.95% of all sections. Obstructed labour was the most common indication (45%) for cesarean section in second stage of labor. The study conducted by Jonna Malathi and Venigalla Sunita[15] had the rate of second stage cesarean section 4.1%. In the same study obstructed labour was the most common indication (78%) for cesarean section in the second stage[16].

The mean age of these patients was 25.78 years. Among these 80% were primigravida and 18% were multigravida. In a study on frequency of second stage interventions and it`s outcome in relation with instrumental vaginal delivery by Shahla Baloch *et al.*[8] most of the women who need second stage intervention were among 21 to 30 years. Primigravida also contributed 45%. In the study by Malathi and Sunita, 61% women were in the age group of 21 to 30 years and primigravida contributed to 74%. The increased frequency of second stage cesareans in primigravidas could be cephalopelvic disproportion, rigid perineum and lack of experience of previous labor.

In our study maternal morbidity was observed in the form of PPH 5 (8.5%.) cases which were managed medically. Other maternal complications were LUS tear and angle extension

(25%), febrile morbidity (15%), and wound sepsis 20%. In the study by Malathi and Sunita, PPH was observed in 8%, out of these 2% were managed medically. Surgical management was done in 6% cases. Other maternal morbidities were also similar to our study. Similarly in the study by Shahla B[8], PPH was present in 12.5%, wound infection in 8.33% and angle extension in 5.41% cases.

The cesarean section performed in second stage of labor was technically difficult because fetal head was engaged in the pelvis, uterine muscles were thin and tense, identification of the bladder and lower segment was difficult. Apart from these relatively large baby weight.

Neonatal morbidity was also much significant in our study. The mean birth weight among these babies was 3kg. MSAF was present in 43.3% cases. There were controversies regarding the fetal outcome in the cases of cesarean sections in second stage of labor. Study by Ayhan Sucak, Asicioglu, Malati etc had proved adverse prognostic impact on fetal outcome. But many studies like Allen *et al*, Alexander, Selo-Ojeme etc. failed to demonstrate an increased fetal complications.

CONCLUSION

Cesarean sections done in second stage of labor are associated with increased maternal complications and neonatal morbidities.

Prevention of complications

- Operation should ideally be performed/ supervised by an experienced obstetric surgeon.
- Digital rotation from occipito posterior position to occipito anterior position.
- Better training in instrumental delivery
- Intrpartum translabial ultrasonography
- Alarming the neonatalogist before hand
- Timely decision for cesarean section especially when the expected fetal weight is more than 3 kg.

Theme: Healthy Mother, Healthy Baby: Timely Intervention To Reduce Fetomaternal Complications.

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