

Fetomaternal Outcome in Cesarean Sections Done in Second Stage of Labor

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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 26 cases of cesarean sections done in second stage of labor in Adichunchanagiri institute of medical sciences from January to September 2014.

Result: There were 1533 deliveries including 468 cesarean sections in the study period. The cesarean rate was 30%. Of 468 cases 26 were performed in second stage of labor contributing 1.6% of total deliveries and 5.5% of all cesarean sections. Most common indication for cesarean section in second stage of labor is deep transverse arrest. Second stage cesarean sections are associated with increased risk of atonic PPH requiring surgical management (7.69%), lower segment tears including angle extension and broad ligament hematoma(15.38%) along with other complications like extraction difficulty, post operative fever, wound sepsis, longer duration of hospital stay. Meconium stained amniotic fluid is present in 30.76% cases. Though timely second stage cesarean sections reduce perinatal mortality few complications like neonatal hyperbilirubinemia 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.

Key words: Cesarean section, Second stage of labor, Maternal morbidity, Complications

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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 delivery³.

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 labor³.

Second stage of labor begins when cervical dilatation is complete and end with the fetal delivery¹. 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 < 2 hours^{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 delivery⁸. Worldwide, 10-20% of deliveries require some form of intervention which is frequently cesarean section⁹. A second stage cesarean is technically difficult due to engagement of the fetal head and is associated with increased maternal and fetal morbidity³. 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 26 cases of cesarean sections done in second stage of labor in a rural medical college, Adichunchanagiri institute of medical sciences from January 2014 to September 2014. 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
- with/without previous LSCS

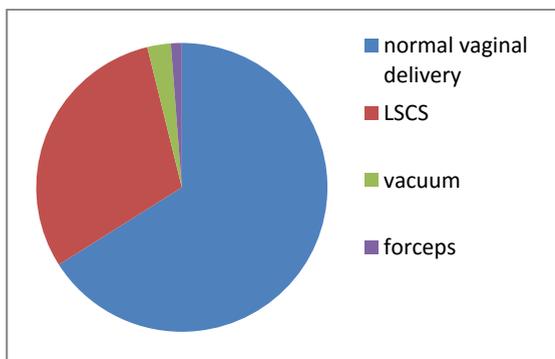
Exclusion criteria:

- Multiple pregnancy
- Preterm deliveries
- Malpresentations
- Medical complications associated with pregnancy

Result

There were total 1533 deliveries during the study period. Out of these 1006 (65.62%) deliveries were normal vaginal deliveries, 468 (30%) cesarean sections, 40 (2.6%) were vacuum assisted vaginal deliveries and 19 (1.23%) were forceps deliveries. Of the 468 cases of cesarean sections, 26 cases were performed in the second stage of labor contributing 1.6% of total deliveries and 5.5% of all sections. Most common indication for cesarean section in second stage of labor is deep transverse arrest (38.46%) and most common fetal position was the occipito – posterior position (30.76%).

Mode of delivery	Number	Percentage
Normal vaginal delivery	1006	65.62%
LSCS	468	30%
Vacuum	40	2.6%
Forceps	19	1.23%

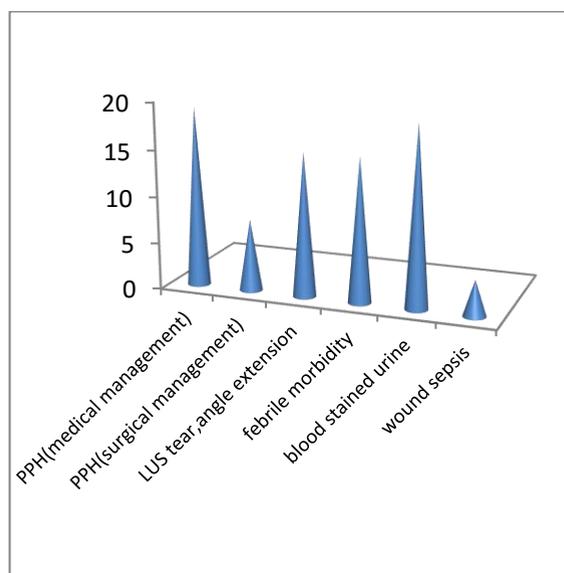


The mean age of the patients who underwent cesarean in the second stage was 22.84 years. Among these 26 patients, 16 (61.53%) were primi gravida and 10 (38.46%) were multi gravida.

Second stage cesareans are associated with increased risk of PPH. Total 7 patients had PPH .Of these surgical management was needed for 2 (7.69%) and rest of the 5 patients were managed medically. Lower segment tears including extension, broad ligament hematoma were 15.38% along with other

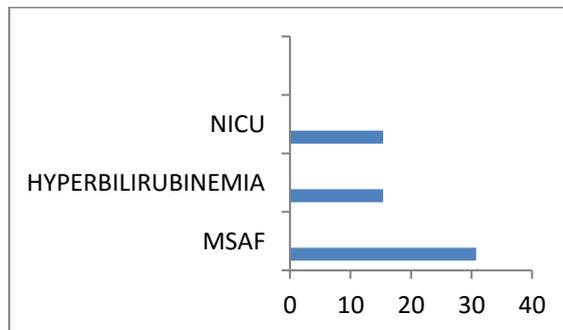
complications like extraction difficulty, blood stained urine, post operative fever, wound sepsis and longer hospital stay (mean duration being 8.9 days).

Complication encountered	Number of patients	Percentage
PPH(medical management)	5	19.23%
PPH (surgical management)	2	7.69%
LUS tear, angle extension	4	15.38%
Febrile morbidity	4	15.38%
Blood stained urine	5	19.23%
Wound sepsis	1	3.84%



Neonatal issues:

Among the 26 babies born 10 were female and 16 were male babies. The mean birth weight was 3.3 kg. Number of babies with birth weight >=3 kg is 22(84.61%). Meconium stained amniotic fluid is present in 30.76% cases. None of the baby had APGAR score at 5th minute less than 7. Though timely second stage cesarean sections reduce the neonatal complications, hyperbilirubinemia occur in few neonates.



Discussion

This was a prospective observational study conducted at a rural medical college from January 2014 to September 2014. Out of 468 cesarean sections 26 sections were performed in the second stage of labour which contributes to 1.69% of the total deliveries and 5.55% of the sections. Deep transverse arrest was the most common indication (38.46%) for cesarean section in second stage of labor. The study conducted by Jonna Malathi and Venigalla Sunita¹⁵ had the rate of second stage cesarean section 4.1%. In the same study deep transverse arrest was the second most common indication (22%) for cesarean section in the second stage¹⁶.

The mean age of these patients was 22.84 years. Among these 61.53% were primigravida and 38.46% were multigravida. In a study on frequency of second stage interventions and its 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 7(26.9%) cases. Of these which required surgical management i.e. B-Lynch sutures was 7.69%. Rest of the 19.23% cases were managed medically. Other maternal complications were LUS tear and angle extension (15.38%), febrile morbidity (15.38%), blood stained urine (19.23%) and wound sepsis 3.84%. 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 B⁸, 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 not much significant in our study. The mean birth weight among these babies was 3.3kg. MSAF was present in 30.76% cases. There were controversies regarding the fetal outcome in the cases of cesarean sections in second stage of labor. Study by Ayhan Sucak, Ascioglu, Malati etc had proved adverse prognostic impact on fetal outcome. But many studies like Allen et al, Alexander, Selo-Ojeme etc. including the current study 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.

Limitations

This study had limitations related to sample size and did not studied the effect of second stage cesarean section on less common but serious outcomes such as cesarean hysterectomy, maternal death and perinatal death.

Scope for further studies:

- Unexpected breech with full cervical dilatation
- Delivery of second twin after vaginal birth of first twin.

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
- Intrapartum translabial ultrasonography
- Alarming the neonatologist 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.

Conflict of Interest: None

Source of Support: Nil

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