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RESEARCH ARTICLE

FETO-MATERNAL OUTCOME IN SECOND STAGE CAESAREAN SECTION IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Methodology: The study was conducted in the Post graduate department of Obstetrics and Gynaecology of Lalla Ded Hospital, GMC Srinagar, a tertiary care centre over a period of 18 months. 100 caesarean sections performed on 100 female subjects in second stage of labor were included in this study based on inclusion criteria. **Data Collection:** Obstetrical, maternal and fetal baseline criteria and outcomes were recorded and compared. All the cases, that fulfilled the inclusion criteria were analyzed in terms of indications, instrumentation before caesarean section; intra operative complications like hematuria, uterine incision extension, lower uterine segment tear, atonic PPH; postoperative complications like febrile illness, wound infection; and neonatal morbidity and mortality by way of NICU admission, APGAR score, neonatal sepsis and stay in the hospital. **Results** The mean maternal age at presentation was 24.66 (\pm 3.42) years with the range from 17 to 35 years. Maximum number of cases were seen between the age group of 20-25 years (58; 58%), followed by 25-30 years (28; 28%). Out of 100 pregnancies, 74 were primigravida and 26 were multigravida pregnancies. The gestational age was between 37-39 weeks in 94 deliveries and only 6 deliveries were above 40 weeks. The mean gestational age was 37.94 \pm 1.03 weeks. Majority of patients belonged to Low Socioeconomic group (64; 64%) followed by Middle Socioeconomic group (34; 34%). **Conclusion:** Caesarean section in the second stage of labor is a challenging operation with distortion of pelvic anatomy and a fetal head that is often deeply impacted in the maternal pelvis. So, proper fetal and pelvic assessment should be done to assess the potential impact of the fetus on the characteristics of the labor and every attempt should be made to avoid second stage caesarean section, if possible. When faced with difficult decisions relating to the management, a second opinion from a senior obstetrician should be sought. If second stage caesarean section is unavoidable, a multidisciplinary approach should be followed involving a senior anaesthetist, a senior obstetrician and a neonatologist

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INTRODUCTION

Emergency Caesarean sections are most commonly for failure to progress in labor or suspected/confirmed fetal compromise. A planned or 'elective' Caesarean section is performed for a variety of indications. The following are the most common, but this is not an exhaustive list: Breech presentation, Other malpresentations – e.g., unstable lie (a presentation that fluctuates from oblique, cephalic, transverse etc.), Transverse lie or Oblique lie, Twin pregnancy, Maternal medical conditions (e.g., cardiomyopathy), fetal compromise,

Transmissible disease (e.g., poorly controlled HIV), Primary genital herpes, Placenta praevia, Maternal diabetes, etc. Elective Caesarean sections are usually planned after 39 weeks of pregnancy to reduce respiratory distress in the neonate – known as Transient Tachypnoea of the Newborn. **Methodology:** The study was conducted in the Post graduate department of Obstetrics and Gynaecology of Lalla Ded Hospital, GMC Srinagar, a tertiary care centre over a period of 18 months. 100 caesarean sections performed on 100 female subjects in second stage of labor were included in this study based on inclusion criteria. The main aim of this study was to determine the indications for second stage Caesarean section and the feto-maternal outcome in second stage Caesarean

Section. Selection of Sample: All caesarean sections performed at full cervical dilatation were identified and their records were checked. Among these females, those who fulfilled the inclusion criteria were taken into study after taking informed written consent from them or their husband.

INCLUSION CRITERIA

- Age group between 18 to 40 years
- Singleton Pregnancies irrespective of parity
- Fetus in Cephalic Presentation
- Period of gestation \geq 37 weeks
- Spontaneous or Induced labor

EXCLUSION CRITERIA

- Multiple Pregnancies
- Fetus with congenital anomalies
- Pregnant women with associated medical illness (e.g., Hypertensive disorders of pregnancy, GDM etc.)
- Fetal presentation other than cephalic
- Preterm delivery
- Second stage caesarean sections done outside and referred to our hospital for further management.

DATA COLLECTION: Obstetrical, maternal and fetal baseline criteria and outcomes were recorded and compared. All the cases, that fulfilled the inclusion criteria were analyzed in terms of indications, instrumentation before caesarean section; intra operative complications like hematuria, uterine incision extension, lower uterine segment tear, atonic PPH; postoperative complications like febrile illness, wound infection; and neonatal morbidity and mortality by way of NICU admission, APGAR score, neonatal sepsis and stay in the hospital. Type of anaesthesia and the operative technique were same in all the patients. The surgical technique of caesarean section was standardized. Prophylactic antibiotics were administered to all patients.

Table 1. Distribution of cases based on age.

Age Group in years	No. of Patients	Percentage (%)
<20	6	6
20-25	58	58
25-30	28	28
30-35	8	8
Total	100	100

The mean maternal age at presentation was 24.66 (\pm 3.42) years with the range from 18 to 35 years. Maximum number of cases were seen between the age group of 20-25 years (58; 58%), followed by 25-30 years (28; 28%). 8% of the patients were between 30-35 years and 6% of the patients belonged to less than 20 years of age. 64 patients (64%) were below 25 years of age, whereas 92 patients (92%) were below 30 years and only 8 patients (8%) were above 30 years.

Table 2. Distribution of cases based on Parity

Parity	No. of Patients	Percentage (%)
Primigravida	74	74
Multigravida	26	26

Out of 100 pregnancies, 74 were primigravida and 26 were multigravida pregnancies. The parity distribution is shown in Table 2 and Graph 2. Of the total 100 caesarean section deliveries, 52 were emergency caesarean sections whilst 48 were electives.

Table 2. Distribution of cases based on Gestational Age

Gestational Age	No. of Patients	Percentage (%)
37-38 weeks	38	38
38-39 weeks	42	42
39-40 weeks	14	14
>40 weeks	6	6

The gestational age was between 37-39 weeks in 94 deliveries and only 6 deliveries were above 40 weeks. The mean gestational age was 37.94 ± 1.03 weeks.

Table 2. Distribution based on Socioeconomic status (SES)

Socioeconomic status	No. of Patients	Percentage (%)
Low	64	64
Middle	34	34
Upper Middle	2	2

Majority of patients belonged to Low Socioeconomic group (64; 64%), followed by Middle Socioeconomic group (34; 34%). The least number of cases belonged to Upper Socioeconomic Class (2; 2%).

Table 5. Type of Labor

Type of labor	No. of patients (%)
Spontaneous	35 (35)
Induced	65 (65)

Labor was induced in 65% of patients, while the rest 35% had spontaneous onset of labor

Table 6. Method of Delivery

Method of delivery	No. of Patients
Breech	60
Vertex	14
Push	4
Foot	10
Patwardhan	12

Most common method of delivery of deeply engaged head was Breech method in 60 cases (60%) followed by vertex method in 14% and Patwardhan method in 12%. In this study, the mean maternal age at presentation was 24.66 (\pm 3.42) years with the range from 18 to 35 years.

Maximum number of cases were seen between the age group of 20-25 years (58 %), followed by 25-30 years (28%). 88% women were in the age group of 20-30 years. The incidence of second stage caesarean sections was more in primigravida (74%) than multigravida (26%) in the present study; this observation was similar to study by Babre VM 61 and Feinstein U et al. 62. In a study on frequency of second stage interventions and its outcome in relation with instrumental vaginal delivery by Shahla Baloch et al. 63 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 64, 61% women were in the age group of 21 to 30 years and primigravida contributed to 74%. The increased frequency of second stage caesarean's in primigravida's could be cephalopelvic disproportion, rigid perineum and lack of experience of previous labor. The rate of emergency Caesarean section (52 %) found in this study is similar to findings in other parts of the world, (Heffner LJ et al 65 and Seffah JD et al 66). In 1997, Revah et al 67 suggested that the emergency Caesarean section is associated with increased maternal morbidity, compared with elective Caesarean section.

In the present study, majority of patients belonged to Low Socioeconomic group (64%), followed by Middle Socioeconomic group (34%). The least number of cases belonged to Upper Socioeconomic Class (2%). Study of Alam PI 68 and Chowdhury ML69 have shown comparable results, e.g. Chowdhury ML69 in her study has shown that 95% of the patients were from low socioeconomic condition. This could be explained by the fact that most people from lower socioeconomic class attend government hospitals. Decision making, specifically for second-stage Caesarean Section, requires an experienced clinician to evaluate the level of the fetal head above the pelvic brim by bimanual pelvic examination, the degree of moulding of the fetal skull bones and the need to request the woman to bear down in the lithotomy position to assess descent of the fetal head and CPD (cephalopelvic disproportion). There is controversy over the technique of choice for delivery of the fetal head impacted in the maternal pelvis. In South Africa, traditionally the fetal head is 'pushed' up from the vagina by an assistant. More recently, a report suggests that the deeply impacted fetal head can be delivered more safely by using the reverse breech delivery technique (the pull method) 70. Furthermore, Singh and Varma 71 describe a device that, when applied vaginally to the fetal head after failed instrumental delivery, causes constant pressure to elevate the fetal head, 71 making delivery easier. Delivery of a deeply engaged head is a challenge to the obstetrician and can be done by various methods as Vertex method, pull method i.e. Patwardhan's Method, push method in which head is pushed vaginally and then delivered through the uterine incision. In the current study, most common method of delivery of deeply engaged head was Breech method in 60 cases (60%) followed by vertex method in 14% and Patwardhan method

RESULTS

The study can be summarized as under

- The mean maternal age at presentation was 24.66 (\pm 3.42) years with the range from 17 to 35 years
- Maximum number of cases were seen between the age group of 20-25 years (58; 58 %), followed by 25-30 years (28; 28%)
- Out of 100 pregnancies, 74 were primigravida and 26 were multigravida pregnancies
- The gestational age was between 37-39 weeks in 94 deliveries and only 6 deliveries were above 40 weeks.
- The mean gestational age was 37.94 \pm 1.03 weeks.
- Majority of patients belonged to Low Socioeconomic group (64; 64%), followed by Middle Socioeconomic group (34; 34%)
- Labor was induced in 65% of patients, while the rest 35 % had spontaneous onset of labour
- Most common method of delivery of deeply engaged head was Breech method in 60 cases
- Arrest of descent and foetal distress were the most common indications for caesarean section in second stage of labour accounting for 55 % and 25 % respectively. Persistent occipito-posterior position accounts for 19 %, followed by Deep transverse arrest in 14 % and Failed instrumentation in 7% of cases
- Women who had a second-stage caesarean section were characterized by the rate of estimated blood loss >1000 ml in 10 % of cases. The women were also more prone to unintentional uterine incision extension and uterine atony in 20 % and 5 % of case respectively.
- As for maternal postoperative complications, in second-stage caesarean section, the rate of hemoglobin decrease >2 g/l was seen in 48%, and the rate of antibiotic treatment for suspected endometritis in 9% of cases
- The Mean (\pm SD) of hospital stay was 5.41 (\pm 2.32) days
- A secondary analysis showed 10 failed vacuum attempts in the study group which accounted for 10% of all second-stage caesarean section
- Three (3 %) babies were admitted to the Neonatal Intensive Care Unit and 15% to neonatal nursery for management of respiratory distress, sepsis, jaundice, and observation.

Conclusion

Caesarean section in the second stage of labor is a challenging operation with distortion of pelvic anatomy and a fetal head that is often deeply impacted in the maternal pelvis. So, proper fetal and pelvic assessment should be done to assess the potential impact of the fetus on the characteristics of the labor and every attempt should be made to avoid second stage caesarean section, if possible. When faced with difficult decisions relating to the management, a second opinion from a senior obstetrician should be sought. If second stage caesarean section is unavoidable, a multidisciplinary approach should be followed involving a senior anaesthetist, a senior obstetrician and a neonatologist

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