

Study of Primary Caesarean Section in Multigravida Patients at SKMCH, Muzaffarpur, Bihar

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Abstract

Background: The most often performed major surgery on women is a caesarean section. The purpose of this study was to determine the prevalence of primary Caesarean sections in multigravidas, their reasons and the outcomes for both the mother and the foetus in these patients.

Methods: It was a six-month prospective study of primary caesarean sections performed on multigravida patients admitted to the obstetrics and gynaecology department of the SKMCH in Muzaffarpur, Bihar, between March 2022 and August 2022. Multigravida with a pregnancy of more than 28 weeks gestation (gravida 2 and above) and who had all previously delivered vaginally at least once at a gestation of more than 20 weeks were included. Women having prior abortions, prior sections and pregnancies accompanied by medical conditions were excluded.

Results: A total of 8185 deliveries took place throughout the course of the study's 6 month duration, of which 3061 (37.39%) required a caesarean section and 386 (12.61%) were multigravida primary caesarean sections. The majority (77.72%) of these multigravida individuals who underwent primary caesarean sections were unbooked. The majority of cases (61.13%) were admitted directly to the hospital. The majority of the patients (55.95%) were in the 25–30 age range. 69.44 percent of the patients could read and write. The majority of patients (49.72%) had Gravida 2. 95.85% of them (or all of them) had emergency caesarean sections. Malpresentation 115 (29.79%), Fetal distress 71 (18.39%), APH 71 (18.39%), Obstructed labour 33 (8.55%), Severe preeclampsia and Antepartum eclampsia 39 (10.1%) and Twin pregnancy 21 (5.44%) were the most frequent reasons for emergency LSCS in multigravida patients. Pyrexia was the most typical maternal morbidity at 40 (10.36%). Postoperative morbidity ranged from 21.24% for unbooked patients to 14.25% for referred patients to 23.58% for emergency patients, 12.43% for patients with poor socioeconomic level, and 3.88% for those with moderate to severe anaemia. 6.21% of infants were found to have birth asphyxia. The infant mortality rate was 2.33%. More newborn deaths (90.47%) occur in unbooked cases.

Conclusions: Women who previously underwent a typical vaginal delivery can experience numerous unanticipated difficulties. It is advised that all prenatal patients schedule appointments and receive appropriate antenatal care on a regular basis. In order to lower maternal and perinatal morbidity and mortality, all deliveries in multigravida should take place in a hospital.

Keywords: Multigravida, Maternal outcome, Neonatal outcome, Primary caesarean section

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Introduction

The most frequent major operation for women nowadays is a caesarean section, which in some circumstances can save the mother, the baby, or both of them. Caesarean deliveries are now safer thanks to advances in anaesthesia and surgery, accessibility to broad-spectrum antibiotics, blood and blood products, and increasing understanding of the importance of making an informed decision about having a caesarean section. This is not to say that they are now safer than typical, straightforward vaginal deliveries, but rather that they are now safer than they were before [1].

A further study linked the increase in caesarean sections to a shift in medical practice and came to the conclusion that while the general threshold for performing a caesarean section has decreased even though the indications have not changed much over time [1-4]

The variances in caesarean section rates are caused by a variety of variables, including practice culture, practice style, hospital environment, source of funding, patient preference, and socioeconomic level. Caesarean section rates can be decreased by a clinical practice recommendation without worsening the results (Suwanrath-Kengpol C 2004) [5]. Caesarean delivery rates that are high or on the rise may not necessarily indicate a demand for surgical delivery [6].

Multipara refers to individuals who have made deliveries once or more after the viability age. Multipara (para 2, 3, and 4), and grand multipara are all included (para more than 4) [7]. Primary caesarean section in a multipara refers to the initial caesarean section performed on patients who had at least one vaginal delivery. In multipara, the placenta and the foetus are primarily to blame for caesarean sections.

Despite having delivered a full-term child vaginally before, multipara may still have cephalopelvic disproportion. The size of the foetus and foetal head should be carefully measured because the foetus grows larger with increasing parity. A pendulous abdomen and lumbar spine lordosis favour malpresentations in multiparous individuals and in any event, it is typical for the head to not engage with the pelvis until labour begins [8].

The issue of multiracial populations is exacerbated by factors including poverty, illiteracy, misinformation, and a lack of familiarity with antenatal care and family planning options. The safe delivery of a multipara who had previously given birth vaginally may nonetheless necessitate a caesarean procedure [1].

The general public has the opinion that after a mother gives birth to her first baby or children normally, all of her following deliveries will also be normal. As a result, these multiparous mothers frequently skip their regular antenatal appointments [8]. These factors are the main drivers behind the focus on the indication for caesarean section in women who had previously given birth vaginally [9].

Caesarean sections are indicated by a number of factors including severe pelvic contraction, different types of dystocia, malpresentation, a significant degree of placenta previa and severe preeclampsia and eclampsia [10,11]. Fetal distress and a poor obstetric history (BOH) are among the additional indicators. However, there has been an alarming rise in the caesarean section rate around the world due to a variety of socioeconomic, ethical, and medicolegal concerns that go beyond just obstetrics and medical factors [12].

The current study was conducted to examine the indications for and results of

performing a caesarean section on a multigravida who had previously successfully delivered by vaginal delivery.

Material and Methods

All multigravida cases of primary caesarean sections admitted to the department of obstetrics and gynaecology at the Sri Krishna Medical College and Hospital in Muzaffarpur, Bihar over the six-month period from March 2022 to August 2022 were the subject of this prospective study.

Study subjects included pregnant women with a history of vaginal births.

All Multigravida with pregnancies of >28 weeks gestation (gravida 2 and above) and each of them had previously experienced a vaginal delivery of >20 weeks gestation met the inclusion criteria.

The study excluded women who had previously had abortions, caesarean sections, and pregnancies with medical conditions.

A predesigned proforma was used to gather data on the patient's demographics, obstetric history, physical examination, indications of a caesarean section, and maternal and perinatal outcomes.

Statistical Analysis

In order to identify independent risk factors, categorical variables were compared using the chi-squared test. The cutoff point for statistical significance was $P < 0.05$. Software SPSS 17.0 (SPSS, Chicago, IL, USA) was employed.

Results

The following observations were made after 386 (12.61%) patients in total were chosen for the study. There were 8185 deliveries overall during the study's six-month duration. Patients who numbered 3061 (37.39%) underwent Caesarean sections.

Only 150 (38.86%) of the 386 total patients were recommended from different sources; the majority of the remaining patients (77.72%) were direct admission (61.13%) patients.

The majority of the patients, 216 (54.95%), are between the ages of 26 and 30, followed by 123 (31.86%) patients between the ages of 21 and 25, and 41 (10.62%) patients between the ages of 31 and 35. Only 5 individuals (1.29%) had an age greater than 35.

229 patients (59.33%) had gestational ages between 37 and 40 weeks, 111 patients (28.76%) were between 32 and 36 weeks, 12 patients (3.10%) were between 28 and 31 weeks, and 8 patients (2.07%) had gestational ages of >40 weeks.

The distribution of patients by educational level revealed that primary education made up the majority of their backgrounds (46.37%). Only 5 (1.29%) of the patients had a degree, while 84 (21.76%) had only a secondary education and over 118 (30.56%) were illiterate. This also reflects the recent rise in literacy rates.

According to the modified Kuppuswamy Scale, the majority of patients (54.1%) belonged to the upper lower class, followed by 139 (36%) patients from the lower class, 37 (9.6%) patients from the lower middle class, and just one (0.30%) patient from the upper middle class.

The kind of work distribution shows that the majority of patients were moderate workers (298; 77.20%), heavy workers (80; 20.72%), and only sedentary workers (8; 2.07%). Only 34% of the female patients had normal haemoglobin levels, although the majority (73.5%) had normal BMIs, according to Table 1's analysis of the patients' nutritional status. Only 16 (4.15%) of the 386 patients underwent elective surgery; instead, 370 (95.85%) required emergency caesarean sections.

Table 1: Nutritional status of study subjects

Parameters	No. of cases	Percentage
Anemia		
Normal Hb	130	33.68
Mild	215	55.70
Moderate	31	8.03
Severe	8	2.07
Very severe	2	0.52
BMI		
Underweight	74	19.17
Normal	284	73.57
Overweight	26	6.74
Obesity	2	0.52

The most frequent reason for a caesarean section in the current study (Table 2) was malpresentation, which affected 115 (29.79%) patients. This was followed by foetal distress in 71 (18.39%) patients, APH in 71 (18.39%) patients, preeclampsia and eclampsia in 39 (10.1%) patients, obstructed labour in 33 (8.55%) patients, cephalopelvic disproportion in each case, and twin.

Table 2: Indications of primary caesarean section in multigravida

Indication	No. of cases	Percentage
1. Malpresentations	115	29.79%
a. Breech	63	16.32%
b. Face	4	1.03%
c. Brow	3	0.78%
d. Compound presentation	3	0.78%
e. Cord presentation	1	0.26%
f. Cord prolapsed	4	1.03%
g. Transverse lie	36	9.32%
h. Oblique lie	1	0.26%
2. Cephalopelvic disproportion	36	9.32%
3. Antepartum hemorrhage	71	18.39%
a. Placenta previa	65	16.84%
b. Abruptio placentae	6	1.55%
4. Fetal distress	71	18.39%
5. Obstructed labour	33	8.55%
6. Severe preeclampsia and antepartum eclampsia	39	10.1%
7. Twin pregnancy	21	100.0%
Total	386	

Table 3: Maternal outcome

Maternal outcome	No. of cases	Percentage
Healthy	295	76.42%
Postoperative morbidity	91	23.57%
Abdominal distention	6	1.55%
Pyrexia	40	10.36%
URTI	32	8.29%
Wound infection	11	2.85%
PPH	2	0.52%
Total	386	100%

Only 86 (22.28%) of the 386 patients received blood transfusions. Table 3's analysis of the maternal outcome reveals that 91 (23.57%) of the 386 patients had various problems. Pyrexia was the most frequent maternal complication, occurring in 40 patients (10.36%), followed by upper respiratory tract infection in 32 patients (8.29%), wound infection in 11 patients (2.85%), and abdominal distention in six patients (1.55%). The majority of patients with postoperative morbidity were unbooked (21.24%), referred (14.25%), had emergency surgery (23.58%), had low socioeconomic status (12.43%), had moderate to severe anaemia (3.88%), were underweight (9.58%), or overweight (2.59%), had low level of education (11.13%), and were moderate to heavy workers.

A weight analysis of the newborns reveals that 32.5% were in the 1.5-2.5 kg range, while the other half were between 2.5 and 3.0 kg. 40 newborns were over 3 kg, while just 9 (2.33%) were under 1.5 kg. 19 IUDs were present.

Table 4: Correlation of post operative maternal morbidity with various risk factors

Parameters	Healthy	%	Post-op morbidity	%	p-value
Booking status					
• Unbooked	218	56.47%	82	21.24%	0.001
• Booked	77	19.95%	9	2.33%	
Direct/Referred					
• Direct	200	51.81%	36	9.33%	<0.001
• Referred	95	24.61%	55	14.25%	
Emergency/Elective					
• Emergency	279	72.28%	91	23.58%	0.023
• Elective	16	4.15%	0	0	
Socioeconomic status					
• Lower	91	23.57%	48	12.43%	0.0001
• Upper lower	171	44.04%	38	9.84%	
• Lower middle	32	8.29%	5	1.29%	
• Upper middle	1	0.26%	0	0	
Nutritional status					
Anemia					
• Normal Hb	106	27.46%	21	5.44%	<0.024
• Mild	160	41.45%	55	14.25%	
• Moderate	18	4.66%	11	2.85%	
• Severe	6	1.55%	4	1.03%	
BMI					
• Underweight	37	9.58%	37	9.58%	<0.001
• Normal	242	62.69%	42	10.88%	
• Overweight	16	4.15%	10	2.59%	
• Obese	0	0	2	0.52%	
Educational status					
• Uneducated	75	19.43%	43	11.13%	<0.001
• Primary	139	36.01%	40	10.36%	
• Secondary	76	19.68%	8	2.07%	
• Graduate	5	1.29%	0	0	
Type of work					
• Sedentary	7	1.81%	1	0.25%	0.45
• Moderate	228	59.06%	70	18.13%	
• Heavy	60	15.54%	20	5.18%	

In neonates, birth asphyxia was the most frequent morbidity (Table 5), followed by RDS in 22 newborns (5.69%), sepsis and pyrexia in 13 neonates (3.36%), and MAS in 11 neonates (2.84%).

Table 5: Neonatal morbidity

Morbidity	No. of cases	Percentage
Healthy Neonates	295	76.42%
Neonates with some morbidity	72	18.65%
Birth Asphyxia	24	6.21%
Sepsis and Pyrexia	13	3.36%
MAS	11	2.84%
RDS	22	5.69%
CHD	1	0.26%
Conjoint twin	1	0.26%

Birth Asphyxia was the leading cause of death in 9 (42.85%) cases, followed by RDS in 6 (28.57%), sepsis and pyrexia in 2 (9.52%), MAS in 2 (9.52%), and CHD in 1 (4.76%).

Placenta previa (most newborns were premature), obstructed labour, and transverse lying with cord prolapse were frequent causes of caesarean sections that resulted in neonatal mortality.

Discussion

There were 8185 deliveries overall throughout the study's six-month period, and there were 3061 caesarean sections performed as a result, with a caesarean section rate of 37.39%. (table 1). In their investigation, Himabindu P *et al.* discovered a comparable caesarean section rate of 40% [14]. Our facility has a high rate of caesarian sections since Sri Krishna Medical College and Hospital is a tertiary referral facility with a large catchment region. 1077 caesarean sections out of 3061 were performed on primigravida women (35.18%) and 386 (12.61%) on multigravida women. 1598 (52.20%) patients underwent a second caesarean section (Table 2).

300 patients out of the 386 trial participants (77.72%) were unscheduled. This fact demonstrates a low rate of patient antenatal booking in India, especially in North Bihar. This can be a result of the poor literacy rate among women and the

general lack of knowledge about the value of prenatal care. Our findings align with those of the studies conducted by Desai E *et al* (72.09%) and Himabindu P *et al* (71%) [1,13,14].

Only 150 patients (38.86%) of the total 386 patients were referred to the hospital from other locations (Table 4). The results show that there are fewer deliveries occurring in hospitals in North Bihar. The majority of instances were direct admissions, and patients only visited the hospital when difficulties developed. Desai E. *et al.* reported almost identical findings, finding that the cases that were received directly as opposed to being referred were more prevalent (48.84%) [1].

The majority of patients (216 out of 386) are between the ages of 26 and 30 (54.95%) and 21 to 25 (31.86%), respectively (Table 5). This is due to the fact that the legal age of marriage in India for girls is 18 years old. In their study, Sethi P *et al.* also found that 41% of women having primary caesarean sections were between the ages of 25 and 29. Similar findings were also reported by Unnikrishnan B *et al.* [15].

The distribution of patients by parity reveals that Gravida-2 patients made up the majority of the population (49.73%), followed by Gravida-3 patients (32.12). It illustrates how, in recent years, families have shrunk from 5–6 children per

marriage to just 2-3 children per couple. In recent years, grand multiparity has dramatically decreased. Similar findings were also reported by Sethi P *et al.*: 35% of women had Gravida-2 parity and 30% had Gravida-3 parity [2].

The majority of patients (59.33%) had gestational periods between 37 and 40 weeks, followed by periods between 32 and 36 weeks (28.76%). Rowaily MA *et al.* discovered that the majority of patients (78.8%) belonged to gestational ages of 37-42 weeks, followed by 18.2% patients in gestational ages of 37 weeks; the findings are equivalent to those of the current study [16].

The majority of patients (46.37%) had just an elementary education, and 30.56% were illiterate, according to the distribution of patients based on their educational standing. Better educational status is shown in the study by Ajeet S. *et al.* [17].

The upper lower class accounts for the majority of patients (54.1%), followed by the lower class (36%). This is due to the fact that 31.65% of people in North Bihar still live in poverty. According to Ajeet S *et al.*, the majority of the 247 patients in their study came from the class III socioeconomic group (41.3%) [17].

Out of a total of 386 patients, 215 (55.70%) had mild anaemia, 31 (8.03%) had moderate anaemia, 8 (2.07%) had severe anaemia, and 2 (0.52%) had very severe anaemia. In India, >80% of prenatal patients had anaemia, according to reports.

Only 16 (4.15%) of the patients underwent elective caesarean sections, whereas the majority (95.85%) suffered emergency caesarean sections. In a study with 100 patients, Sethi P. *et al.* found that 91% of operations were emergency-related and only 9% were elective [2].

Malpresentations were the most frequent cause of caesarean sections in the current study, accounting for 115 (29.79%) of all cases, followed by foetal distress (71, 18.39%), APH (71, 18.39%), severe

preeclampsia and eclampsia (39, 10.1%), obstructed labour (33, 8.55%), cephalopelvic disproportion (33, 8.51%), and twin pregnancies (21, In their study [3], Rao JH *et al.* also noted abnormal presentations (32.5%), APH (19.5%), foetal distress (17%), and labour obstruction (18.5%). Fetal distress (25.58%), APH (22.09%), CPD (19.77%), and atypical presentations (17.44%) were similarly listed by Desai E *et al.* as the most frequent causes of caesarean sections in their study [1]. In their study, Himabindu P *et al.* also revealed that foetal distress (24.7%) was the most frequent abnormal presentation for which a Caesarean section was performed. They also demonstrated that breech presentation was the most prevalent abnormal presentation [14].

87 (22.54%) of the 386 patients had blood transfusions. According to a study by Rouse DJ *et al.*, only 3.2% of women who had a primary caesarean needed blood transfusions [18]. The fact that India has a very high frequency of anaemia among pregnant women (>80%) may account for the higher number of transfusion needs.

91 (23.57%) of the 386 individuals suffered various problems. The most frequent maternal consequence was pyrexia, which affected 40 patients (10.36%), was followed by URTI in 32 patients (8.29%), wound infection in 11 patients (2.85%), and abdominal distention in six individuals (1.55%). Similar findings were presented in Rao JH's study [3]. There was no maternal mortality noted in the current investigation. This might be due to the accessibility of improved antibiotics, blood and blood product transfusion facilities, safe anaesthetic techniques, prompt intervention, better surgical techniques, and obstetricians with operative experience [2].

In unbooked patients, referred patients, emergency LSCS, low socioeconomic status, anaemia, obesity, and lower level of education, postoperative morbidity was statistically substantially higher.

According to level of exercise, there was no statistically significant difference between the various groups.

In 58.29% of instances, newborns weighed 2.5 to 3.5 kg, while 34.97% were under 2.5 kg and only 7 (181%) were beyond 3.5 kg. In their study of 4307 patients, Rowaily MA *et al.* found that the majority of newborns (61.7%) had weights between 2500 and 3500 grams, which is regarded to be a normal body weight, while 21.6% had weights greater than 3500 grams. Lower baby weight in our study may be a result of subpar prenatal care and nutrition for the mother [16].

Birth asphyxia was the most prevalent morbidity in neonates, occurring in 24 (6.21%), followed by RDS in 22 (5.69%), sepsis and pyrexia in 13 (3.36%), and MAS in 11 (2.84%) individuals. In his analysis of prenatal morbidity, Sethi P noted that respiratory distress syndrome (RDS) affected 3% of patients, meconium aspiration syndrome (MAS) affected 3%, sepsis and pyrexia affected 4%, and birth asphyxia affected 4% of patients. Results from both studies are comparable [2].

Birth asphyxia was the leading cause of death in 9 (42.85%) patients, followed by RDS in 6 (28.57%) individuals, sepsis, and pyrexia in 2 (9.52%) patients. In the current study, perinatal death occurred at a rate of 5.44%. Omar AA *et al.* also noted a significant rate of perinatal mortality among caesarean deliveries (11.1%) with severe birth hypoxia being the primary cause of death [6].

Neonatal mortality is higher in unbooked cases (90.47%) due to inadequate prenatal care, inadequate nourishment for the mother, unattended medical issues, maternal morbidities, and protracted home trials. They all had emergency Caesarean sections even though they weren't scheduled. Out of all newborn deaths, 57.14% were referred cases, and none occurred in neonates with birth weights greater than 2.5 kg. The majority of neonates, 13 (61.9%), were under 1.5 kg at

birth. Placenta previa (most newborns were premature), obstructed labour, and transverse lying with cord prolapse were common causes of caesarean sections that resulted in neonatal mortality.

It has been stressed again from the discussion above that multigravida women are more frequently ignored and pay more attention to their families. When a woman gives birth vaginally during her first or second pregnancy, her family and she herself become less willing and attentive to routine antenatal checkups, which increases the risk of anaemia, poor nutrition, and placenta previa. Additionally, despite the fact that she gave birth normally, her family is afraid to have her in a hospital. In addition, the majority of patients have their babies at home with an unskilled individual, and they only seek medical attention when many complications become visible.

Conclusion

It has been emphasised again from the discussion above that women in India need to be given more power through better education in order for them to be aware of the potential complications that could arise during pregnancy and delivery. In order to prevent these complications, regular antenatal checkups, early diagnosis of pregnancy and its high risk factors, and their management are required. In our country where about 70% of population lives in rural areas, role of ASHA workers, Anganwadi or ANM services are very crucial to achieve the goal of 100% institutional deliveries. This will further help us to achieve the sustainable development goals of reducing global maternal mortality ratio to less than 70 per 1,00,000 live births and to reduce neonatal mortality to at least as low as 12 per 1,000 live births.

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