

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

Subhasini¹, Sayeeda Parveen², Chanchal³

¹Senior Resident, Department of Obstetrics and Gynaecology, Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar.

²Senior Resident, Department of Obstetrics and Gynaecology, Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar.

³Associate Professor, Department of Obstetrics and Gynaecology, Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar.

Received: 30-09-2022 / Revised: 29-10-2022 / Accepted: 17-11-2022

Corresponding author: Dr Sayeeda Parveen

Conflict of interest: Nil

Abstract

Background: One of the most often done major surgical operations worldwide is a caesarean section. Primary caesarean section in multigravida refers to the initial caesarean section performed on a patient who has had one or more vaginal deliveries of viable newborns in the past. The purpose of this study is to examine the prevalence and causes of primary caesarean sections in multigravida, as well as the outcomes for the mother and the baby after the procedure.

Methods: The department of Obstetrics and Gynecology at SKMCH, Muzaffarpur, Bihar, conducted a prospective study on 95 cases of primary caesarean sections among multigravida who had a prior normal vaginal delivery for a period of 7 months from March 2022 to September 2022. Maternal and neonatal outcomes were examined while different caesarean section reasons were examined.

Results: In 6.34 percent of all deliveries, a primary caesarean section was performed. The bulk of the instances were unbooked and in the second or third trimester of pregnancy. Foetal discomfort was the most frequent reason for a primary caesarean section (29.5%), followed by cephalopelvic disproportion and malpresentations.

Conclusion: If a pregnant woman who has previously given birth vaginally experiences any of the several unanticipated difficulties listed above, an emergency caesarean section may be necessary. They can have a better maternal and perinatal outcome if they are carefully assessed during the prenatal and intranatal periods.

Keywords: Primary Caesarean Section, Indications, Perinatal Outcome

This is an Open Access article that uses a fund-ing model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

With an estimated 18.5 million cases performed each year, caesarean sections are among the most frequently performed major surgical procedures in the world [1,2]. In 1985, the World Health Organization said

that national rates of caesarean delivery between 10% and 15% were considered optimal [3]. but today, rates have surpassed 30% in many hospitals and health regions [4]. Numerous factors, including better anaesthetic techniques, better antibiotics, the

availability of blood transfusions, thromboprophylaxis, the unwillingness to accept even minor increases in risk associated with some types of operative vaginal delivery, and social and medicolegal expectations of a perfect neonatal outcome, have improved the safety of caesarean sections and increased the indications for their performance over time. These factors have undoubtedly influenced obstetric care. One who has had one or more previous healthy deliveries is known as a multipara. All women who have had four or more previous healthy babies are said to be grand multiparous. The phrase "Dangerous Multipara" was first used by Solomon in his study in 1934 [5]. According to George *et al.*, the multigravida has a high risk due to the numerous stresses that succeeding pregnancies place on the mother's organ systems and the lingering pathology that is brought on by the prior disease [6]. Multipara are thought to have a higher chance of developing anaemia, malpresentations, haemorrhage, cephalopelvic disproportions, uterine rupture, and consequences from long-term medical conditions such as diabetes and hypertension. Multiparous women who have had past uneventful vaginal deliveries have a false sense of security, yet some of them may require a caesarean section due to the related risk factors.

In multigravida, we intended to investigate the prevalence, determine the principal caesarean section indications, and assess the outcomes for both the mother and the baby after the procedure.

Material and Methods

The department of Obstetrics and Gynecology at Sri Krishna Medical College and Hospital conducted a prospective study on 95 cases of primary caesarean sections among multigravida who had a prior vaginal delivery (28 weeks of gestation and above) from March 2022 to September 2022.

All study participants provided their informed consent before beginning the trial. The study comprised multigravida who had previously delivered a viable baby vaginally and were pregnant with a child who was >37 weeks gestational age (gravida 2 and above). The study excluded patients with gestational ages <37 weeks, prior caesarean sections, or multiple pregnancies.

At admission, demographic information, previous and present obstetric history, and prior medical history were documented. A thorough general, obstetric, and pelvic assessment were performed. To determine the precise gestational age, foetal weight, placental position, and amniotic fluid index, basic examinations and sonography were carried out.

Cardiotocography and partograms were used to monitor labour. Based on the progress of labour, the state of the mother and the foetus, the decision to perform a caesarean section was made. Neonatal outcome, intrapartum problems, and postpartum complications were gathered.

Results

There were 1498 deliveries overall throughout the study period, of which 683 (45.59%) required a lower segment caesarean section. (Table 1). In multigravida, the primary caesarean section rate was 6.34% of all deliveries, and it was 13.9% of all caesarean sections. 95 multi-gravida instances were examined, of which 31% were booked cases and 69% were not (Table 2). The majority of them (43%), followed by the 20 to 24 year age range (30.5%), were between the ages of 25 and 29. (Table 3).

The majority of them (80%) were gravida 2, whereas 13.7% were gravida 3. (Table 4). Emergency LSCS was performed in 83 cases and Elective LSCS in 12 cases (Table 6). Pre-eclampsia was found in 9.5% of cases and gestational diabetes in 11.6% of cases (Table 5). Fetal distress was the first sign in 29.5%

of instances, then cephalopelvic disproportion in 17% of cases, and malpresentation in 10.5% of cases (Table 7). 15.8% of cases had intraoperative problems, while puerperal pyrexia was the most frequent post-operative consequence (Table 8, 9). The majority of babies delivered had

birth weights between 3 and 3.5 kg (Table 10). 74 infants were delivered with an average Apgar score of >7 (77.9%). 20 infants were admitted to the NICU, and the most prevalent reason (7.37%) was meconium aspiration. One stillbirth occurred as a result of grade 3 placental rupturing.

Table 1: Incidence of Caesarean Sections in 7 months

| Type of Delivery | No. of Cases | Percentage |
|-----------------------------------|--------------|------------|
| LSCS | 683 | 45.59% |
| Total deliveries (LSCS + Vaginal) | 1498 | 100% |

Table 2: Booking Status of the Study Population

| Booking Status | No. of Cases | Percentage |
|----------------|--------------|------------|
| Booked | 30 | 31% |
| Unbooked | 65 | 69% |
| Total | 95 | 100% |

Table 3: Age Distribution of the Cases

| Age in Years | No. of Cases | Percentage |
|--------------|--------------|------------|
| 20 to 24 | 29 | 30.52% |
| 25 to 29 | 41 | 43.16% |
| 30 to 34 | 22 | 23.16% |
| 35 and above | 3 | 3.16% |
| Total | 95 | 100% |

Table 4: Gravida Distribution

| Multigravida | No. of Patients | Percentage |
|--------------|-----------------|------------|
| G2 | 76 | 80.0% |
| G3 | 13 | 13.7% |
| G4 | 5 | 5.3% |
| G5 | 1 | 1.0% |
| Total | 95 | 100.0% |

Table 5: Risk Factors Associated with the Study Population

| Risk Factors | Number of Cases | Percentage |
|-----------------------|-----------------|------------|
| Post dates | 9 | 9.5% |
| Bad Obstetric history | 21 | 22.1% |
| Gestational Diabetes | 11 | 11.6% |
| Pre-eclampsia | 9 | 9.5% |
| Rh Negative | 2 | 2.1% |
| Epilepsy | 1 | 1.1% |
| Anaemia | 9 | 9.5% |

Table 6: Timing of Caesarean Section

| Timing of LSCS | No. of Cases | Percentage |
|----------------|--------------|------------|
| Elective LSCS | 12 | 12.63% |
| Emergency LSCS | 3 | 87.37% |
| Total | 95 | 100.0% |

Table 7: Indications for Primary Caesarean Section in Multigravida

| Indication | Frequency | Percentage |
|------------------------------|-----------|------------|
| Malpresentation | 10 | 10.5% |
| Transverse lie | 1 | 1.0% |
| Cephalo pelvic disproportion | 16 | 16.8% |
| Failed induction | 8 | 8.4% |
| Prolonged PROM | 7 | 7.4% |
| Obstructed labour | 4 | 4.2% |
| Placenta previa | 3 | 3.2% |
| Placental Abruptio | 2 | 2.1% |
| Severe Oligohydramnios | 9 | 9.5% |
| IUGR | 2 | 2.1% |
| Abnormal Doppler | 5 | 5.3% |
| Fetal distress | 28 | 29.5% |
| Total | 95 | 100% |

Table 8: Maternal Morbidity

| Intraoperative Complications | Frequency | % |
|------------------------------|-----------|--------|
| Atonic PPH | 11 | 11.57% |
| Traumatic PPH | 4 | 4.21% |
| Blood transfusion | 6 | 6.31% |

Table 9: Maternal Morbidity

| Post-Operative Complications | Frequency | % |
|------------------------------|-----------|--------|
| Puerperal pyrexia | 22 | 23.10% |
| Wound infection | 5 | 5.26% |
| Respiratory tract infection | 9 | 9.47% |
| Urinary tract infection | 8 | 8.42% |
| Secondary suturing | 1 | 1.05% |

Table 10: Birth Weight in Kilograms

| Birth Weight (kg) | No. of Cases |
|-------------------|--------------|
| <2 | 1 |
| 2 to 2.5 | 9 |
| 2.5 to 3 | 24 |
| 3 to 3.5 | 36 |
| 3.5 to 4 | 21 |
| >4 | 4 |

Table 11: NICU Admissions (20)

| NICU Admissions | Frequency | Percentage |
|--------------------------|-----------|------------|
| Meconium aspiration | 7 | 7.37% |
| Birth asphyxia | 4 | 4.2% |
| Neonatal sepsis | 2 | 2.1% |
| Neonatal hypoglycaemia | 4 | 4.2% |
| Fetal growth restriction | 3 | 3.2% |

Discussion

In the current study, there were 1498 deliveries overall, of which 683 (or 45%) were delivered via caesarean section. Due to late referrals of high-risk cases to our hospital and the use of electronic foetal monitoring, there is a high caesarean section rate. Even if the multipara has previously given birth vaginally, a safe delivery by abdominal delivery may still be necessary. The 95 cases of primary caesarean sections in multigravida included in the current study represent a 6.3% incidence of all deliveries.

Despite the low prevalence, multigravida's false sense of security makes labour last longer and makes it harder to detect foetopelvic disproportion, which increases maternal and perinatal morbidity.

Incidence of caesarean section is high in our study (45%) and is comparable to the study by Himabindhu *et al* [7]. Incidence of primary caesarean section in multigravida is comparable to the studies of Jyothi H. Rao *et al* and G. Sharmila *et al* [8,9]. The percentage of Booked and Unbooked cases in the present study was 31% and 69% respectively and is comparable to the studies by Himabindhu *et al* (Booked 29%, Unbooked 71%) and Sharmila *et al* (Booked 31% and Unbooked 69%). The higher caesarean incidence in our study is caused by a greater number of unbooked cases, inadequate antenatal care they received, and related risk factors. This also explains why our study (87%) had a higher percentage of emergency caesarean sections than the other 3 trials combined. Foetal discomfort (29.5%) was the most frequent reason for a caesarean delivery in

multigravida, and it was the most frequent reason in other studies as well.^{7,8} Pathological foetal heart rate tracings and the presence of meconium-stained fluid both indicated the presence of foetal discomfort. The rationale for the somewhat greater frequency of foetal discomfort compared to other research is the frequent usage of cardiotocogram.

Cephalopelvic disproportion, which occurred in 16% of the cases and was equivalent to the other studies' findings, was the second most frequent indication [8,9]. Cephalopelvic disproportion in a multipara can be more substantial and harmful than in primi because of the delay in identification, according to Duckman *et al* [10]. According to Klein, a primigravida should undergo the same investigation for cephalo-pelvic disproportion as a multipara in early labour with an unengaged foetal head. Putting off the diagnosis of this cephalopelvic disproportion results in a lengthier labour, increased caput formation, and excessive moulding [11].

The occurrence of cephalopelvic disproportion in our study can be explained by the fact that 26% of the babies delivered had birth weights over 3.5 kg. In 10 cases, misrepresentations were the cause. In nine cases, the presentation was from the bottom, and in one, from the top. One instance involved a transverse lie. In multiparous women, the pendulous abdomen and lordosis of the lumbar spine favour malpresentations. Poor obstetric history was observed in 22% of research participants, as well as gestational

diabetes in 11.5%, anaemia in 9.4%, and severe pre-eclampsia in 9.47%.

In 31.6% of all cases, there were medical issues. Compared to vaginal delivery, abdominal delivery carries a higher risk of maternal morbidity and mortality. According to reports, there are between 12 and 15 percent of intraoperative complications overall, with emergency caesarean sections having a far higher prevalence than elective ones [12,13].

In 11 cases, there were intraoperative problems like atonic PPH. It was seen in patients with antepartum haemorrhage and in cases of unscheduled emergency caesareans performed in the second stage of labour. In two cases, uterine artery ligation was necessary. Oxytocics were used to control all other cases. In 4 cases of obstructed labour, traumatic PPH caused by uterine angle extension was seen. Six instances required blood transfusions. In our series, there was no maternal fatality, which may have been prevented by the availability of effective antibiotics, facilities for blood transfusions, prompt intervention, secure anaesthesia, and improved surgical methods. Fever was the most frequent post-operative complication in 22 cases. For the majority of patients, extended PROM and labour were to blame. In five cases, there was a wound infection. One patient needed the incision to be sutured. Antibiotics were used to treat puerperal pyrexia and wound infections in all cases.

Caesarean section problems that occur in roughly 6.4% of instances include wound, urinary, and endometrial infections [14]. Puerperal sepsis is less common when antibiotics are used as preventative measures after caesarean sections [15]. The majority of babies were born with normal Apgar scores >7 (78%), indicating a positive perinatal outcome. Out of 95 cases, 20 newborns developed perinatal morbidity and needed to be admitted to the NICU. Aspiration of meconium was the most frequent factor,

accounting for 7.36%. Four babies experienced birth asphyxia, four had neonatal hypoglycemia, three had IUGR, and two had sepsis. One stillbirth occurred as a result of grade 3 placental abruption.

Conclusion

Even if a multiparous woman has previously given birth vaginally, a caesarean surgery may still be necessary to ensure the health of both mother and foetus. In this study, primary caesarean section rates, associated risks, and maternal and perinatal outcomes are presented for multigravid women. Foetal discomfort, cephalopelvic disproportion, and malpresentation were the most typical symptoms. Increased parity is linked to a higher incidence of problems throughout the prenatal, labour, and delivery periods.

In order to prevent maternal and foetal morbidity and death owing to protracted labour, obstructed labour, emergency caesarean section, and septicemia, prenatal booking and routine antenatal visits help identify high risk women with medical and obstetric issues. Therefore, it is crucial that all multigravid women understand the value of antenatal care and that hospital deliveries are required in order to improve mother and foetal outcomes. In addition, the society needs to become more conscious of family planning techniques to prevent the harmful repercussions of high parity.

References

1. Hall MJ, DeFrances CJ, Williams SN, *et al.* National hospital discharge survey: 2007 summary. Natl Health Stat Reports 2010;(29):1-20.
2. Gibbons L, Belizan JM, Lauer JA, *et al.* Inequities in the use of cesarean section deliveries in the world. Am J Obstet Gynecol 2012;206(4): 331.e1-19.
3. Appropriate technology for birth. Lancet 1985;2(8452):436-437.

4. Baskett TF, Calder AA, Arulkumaran S, *et al.* Munro Kerr's operative obstetrics. Edinburgh: Saunders/Elsevier 2014.
5. Solomons B. The dangerous multipara. *Lancet* 1934;224(5784):8-11.
6. George JM, Power HA. An analytical survey of multigravidas. *Am J Obstet Gynecol* 1949;57(5):972-979.
7. Himabindu P, Sundari MT, Sireesha KV, *et al.* Primary caesarean section in multipara. *IOSR Journal of Dental and Medical Sciences* 2015;14(5):22-25.
8. Rao JH, Rampure N. Study of primary caesarean section in multiparous women. *Journal of Evolution of Medical and Dental Sciences* 2013;2(24):4414-4418.
9. Sharmila G, Nishitha C. Study of primary caesarean section in multigravida. *Asian Pac J Health Sci* 2016;3(4):89-94.
10. Duckman S, Chen W, Gungon T, *et al.* Disproportion in multipara, fact or philosophy. *Am J Obstet and Gynecol* 1968;101(7):1001-1005.
11. Klein D, Robbins R, Gabaeff L. Primary cesarean section in multipara. *Am J Obstet and Gynecol.* 1963; 87:242-252.
12. Bergholt T, Stenderup JK, Vedsted-Jakobsen A, *et al.* Intraoperative surgical complication during cesarean section: an observational study of the incidence and risk factors. *Acta Obstet Gynecol Scand* 2003;82(3):251-256.
13. van Ham MA, van Dongen PW, Mulder J. Maternal consequences of caesarean section. A retrospective study of intraoperative and postoperative maternal complications of caesarean section during a 10-year period. *Eur J Obstet Gynecol Reprod Biol* 1997;74(1):1-6.
14. National Institute for Health and Care Excellence. Caesarean Section: Guidance and Guidelines 2011.
15. Smaill F, Hofmeyr GJ. Antibiotic prophylaxis for cesarean section. *Cochrane Database Syst Rev* 2000; (3): CD000933.