



Study the Incidence and Outcome of Primary Caesarean Section in Multigravida

Dr Pravin Kumar¹, Dr Shiv Singh Barala², Dr Rakhi Arya³, Dr Reena Pant⁴, Dr Krishna Priya Banerjee⁵

^{1,2}Resident, ³Assoc Prof, ^{4,5}Senior Professor

Department of Obstetrics & Gynaecology, SMS Medical College, Jaipur

Corresponding Author: Dr Pravin Kumar, Resident, Department of Obstetrics & Gynaecology, SMS Medical College, Jaipur

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Abstract

Background: it is a study of the incidence, indication for caesarean section and fetomaternal outcome of primary caesarean section in multigravida women who had previous vaginal delivery of viable neonates. Aim of Study: To study the incidence, indication and the fetomaternal outcome of primary caesarean section in a multigravida.

Methods: Prospective study, hospital based descriptive type of observational study conducted in department of Obstetrics & Gynaecology, SMS Medical College, Jaipur, India from June 2018 to August 2019 ,1000 multipara women previous delivered vaginally with gestational age >28 weeks with giving written and informed consent were included and excluded previous caesarean section and Labor was monitored by using partograph. Decision for caesarean section was based on clinical evaluation of progress of labor, fetal and maternal condition and complications were noted.

Statistical analysis: Continuous variable was expressed as Mean and Standard deviation. Nominally / Categorized variable was summarized as Proportion.

Parametric and Nonparametric Tests used for continuous and nominal variable as per yield of data.

Result: Among the various indication of caesarean section, malpresentation was commonest. Majority had emergency caesarean section. Majority of women in the age group of 26- 30 years and majority were second gravida. Most common intraoperative complication was atonic PPH (4.73%) and most common postoperative morbidity was secondary PPH (3.79%). There were no maternal mortality in the present study. Neonatal morbidity was 11.84% and neonatal mortality was 2.84%.

Conclusion: Many unforeseen complications occur in women who previously had a normal vaginal delivery. There are many cases where a caesarean section becomes mandatory for her. Good antenatal care, early recognition and timely intervention can improve the maternal and fetal outcome.

Introduction

Primary caesarean section in a multipara means, first caesarean section done in the women who has delivered vaginally once or more viable birth.¹

It is a common belief amongst that, once a mother delivers normally, all her subsequent deliveries will be normal. As a result, such multiparous mother often neglects routine antenatal checkup. The relative ease with which some multiparous are delivered in the presence of faulty positions and presentations may account for the false sense of security. This invites laxity on part of women as well as the inexperienced and junior obstetricians.²

Among the all indications of caesarean section in multigravidas, APH is the most frequent indication for caesarean section since, multiparity increases the risk for abnormal placentation.³

Another major indication is cephalopelvic disproportion (CPD). As per Adams (1957)⁵ advancing parity forward subluxation of the sacrum can occur and with increased inclination of the pelvic brim due to lumbar lordosis and laxity of the joint ligaments. The AP diameter of the pelvic cavity may be reduced. Robinson (1930) stated that repeated pregnancies lead to calcium depletion, subclinical osteomalacia and therefore pelvic deformity.³

Other indications are fetal distress, abnormal presentations, premature rupture of membrane, prolonged labor, cord prolapse, threatened uterine rupture etc.³

With the introduction of modern technology in the labour wards and neonatology units, there is a further rise in rate of caesarean sections. Besides, there have been numerous other obstetrical, medical, social, ethical, economical and medico legal factors which have added to the list of indications leading to alarmingly high rate of caesarean sections all over the world.^{1,4}

Multiparity is a problem associated with poverty, illiteracy, ignorance and lack of knowledge of the

available family planning methods. A multipara who has earlier delivered vaginally may still require a caesarean section for safe delivery.^{1,5}

In a paper entitled “The dangerous multipara” published in 1934, Dr. Bethel Solomons stated “My object in writing this paper and giving it a sensational title is to remove if possible once and for all, from the mind of the reader, the idea that a primigravida means difficult labour, but a multipara means an easy one.”^{1,6}

The World Health Organization recommends that the caesarean section rate should not be higher than 10% to 15%. Studies conducted across India have shown an alarming increase in the rate of caesarean section deliveries.⁷

In the presence of good perinatal care, grand multiparity no longer need to be considered an obstetrical risk in the presence of satisfactory health care conditions.⁸

It is for these reasons; the present study has focused on the caesarean sections in parous women with previous normal vaginal deliveries with respect to incidence, indications, maternal age, parity and the fetomaternal outcome.⁹

Material & methods

Prospective study, hospital based descriptive type of observational study conducted in department of Obstetrics & Gynaecology, SMS Medical College, Jaipur, India over a period of one year and 1000 multipara women previous delivered vaginally were required as sample size.

Inclusion criteria

- Multigravida with pregnancy of >28 weeks gestation, each of whom has had a previous vaginal delivery of viable neonate.
- women giving written and informed consent

Exclusion criteria

- Previous LSCS

Methodology

Detail pelvic assessment was done and Bishop's score noted. Labor was monitored by using partograph. Decision for caesarean section was based on clinical evaluation of progress of labor, fetal and maternal condition.

All intraoperative and postoperative details were noted and complications were managed accordingly. Newborn were examined daily and immunization was done. At the time of discharge, cases without sterilization were advised spacing method and mandatory hospital delivery in next pregnancy.

Statistical analysis

Continuous variable was expressed as Mean and Standard deviation. Nominally / Categorized variable was summarized as Proportion. Parametric and Nonparametric Tests was used for continuous and nominal variable as per yield of data.

Observation

In our study out of 1000 parous women enrolled, 211 underwent caesarean section. Thus, the incidence of primary caesarean section in parous women were 21.1%. It was found that 42.18% women undergoing primary caesarean section in the study were in the age group of 26 – 30 years, which was This being the child bearing age. 42.18% undergoing primary caesarean section belonged to lower middle socio-economic status followed by 30.33% in the upper lower class.

64.45% women were booked and 35.54% were unbooked. It is a referral centre, many women were admitted as unbooked cases. 26 women (12.32%) were referred from other hospitals. In our study, 53.08% had secondary education and only 1.42% were illiterate, majority of women undergoing primary caesarean

section were Hindus (87.20%). According to census 2011, Hindus form 88.48% of population and 58.23% women came from urban areas and 41.77% from rural areas. 71.90% were gravida two and least common were fifth gravida (1.42%). (table1), 68.25% women undergoing primary caesarean section were of gestational age between 36 – 39 weeks 6 days. (table2)

Most common associated disorder was pregnancy induced hypertension, 10.90% women had Pregnancy induced hypertension (PIH), out of which 1.42% women had severe preeclampsia and 1.89% had eclampsia. 3.89% women had anaemia; out of which, 1.89% had severe nutritional anaemia with haemoglobin less than 7 gm/dl, and required blood transfusion. Most common presentation (82.46%) was vertex presentation. (table3)

Most common indication was malpresentations (Breech) accounting for 12.79% followed by meconium stained liquor 10.42%. Other indications were failed induction of labor 9.95%, two loop cord around neck 9.95%, oligohydramnios 9.48%, placenta previa 8.05%, fetal distress 5.68%, abruptio placenta 3.79%, twins 3.11%, non-progress of labor 3.31%, non-reactive CTG 2.84%, utero placental insufficiency 2.84%, breech with oligo 2.84%, cephalopelvic disproportion 2.36%, failed induction with preeclampsia 2.36%, cord prolapse 1.89%, transverse lie 1.89%, eclampsia 1.89%, severe preeclampsia 1.42%, deep transverse arrest 0.94%, IUGR 0.94% and nonreactive CTG with paraplegia 0.47%. Among the antepartum haemorrhage placenta previa accounted for 8.05% and abruptio placentae 3.79%. Multiparity increase risk of malpresentation and abnormal placentation (table4).

67.30% were underwent emergency caesarean section. 4.73% women had atonic PPH and extension of uterine incision occurred in 0.47% women. 11.37% women had

postoperative morbidity, among them secondary PPH was the commonest with incidence of 3.79% and least common was muscle hematoma 0.47% (table5).

218 babies were born, as there were seven cases of twin pregnancy. It was found that, majority (52.29%) babies were in the weight group of 2.5 -3.5 kg. Only 0.91 babies were in weight group of 1-1.5kg (table6).

25 babies (11.84%) had neonatal morbidity and requiring NICU admission. Respiratory distress syndrome was most common with incidence 4.27% and meconium aspiration syndrome & neonatal jaundice were least common (table7).

Total neonatal mortality was 2.84%; commonest cause was septicaemia and meconium aspiration syndrome with incidence of 0.94 % each. Others were respiratory distress syndrome and respiratory distress syndrome with septicaemia with incidence of 0.47% each (table8).

Table 1: Distribution of Cases According to Gravidity

Gravida	No.	%
2	150	71.90
3	39	18.48
4	19	9.00
5	3	1.42

Table2: Distribution of Cases Based on Gestational Age

Gestational Age	No.	%
28-31 wks 6 days	13	6.16
32-35 wks 6 days	24	11.37
36-39 wks 6 days	144	68.25
≥40 wks	30	14.21

Table3: Distribution of Cases According to Various Presentations

Presentation	No.	%
Vertex	174	82.46

Breech		26	12.32	
Transverse lies		4	1.89	
Twins	Breech - breech	4	1.89	3.31
	Vertex - breech	2	0.94	
	Transverse - breech	1	0.47	

Table4: Distribution of Cases According to Indications for Caesarean Section

Indications	No.	%
Breech Presentation	27	12.79
Non-Reactive CTG	6	2.84
Transverse Lie	4	1.89
Deep Transverse Arrest	2	0.94
Placenta Previa	17	8.05
Failed Induction of Labor	21	9.95
Abruptio Placenta	8	3.79
Uteroplacental Insufficiency	6	2.84
Cephalopelvic Disproportion	5	2.36
Meconium Stain Liquor	22	10.42
Oligohydramnios	20	9.48
Two Loop Cord Around Neck (CAN)	21	9.95
Fetal Distress	12	5.68
Cord Prolapse	4	1.89
Severe Pre-eclampsia	3	1.42
Eclampsia	4	1.89
Twins	7	3.31
Nonprogress of Labour	7	3.31
IUGR	2	0.94
Nonreactive CTG & Paraplegia	1	0.47
Failed Induction & Pre-eclampsia	5	2.36
Breech With Oligohydramnios	6	2.84

Table5: Distribution of Cases According to Postoperative Morbidity

Postoperative Morbidity	No.	%
Wound Infection	3	1.42
Febrile Morbidity	6	2.84
Urinary Tract Infection (UTI)	2	0.95
Respiratory Tract Infection (RTI)	4	1.89
Secondary PPH	8	3.79
Muscle Hematoma	1	0.47

Table6: Distribution of Cases Based on Birth Weight

Birth Weight (in kg)	No.	%
1 - 1.5	2	0.91
1.5 - 2.5	66	30.27
2.5 - 3.5	114	52.29
> 3.5	36	16.51
Total	218	100.00
Mean \pm SD	2.78 \pm 1.46	

Table7: Distribution of Cases According to Neonatal Morbidity

Neonatal Morbidity	No.	%
Birth Asphyxia	5	2.37
Septicaemia	4	1.89
Meconium Aspiration Syndrome	2	0.95
Respiratory Distress Syndrome	9	4.27
Respiratory Distress Syndrome & Septicaemia	3	1.42
Neonatal Jaundice	2	0.95

Table8: Distribution of Cases Based on Causes of Neonatal Mortality

Causes	No.	%
Meconium Aspiration Syndrome	2	0.94
Septicaemia	2	0.94
Respiratory Distress Syndrome	1	0.47

Respiratory Distress Syndrome with Septicemia	1	0.47
Total	6	2.84

Discussion

In the our study, the Incidence of primary caesarean section in multigravida is 21.1%, high incidence of primary caesarean section in multigravida was because the hospital is a tertiary referral centre having a wide catchment area. Similarly, in a study conducted by Desai E et al ¹, the incidence was 29.05%. In Rajput N et al (12.61%)⁵, Himabindu P et al (7%)¹⁰ and Sams S et al (2.59%)³. Global increase in caesarean section rates may be due to combination of factor; increased safety of procedure, increased use of fetal monitoring, medico legal situations, fear of malpractice suits, obstetrics indications, and maternal request.

In our study, most of the women (42.18%) belong to age group 26-30 years, followed by 27.96% women were in the age group of 21-25 years. Because this is childbearing age groups. Similarly, Sams S et al³ reported maximum number of women undergoing primary caesarean section in multigravida were in age group of 25 -29 years (51.60%). In Himabindu P et al¹⁰, most of the women (68.8%) were in the age group of 21-25 years.

64.45% women were booked and 35.54% were unbooked. Most of cases were booked as our hospital is a tertiary care hospital. Similar observation was made by Samal R et al¹¹, majority of women were booked (97.1%). In Desai E et al¹ study, 27.90% women were booked and Himabindu P et al¹⁰ 29% women were booked.

In the present study, 26 women (12.32%) were referred from other hospitals and 185 women (87.68%) were not referred or directly admitted. Out of 26 referred cases, 23 were unbooked and remaining three women were

booked. In Desai E et al¹ where, 45.34% were referred and Rajput N et al⁵, 38.86% were referred.

In our study, 71.90% were second gravida, 18.48% were third gravida and 9% were fourth gravida and least common were fifth gravida (1.42%) (table1). It shows that in the last few years family size has shifted from 5-6 children per couple to 2-3 children per couple, hence the majority were second gravida. Similar in Himabindu P et al¹⁹ 63.9% were second gravida and Sams S et al³ study, 67.8% were second gravida. Also in a study by Rajput N et al⁵, 49.73% were second gravida.

Most of the women belonged to gestational age of 36–39 week 6 days with incidence of 68.25%, followed by 14.21% women at more than 40 weeks, 11.37% women at 32-35 week 6 days and 6.16% women were 28 – 32 weeks of gestational age (table2). Similar study by Rowaily MA et al¹², 78.8% women were 36-39 week 6 days of gestational age, 18.2% women 32-35 week 6 days of gestational age. In Rajput N et al⁵, study 59.33% women were 36-39 weeks 6 days of gestational age.

In our study, 18% parous women had antenatal maternal disorder. 10.90% women had Pregnancy induced hypertension (PIH), 3.89% women had anaemia, 1.42% had hypothyroidism, 0.95% had heart disease and GDM being 1.90%. In study by Himabindu P et al¹⁰, hypothyroidism was present in 1.61% women had hypothyroidism, in 0.53% women GDM and in 0.53% women heart disease.

Most common presentation was vertex (82.46%) followed by 12.32% were breech and 1.89% were transverse lie (table3). Similarly, in the study conducted by Himabindu P et al¹⁰, vertex presentation was present in 82.22%, breech in 11.82%, and transverse lies in 3.22%. In Sams S et al³ study vertex

presentation was present in 74.9%, breech in 20.3% and transverse lies in 0.9%.

In our study, 67.30% underwent emergency caesarean section and 32.70% had elective caesarean section. Similar in study done by Sams S et al⁴ where, 81.5% underwent emergency caesarean section, Rajput N et al⁵ study, where 72.28% underwent emergency caesarean section and also in Prakash SA et al¹³ study, where 75% underwent emergency caesarean section.

In our study, most common indication of caesarean section was malpresentations (Breech) accounted for 12.79% followed by meconium stained liquor 10.42%, failed induction of labor 9.95% and two loops cord around neck 9.95% (table4). As multiparity increase risk of malpresentation and abnormal placentation. Whereas in a study by Sams S et al³ the most common indication was non-reactive CTG 27%, followed by malpresentations (Breech) (20.4%). In Rao JH et al⁹, most common indication was cephalopelvic disproportion (18.5%), followed by fetal distress (17%), placenta previa (15%) and malpresentations (Breech) (14%). In Himabindu P et al¹⁰ fetal distress was present in 24.7% followed by malpresentations (Breech) (19.3%). In Rajput N et al⁵ study, fetal distress was present in 18.39% followed by placenta previa (16.84%) and malpresentations (Breech) (16.32%).

Most of women (94.78%) women underwent caesarean sections under spinal anaesthesia. Similarly, in the Sams S et al⁴ study, spinal anaesthesia was given in 94.8% and Rao JH et al⁹ study, spinal anaesthesia was given in 82.5%.

In our study, most common intraoperative complication was atonic PPH (4.73%).

In Sams S et al³ study, most common intraoperative complication was atonic PPH in 4.7% and also in Rao JH et al⁹ study, 4.7% had atonic PPH.

In our study, 11.37% women had postoperative morbidity. Secondary PPH was the commonest, incidence being 3.79% followed by febrile morbidity (2.84%), respiratory tract infection (1.89%), wound infection (1.42%), urinary tract infection (0.95%) and muscle hematoma (0.47%) (table5). In Desai E et al¹, most common was febrile morbidity in 11.63. In Sams S et al⁴, most common were respiratory tract infection in 2.36% and wound infection in 2.36%. In Prakash SA et al¹³, most common was febrile morbidity was found in 3.41%. In Rao JH et al⁹, most common was wound infection was 7.5%. There was no maternal mortality. This could be because of availability of antibiotics, blood transfusion facilities, safe anesthesia, timely intervention, better surgical techniques and timely referral.

Most of the babies (52.29%) had their weight between 2.5 - 3.5 kg, 30.2% had their weight between 1.5 - 2.5 kg, 16.51% had their weight >3.5 kg and 0.91% had their weight between 1.0-1.5 kg (table6). Similar to our study in Rajput N et al⁵ study, 54.81% babies had their weight between 2.5 - 3.5 kg. In Himabindu P et al¹⁰, 75.8% babies were in the weight group of 2.5 - 3.5 kg.

In our study, 11.84% had neonatal morbidity and requiring NICU admission. Respiratory distress syndrome was most common with incidence being 4.27% and others were birth asphyxia (2.37%), septicaemia (1.89%), respiratory distress syndrome (RDS) & septicaemia (1.42%), meconium aspiration syndrome (MAS) (0.95%) and neonatal jaundice (0.95%) (table7). In Rajput N et al⁵ study, birth asphyxia was most common (6.21%) and RDS was present in 5.69%, septicaemia in 3.36% and MAS in

2.84%. In Rao JH et al⁹ study, birth asphyxia was present in 4.5%, septicaemia in 4.5%, RDS in 2% and MAS in 3.5%.

In Sams S et al³ study, MAS was in 1.9%, septicaemia in 0.9% and RDS in 0.9%.

In our study, total neonatal mortality was 2.84%; commonest cause was septicaemia and meconium aspiration syndrome with incidence of 0.94% each. Others were RDS and RDS with septicaemia with incidence of 0.47% each (table8). Neonatal mortality was more in women, who were unbooked and referred and did not received proper antenatal care. Like our study, Rao JH et al⁹ reported, 0.5% MAS and 0.5% septicaemia. In Rajput N et al⁵ study, most common cause was birth asphyxia (2.33%).

Conclusion

From this study, it is very clear, that many unforeseen complications occur in women who previously had a normal vaginal delivery. Multiparity with previous vaginal deliveries is regarded as an optimistic fact, not a diagnostic criterion for spontaneous delivery in next pregnancy. A multipara who has earlier delivered vaginally may still require a caesarean section for safe delivery.

The incidence of primary caesarean section in multigravida was 21.1%. Malpresentation and antepartum haemorrhage were the most common indications for cesarean sections. There was no maternal mortality.

Most common cause of NICU admission was respiratory distress syndrome. Mortality rate was 2.84%, which was more common in unbooked and referred women. Hence, a multiparous woman in labour requires the same attention as that of primigravida and early recognition of complications to improve maternal and fetal outcome.

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