STUDY THE ASSESSMENT OF RISK FACTOR FOR PRIMARY CAESAREAN SECTION IN MULTIGRAVIDA
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Abstract
Background: It is a study of the assessment of risk factor of primary caesarean section in multigravida women who has had previous vaginal delivery of viable neonates.

Aim of Study: To study the risk factor 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: 42.18% women in the age group of 26-30 years and 71.90% were second gravida. 67.30% had emergency caesarean section. Among the various risk factor of caesarean section, malpresentation was commonest (12.79%).

Conclusion: There are many cases where a caesarean section becomes mandatory for her. Many unforeseen complications occur in women who previously had a normal vaginal delivery.

Introduction
Caesarean delivery is defined as birth of a fetus through incision in the abdominal wall (laparotomy) and uterine wall (hysterotomy). This definition does not include removal of the fetus from the abdominal cavity in the case of rupture of uterus or in the case of an abdominal pregnancy.

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

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.

Defensive obstetrics is another common cause for high rate of caesarean section. It has been observed that 82% of physicians performed caesarean to avoid negligence claims. Vaginal delivery takes around 12 hours against 30 minutes to perform caesarean section thus heavily taxing upon obstetrician time and patience.4,5

Primary cesarean section rate in teaching hospitals is rising due to technological advancement like ultrasound reporting of oligohydramnios, cord around neck, Doppler studies of absent or reversal of diastolic flow, infertility treatments, abnormal CTG, on demand cesarean section from the women.6

The major causes of maternal morbidity among these women were ruptured uterus, hypertensive vascular disease, placenta previa and malpresentations. Mainly, the baby and the placenta are responsible for caesarean section in multipara.

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 risk factor, maternal age and parity.8

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 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.

**Observation:**

In our study, 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.

53.08% had secondary education and only 1.42% were illiterate, majority of women undergoing primary caesarean section were Hindus (87.20%). 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%). (table 1), 68.25% women undergoing primary caesarean section were of gestational age between 36 – 39 weeks 6 days. (table 2)

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. Most common presentation (82.46%) was vertex presentation. (table 3)

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%, uteroplacental 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 (table 4).

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

**Table 1:** Distribution of Cases According to Gravidity

<table>
<thead>
<tr>
<th>Gravida</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>150</td>
<td>71.90</td>
</tr>
<tr>
<td>3</td>
<td>39</td>
<td>18.48</td>
</tr>
<tr>
<td>4</td>
<td>19</td>
<td>9.00</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>1.42</td>
</tr>
</tbody>
</table>

**Table 2:** Distribution of Cases Based on Gestational Age

<table>
<thead>
<tr>
<th>Gestational Age</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>28-31 wks 6 days</td>
<td>13</td>
<td>6.16</td>
</tr>
<tr>
<td>32-35 wks 6 days</td>
<td>24</td>
<td>11.37</td>
</tr>
<tr>
<td>36-39 wks 6 days</td>
<td>144</td>
<td>68.25</td>
</tr>
<tr>
<td>≥40 wks</td>
<td>30</td>
<td>14.21</td>
</tr>
</tbody>
</table>

**Table3:** Distribution of Cases According to Presentations

<table>
<thead>
<tr>
<th>Presentation</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertex</td>
<td>174</td>
<td>82.46</td>
</tr>
<tr>
<td>Breech</td>
<td>26</td>
<td>12.32</td>
</tr>
<tr>
<td>Transverse lies</td>
<td>4</td>
<td>1.89</td>
</tr>
<tr>
<td>Twins Breech</td>
<td>4</td>
<td>1.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.31</td>
</tr>
<tr>
<td>Transverse</td>
<td>1</td>
<td>0.47</td>
</tr>
</tbody>
</table>

**Table 4:** Distribution of Cases According to risk factor for Caesarean Section

<table>
<thead>
<tr>
<th>Indications</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breech Presentation</td>
<td>27</td>
<td>12.79</td>
</tr>
<tr>
<td>Non-Reactive CTG</td>
<td>6</td>
<td>2.84</td>
</tr>
<tr>
<td>Transverse Lie</td>
<td>4</td>
<td>1.89</td>
</tr>
<tr>
<td>Deep Transverse Arrest</td>
<td>2</td>
<td>0.94</td>
</tr>
<tr>
<td>Placenta Previa</td>
<td>17</td>
<td>8.05</td>
</tr>
<tr>
<td>Failed Induction of Labor</td>
<td>21</td>
<td>9.95</td>
</tr>
<tr>
<td>Abruptio Placenta</td>
<td>8</td>
<td>3.79</td>
</tr>
<tr>
<td>Uteroplacental Insufficiency</td>
<td>6</td>
<td>2.84</td>
</tr>
<tr>
<td>Cephalopelvic Disproportion</td>
<td>5</td>
<td>2.36</td>
</tr>
</tbody>
</table>
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

**DISCUSSION**

In our study, 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 al9 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 al10, majority of women were booked (97.1%). In Desai E et al7 study, 27.90% women were booked and Himabindu P et al10 29% women were booked.

In the present study 12.32% were referred from other hospitals and 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 al7 where, 45.34% were referred and Rajput N et al8, 38.86% were referred.

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 al11 63.9% were second gravida and Sams S et al9 study, 67.8% were second gravida. Also, in a study by Rajput N et al8, 49.73% were second gravida.

68.25%, women belonged to gestational age of 36–39 week 6 days 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 al13, 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 al4, 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 al11, 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 al11, vertex presentation was present in 82.22%, breech in 11.82%, and transverse lies in 3.22%. In Sams S et al9 study vertex presentation was present in 74.9%, breech in 20.3% and transverse lies in 0.9%.

67.30% underwent emergency caesarean section and 32.70% had elective caesarean section. Similar in study done by Sams S et al9 where, 81.5% underwent emergency caesarean section, Rajput N et al4 study, where 72.28% underwent emergency caesarean section and also in Prakash SA et al12 study, where 75% underwent emergency caesarean section.

In our study, most common risk factor for 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 placenta. Whereas in a study by Sams S et al9 the most common indication was non-reactive CTG 27%, followed by malpresentations (Breech) (20.4%). In Rao JH et al6, most common indication was cephalopelvic disproportion (18.5%), followed by fetal distress (17%), placenta previa (15%) and malpresentations (Breech) (14%). In Himabindu P et al11 fetal distress was present in 24.7% followed by malpresentations (Breech) (19.3%). In Rajput N et al8 study, fetal distress was present in 18.39% followed by placenta previa (16.84%) and malpresentations (Breech) (16.32%).

In our study, most common intraoperative complication was atonic PPH (4.73%). Similar in Sams S et al9 study, most common intraoperative complication was atonic PPH in 4.7% and in Rao JH et al6 study, 4.7% had atonic PPH.

**CONCLUSION**

From our study, A multipara who had earlier vaginal delivery may still require a caesarean section for safe delivery.

It is very clear, that many unforeseen complications occur in woman who previously had a normal vaginal delivery. Multiparity with previous vaginal deliveries is regarded as an optimistic fact, not a diagnostic criteria for spontaneous delivery in next pregnancy.
Malpresentation and antepartum haemorrhage were the most common risk factor for cesarean sections. We also observed anemia, severe preeclampsia and eclampsia in our study. There was no maternal mortality. Hence, a multiparous woman in labour requires the same attention as that of primigravida.

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**Ethical approval: The Institutional Ethical Committee approved the study**

**BIBLIOGRAPHY**