

Evaluation of Maternal Outcome in Breech Deliveries of both Primiparous and Multiparous Women

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Abstract

Introduction: When compared to cephalic presentation, breech is the most prevalent mal-presentation with greater neonatal and maternal mortality and morbidity. Only deliberate distribution strategies can avert this undesirable effect. The aim of the study was to compare and evaluate different delivery methods of breech presentations in respect to parity of the mother.

Methods: This prospective study was done at the Department of Obstetrics & Gynecology of Rangpur Medical College with a total of 104 pregnancies. Appropriate cases of breech presentation were included and all necessary information was noted including predictive factors, management details, and outcome of the delivery.

Result: Vaginal deliveries were 10 out of 53 patients (18.9%) in primiparas compared with 18 out of 51 (35.3%) in multiparas. Successful vaginal deliveries were observed high (45%) in multiparous mothers. Higher percentage of multiparous women suffered from different morbidities compared to the primiparous group, which was statistically significant as a whole ($p < 0.05$). Maternal complications in puerperium were higher in multiparas compared to primipara that is statistically significant ($p < 0.05$).

Conclusion: Primiparous mothers with breech presentation are more prone to undergo cesarean deliveries and thereby develop post-operative complications. But multiparous mothers have more complications during delivery process. Overall maternal complications, both at delivery and at puerperium, were higher among the multiparous women in comparison to primiparous women.

Keywords: Puerperium, Outcome, Maternal, Parity, Multipara, Primipara

Date of Submission: 05-04-2022

Date of Acceptance: 20-04-2022

I. Introduction

The most common mal-presentation is breech, which is defined as the fetus entering the mother pelvis through the gluteal region rather than the cephalic region for the first time. In layman's terms, a breech baby is one who is positioned in the uterus feet or bottom first, rather than head first.^[1] The global incidence of breech presentation is 25% before week 28, 7% at week 32, and 4% at 38-40 weeks of gestation.^{[2]-[4]} Pregnancies complicated by breech presentation had greater perinatal mortality, neonatal death, or significant neonatal morbidity than cephalic position pregnancies.^{[3]-[5]} It is assumed that breech presentation is a poor predictor of prenatal destiny. It is heavily influenced by delivery methods and parity. It is normal practice in Bangladesh to do a cesarean surgery to deliver a breech baby. Vaginal delivery for breech presentation is still practiced, although less frequently. Breech presentation has been shown to be a poor predictor during the previous three decades. Breech presentation is thought to have a higher perinatal and maternal mortality and morbidity than cephalic delivery.^{[5],[6]} According to one study, perinatal mortality was higher in breech groups than in vertex groups, independent of gestational age or low birth weight.^[7] Every parent, however, wishes for the best pregnancy outcome possible—a healthy baby and mother. It was recently shown that employing planned delivery methods can reduce prenatal morbidity and mortality.^{[4],[8]} When considering delivery choices in breech presentation for a better fetal outcome, parity is an important factor to consider. Despite the fact that nulliparous women had more neonatal issues, the study indicated that 50 percent of nulliparous women had successful vaginal deliveries compared to 75.8 percent of multiparous women.^[9] Only in independent trials, regardless of parity, were improved fetal outcomes observed in breech presentation conditions with planned cesarean

surgery.^{[4],[10]-[12]} As a result, the vast majority of breech pregnancies end in cesarean section.^{[4],[11]} Although Asia's overall cesarean section rate is 27.3 percent, maternal morbidity rates have risen marginally in parallel with the increase in cesarean section.^{[3],[13],[14]} When compared to a vaginal breech delivery, elective cesarean section does not improve the infant's prognosis but may increase risks for the mother, such as bleeding, infection, and a longer hospital stay.^[8] Furthermore, cesarean births need a huge quantity of resources, which may not always be accessible in a poor country like Bangladesh. However, it is important to note that not all breech presentations need a cesarean delivery. The current study was designed to look at potential maternal problems in breech births (both vaginal and cesarean) in both primiparous and multiparous women.

II. Objective

General Objective

- To evaluate maternal outcomes of breech deliveries among primiparous and multiparous women.

Specific Objectives

- To observe ratio of successful vaginal deliveries among breech deliveries of primiparous and multiparous women
- To observe any possible correlation between height and weight of breech delivery women with parity

III. Methods

This descriptive longitudinal study was conducted at the Department of Gynecology & Obstetrics, and the Department of Pediatrics of Rangpur Medical College Hospital, Rangpur, Bangladesh. The study duration was 2 years, from January 2011 to December 2012. A total of 104 cases were selected following the inclusion and exclusion criteria. Written informed consent was taken from every study participant, and anonymity was also insured for the participants. Ethical approval was also obtained from the ethical review committee of the study hospital. After the collection of data, a master sheet was prepared for analysis. The collected data was compiled and findings were presented in the form of tables and graphs. Appropriate statistical analysis of the data was done using statistical package for social science (SPSS) with student t-test, chi-square test, and others where applicable.

Inclusion Criteria

- Breech Presentation cases
- 37-42 gestational weeks
- Patients who had given consent to participate in the study.

Exclusion Criteria

- Twin pregnancies
- Intra-uterine death
- Severe pre-eclampsia or eclampsia
- Uncontrollable diabetes mellitus
- Exclude those affected with other chronic diseases etc.

IV. Results

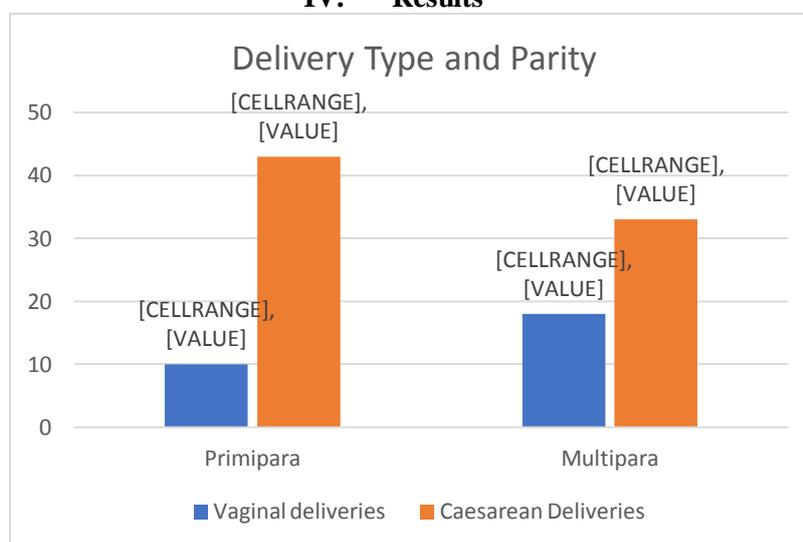


Figure 1: Distribution of delivery type and breech presentation at term related with parity (n=104)

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Among the 53 primipara births, 18.87% were vaginal deliveries, and 81.13% were cesarean deliveries. Among the 51 multipara births, 35.29% were vaginal deliveries, while 64.71% were cesarean deliveries.

Table 1: Outcome of trial of labor and delivery outcome by parity (n=104)

| | Primiparous mothers (n=53) | | Multiparous mothers (n=51) | |
|-----------------------------|----------------------------|-------------------|----------------------------|-------------------|
| | Vaginal delivery | Cesarean delivery | Vaginal delivery | Cesarean delivery |
| Planned vaginal delivery | 5 | 17 | 9 | 11 |
| Planned cesarean delivery | 0 | 31 | 2 | 29 |
| Total | 10 | 43 | 18 | 33 |
| Successful vaginal delivery | 5/22 (22.7%) | | 9/20 (45.0%) | |

In primiparous mothers, 22 were selected for vaginal delivery. But actually, only 5 were successfully delivered vaginally (22.7%), the remaining needed cesarean delivery. All the patients planned for cesarean section followed the same type. On the other hand, successful vaginal deliveries were observed high (45%) in multiparous mothers.

Table 2: Demographic characteristics and immediate fetal outcome by parity (n=104)

| Variables | Primiparous women (Mean±SD) | Multiparous women (Mean±SD) |
|---------------------|-----------------------------|-----------------------------|
| Maternal age (y) | 24.58±5.16 | 28.9± 6.14 |
| Gestational age (w) | 38.14± 1.45 | 39.16± 1.53 |
| Birth weight (gm) | 3134.67± 344.51 | 3246.87± 433.23 |

The table shows the mean age, gestational age, and the birth weight of the participants and their children. Among the primiparous women, mean maternal age was 24.58 years, which was slightly lower than the mean age of multiparous women at 28.9 years. Mean gestational age of both groups were pretty similar, with gestational age of 38.14 weeks in primipara and 39.16 weeks in multipara groups. The mean birth weight was also similar in both groups

Table 3: Correlation between height distributions of mothers in both the groups

| Height (cm) | Primipara mothers (n=53) | | | Multipara mothers (n=51) | | | p-value |
|-------------|--------------------------|----------------|-----------|--------------------------|----------------|-----------|---------|
| | Number | Percentage (%) | Mean± SD | Number | Percentage (%) | Mean± SD | |
| <152 | 31 | 58.5 | 150.3±3.8 | 11 | 21.6 | 152.2±4.7 | 0.53 |
| 152-158 | 18 | 33.9 | | 37 | 72.5 | | |
| >158 | 4 | 7.6 | | 3 | 5.9 | | |

Mean height in primiparous and multiparous group was 150.3±3.8 cm and 152.2±4.7 cm respectively. The difference between both groups was not statistically significant.

Table 4: Comparison between weight distributions of the mothers in both the groups

| Weight (Kg) | Primipara mothers (n=53) | | | Multipara mothers (n=51) | | | p-value |
|-------------|--------------------------|----------------|----------|--------------------------|----------------|----------|---------|
| | Number | Percentage (%) | Mean± SD | Number | Percentage (%) | Mean± SD | |
| <60 | 09 | 16.9 | 66.3±5.5 | 07 | 13.7 | 67.2±5.7 | 0.17 |
| 60-70 | 37 | 69.8 | | 39 | 76.5 | | |
| >70 | 07 | 13.3 | | 05 | 9.8 | | |

Mean weight in primiparous and multiparous group was 66.3±5.5 kg and 67.2±5.7 kg respectively. This slight difference was not statistically significant.

Table 5: Comparison of maternal complications during delivery in both the groups (n=104)

| Maternal Complication at delivery | Primipara mothers (n=53) | | Multipara mothers (n=51) | | p-value |
|-----------------------------------|--------------------------|------------|--------------------------|------------|---------|
| | Number | Percentage | Number | Percentage | |
| None | 46 | 86.8 | 37 | 72.5 | <0.05 |
| Post-Partum Hemorrhage | 02 | 3.7 | 05 | 9.7 | |
| Retained placenta | 01 | 1.9 | 01 | 1.9 | |
| Genital tract injury | 03 | 5.7 | 04 | 7.8 | |
| Anesthetic complications | 01 | 1.9 | 03 | 5.8 | |
| Shock | 00 | 00 | 01 | 1.9 | |

86.8% of primiparous and 72.5% of multiparous did not suffer from any maternal complications during delivery. No mortality was reported. A higher percentage of multipara women suffered from different morbidities compared to primiparous, which was statistically significant as a whole

Table 6: Comparison of maternal complications during puerperium in both groups (n=104)

| Maternal Complication during puerperium | Primipara mothers (n=53) | | Multipara mothers (n=51) | | p-value |
|---|--------------------------|------------|--------------------------|------------|---------|
| | Number | Percentage | Number | Percentage | |
| None | 32 | 60.4 | 19 | 37.4 | <0.05 |
| Secondary PPH | 03 | 5.7 | 05 | 9.8 | |
| Fever | 09 | 16.9 | 11 | 21.6 | |
| UTI | 03 | 5.7 | 08 | 15.6 | |
| Wound infection | 06 | 11.3 | 08 | 15.6 | |

Maternal complications in puerperium were higher in multipara group compared to the primipara group. This difference of complications was statistically significant (p < 0.05). Fever was the most prevalent complication in both the groups.

V. Discussion

Premature labor is the most common cause of breech presentation. The majority of these infants are structurally normal. It is unknown if breech presentation increases the risk of premature labor. Maternal or fetal abnormalities is another key cause of breech presentation. Breech presentation also puts greater risk on the mothers, both in case of vaginal deliveries and cesarean deliveries. Breech vaginal deliveries can cause fetal head entrapment, intracranial hemorrhage, premature rupture of membranes, or even tear on the vaginal wall. Cesarean section brings with it its own set of risks and complications. The present study focused on the maternal outcomes and complications in breech presentation cases in respect to parity of the women. During the research period, the total number of births at the study hospital's maternity unit was 1621, with 6.41 percent (n=104) having breech presentation. Vaginal births were seen in 10 of 53 patients (18.9%) in the primiparous group, compared to 18 out of 51 (35.3%) in the multiparous group. Cesarean deliveries were more common in both groups of breech babies. This high rate of cesarean delivery among cases with breech presentation was consistent with the findings of another research by Hannah et al.^[4] It is often assumed that vaginal birth is not the ideal option in breech presentation, particularly in nulliparous women. The findings of several writers lend weight to this line of thought.^{[15],[16]} The current study also found that primiparous women were not the most prevalent choices for vaginal birth, with just 18.9 percent using this approach. This observation is consistent with the earlier-mentioned authors' reporting.^{[15],[16]} The successful vaginal birth rate among women who were eligible for planned vaginal deliveries was 22.7 percent in the primiparous group and 45 percent in the multiparous group. Appropriate technique of delivery selection adds to improved success, especially in the case of multiparous women. This high percentage of vaginal delivery success among multiparous women was consistent with the findings of another research.^[17] According to the baseline characteristics of the patients, the mean age of primiparous women was 24.58 5.16 years, while multiparas were 28.9 6.14 years. Breech births are more prevalent among women under the age of 30, as shown in our study and corroborated by the findings of

previous investigations.^{[15],[18]-[21]} The reason for this young age might be the relative increased gravidity and parity at a younger age in our society. The mean gestational age in this study for primiparas was 38.14± 1.45 weeks and for multiparas, it was 39.16± 1.53 weeks. This finding was almost similar to the observations of another study in Austria where the mean gestational age was 39.9±1.4 weeks and 39.9±1.2 weeks in the cesarean delivery group and vaginal delivery group respectively.^[18] The majority of the patients in both groups were of average height and weight. The mean heights of primipara and multipara women were 150.33.8cm and 152.24.7cm, respectively, and were not statistically significant. Height is a significant measure for newborn outcome as stated in several research, with height less than 145cm, regardless of parity, being associated with poor obstetrical result.^{[22],[23]} The primipara and multipara groups' mean weights were 66.35.5 kg and 67.25.7 kg, respectively, which was not statistically significant. These data show that the maternal anthropometric criteria have no effect on the outcome in this study in the setting of the parity with breech presentation. Only 3.7 percent of primiparas and 9.7 percent of multiparas experienced post-partum hemorrhage (PPH), with no serious fatalities. PPH is regarded as a primary cause of newborn death and morbidity across the world. Although there is a much greater incidence of PPH in multiparas, most likely due to post-delivery uterine inertia, the overall low figure in our research reflects the timely and effective management provided to patients with hemorrhage in this tertiary environment. Injuries to the genital tract occurred in 5.7 percent of primipara women and 7.8 percent of multipara women (p 0.05). Furthermore, anesthetic problems (5.8%) and shock (1.9%) were observed to be considerably greater in multiparas. In both groups, a single case of retained placenta was detected. Multipara mothers suffered most during puerperium in all context compared to primipara women, which was also statistically significant.

Limitations of the Study

The study was conducted in a single hospital with small sample size. So, the results may not represent the whole community.

VI. Conclusion

Primiparous mothers with breech presentation are more prone to undergo cesarean deliveries and thereby develop post-operative complications. But multiparous mothers have more complications during delivery process. Overall maternal complications, both at delivery and at puerperium, were higher among the multiparous women in comparison to primiparous women.

VII. Recommendation

All the patients should have regular ante-natal check-up. Routine investigations should be advised to exclude mal-presentation and other complications. External cephalic version (ECV) should be practiced in possible cases which will prevent any unnecessary caesarean section and thereby reduce maternal complications in puerperium. Patients should be properly counseled regarding possible problems of each delivery methods before delivery

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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