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Comparative Study on Breech Deliveries among the Primiparous and Multiparous Women in a Tertiary Care Hospital

Basak M. R[1*], Sarker A[2], Roy N[3], Modak P[4], Basak R[5], Sarker A. N[6], Basak B.K[7]

[1]Dr. Mousumi Rani Basak, Associate Professor, Department of Gynae & Obstetrics, Rangpur Community Medical College, Rangpur Bangladesh
[2]Avijit Sarker, Intern Doctor, Department of Medicine, Sir Salimullah Medical College, Dhaka, Bangladesh
[3]Nirmalya Roy, Medical Officer, Department of International Organization of Migration, Dhaka, Bangladesh
[4]Prianka Modak, Intern Doctor, Department of Medicine, Sir Salimullah Medical College, Dhaka, Bangladesh
[5]Ranjit Basak, Professor, Department of Pediatrics, Rangpur Community Medical College, Rangpur Bangladesh
[6]Audhindra Nath Sarker, Medical Officer, Mother & Child Welfare Centre (MCWC), Boda, Panchagarh, Bangladesh
[7]Ex-Lecturer, City Dental College, Dhaka, Bangladesh

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***Corresponding Author:** Basak M. R
Associate Professor, Rangpur Community Medical College, Rangpur Bangladesh

Abstract

Introduction: Breech is the commonest mal-presentation where increased perinatal and maternal mortality and morbidity are reported compared to cephalic presentation. This unwanted outcome can only be prevented by planned delivery methods. The aim of the study was to compare fetal outcomes in all delivery methods among the primiparous and multiparous women and thereby helping in preparing appropriate delivery protocol in breech presentation. ***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:*** Among the 104 participants of the study, 53 were primiparous pregnancy, and 51 were multiparous pregnancy cases. In total, 28 out of 104 had vaginal deliveries, and 76 had a delivery through cesarean section. The cesarean section had a much higher prevalence (81.13%) among primipara cases. 22 of the primipara and 20 of the multipara cases had planned for vaginal delivery, but successful vaginal delivery was observed to be 22.7% in primiparous women and 45% among multiparous women. The mean age was 24.58 years among the primiparous women and 28.9 years among the multiparous. A higher percentage of multiparous cases (80.4%) had no fetal complications compared to primiparous cases (71.7%). Among neonatal complications, birth traumas were significantly more frequent in the primiparous compared with multiparous. 43.4% of neonates needed admission from the primipara group compared with 33.3% in multipara. Among maternal complications, a higher percentage of multipara women suffered from different morbidities compared to primiparous, which was statistically significant as a whole. ***Conclusion:*** Proper planning of delivery methods is important to decrease both maternal and fetal morbidities and mortality irrespective of parity. Primiparous mothers with breech presentation are more prone to undergo cesarean deliveries and thereby develop postoperative complications. But multiparous mothers have more complications during the delivery process. Overall neonatal complications especially birth traumas are more common among the babies of primiparous mothers.

Keywords: Breech, Pregnancy, Primiparous, Multiparous, Parity.

INTRODUCTION

The most frequent mal-presentation is breech, which is described as the fetus's first entry into the maternal pelvis through the gluteal area rather than the cephalic region. In layman's terms, a baby is breech when they are positioned in the uterus feet or bottom first, rather than the head [1]. The worldwide 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 have higher perinatal mortality, neonatal death, or substantial neonatal morbidity than pregnancies in which the fetus is in a cephalic position [3-5]. Breech presentation is

thought to be a poor predictor of fetal fate. It is largely affected by delivery techniques and parity. It is a common procedure in Bangladesh to do a cesarean section to deliver a baby who is in a breech position. However, vaginal delivery for breech presentation is still used, but less often. Over the last three decades, it has been clear that breech presentation is a poor predictive indicator. It is considered that breech presentation has a greater perinatal and maternal mortality and morbidity than cephalic birth [5, 6]. A study found that regardless of gestational age or low birth weight, perinatal mortality was greater in breech groups than in vertex groups [7]. However, every parent hopes for the greatest possible pregnancy outcome—a healthy baby and mother. It has recently been discovered that using planned delivery approaches can lower perinatal morbidity and death [4, 8]. Parity is a crucial issue to consider when contemplating delivery options in breech presentation for a better fetal outcome. The research found that 50 percent of nulliparous women had successful vaginal births, compared to 75.8 percent of multiparous women, despite the fact that newborn problems were higher in nulliparous women [9]. Only with scheduled cesarean surgery in separate trials, regardless of parity, were improved fetal outcomes reported in breech presentation situations [4, 10-12]. As a result, the majority of breech pregnancies result in a cesarean section [4, 11]. The total cesarean section rate in Asia is 27.3 percent, however, maternal morbidity rates have climbed slightly in tandem with the increase in cesarean section [3, 13, 14]. When compared to a vaginal breech birth, the elective cesarean section does not ensure a better outcome for the infant but may raise risks for the mother, such as bleeding, infection, and a longer hospital stay [8]. Furthermore, cesarean deliveries necessitate a large number of resources, which may not be available in all situations in a poor nation like Bangladesh. However, now is the moment to consider that not all breech presentations necessitate a cesarean birth. So, this study is an attempt to compare fetal outcomes in all delivery methods among the primiparous and multiparous women and thereby helping in preparing appropriate delivery protocol in breech presentation.

OBJECTIVE

General Objective

- To compare fetal outcomes of different delivery methods between primiparous and multiparous pregnancies

Specific Objectives

- To compare maternal complications of different delivery methods between primiparous and multiparous pregnancies

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.

RESULTS

The study's 104 participants included 53 cases of primiparous pregnancy and 51 cases of multiparous pregnancy. In all, 28 of the 104 births were vaginal, while the remaining 76 were cesarean sections. Cesarean section was performed at a substantially greater rate (81.13 percent) in primipara patients. Vaginal birth was intended for 22 of the primipara instances and 20 of the multipara cases, however effective vaginal delivery was seen to be 22.7 percent in primiparous women and 45 percent in multiparous women. The mean age of primiparous women was 24.58 years and 28.9 years for multiparous women. When compared to primiparous cases, a larger number of multiparous patients (80.4 percent) experienced no fetal problems (71.7 percent). Birth injuries were substantially more common in primiparous women than in multiparous women among newborn problems. In the primipara group, 43.4 percent of newborns required hospitalization, compared to 33.3 percent in the multipara group. Among maternal problems, a larger percentage of multiparous women suffered from various morbidities than primiparous women, which was statistically significant overall.

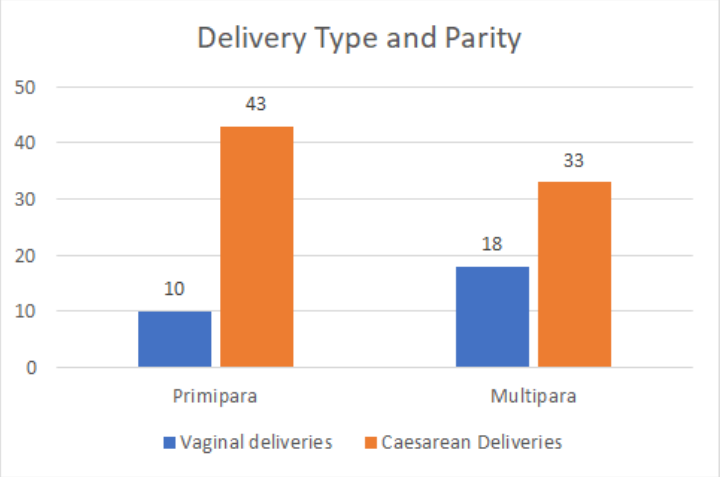

Figure 1: Distribution of delivery type and breech presentation at term related with parity (n=104)

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
5-min APGAR score	8.1± 1.0	8.3± 1.3

Table 3: Comparison of fetal outcomes in both groups (n=104)

Fetal Complications	Primiparous mothers		Multiparous mothers		p-value
	Number	Percentage	Number	Percentage	
No Complications	38	71.7	41	80.4	0.213
Still Birth	01	06.66	01	10.0	0.078
Birth asphyxia	07	46.68	05	50.0	0.162
Birth trauma	06	40.00	03	30.0	0.023
Neonatal death	01	06.66	01	10.0	0.132

There was no difference in the rates of fetal birth asphyxia between neonates of primiparous and the neonates of multiparous (46.68% vs50.0%, respectively; p=0.162). But birth traumas were significantly more frequent in the primiparous compared with multiparous (40.0% vs 30.0%, p=0.023).

Table 4: Comparison of neonatal admission between both groups with breech presentations (n=104)

Neonatal Admission	Primiparous mothers		Multiparous mothers		p-value
	Number	Percentage	Number	Percentage	
No	30	56.6%	34	66.7%	0.012
Yes	23	43.4%	17	33.3%	

A higher percentage (43.4%) of neonates needed admission from the primipara group compared with 33.3% in multipara; which was statistically significant (p=.012).

Table 5: Comparison between causes of neonatal admission in both the groups (n=40)

Causes of Neonatal admission	Primiparous mothers		Multiparous mothers	
	Number	Percentage	Number	Percentage
Birth Asphyxia	09	39.1	07	41.1
Birth trauma	05	21.7	01	05.9
Neonatal Jaundice	06	26.1	08	47.1
Umbilical sepsis	01	04.4	00	00
Neonatal sepsis	02	08.7	01	05.9

The majority of the neonates admitted in the neonatal ward were due to birth asphyxia (39.1% in primipara versus 41.1% in multipara mothers). Neonatal admission due to birth trauma (bruises, fractures of the bones, intracranial hemorrhage) was more frequent in primipara compared with the multipara (21.7% versus 5.9% respectively).

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

Maternal Complication at delivery	Primiparous mothers (n=53)		Multiparous 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	
Anaesthetic 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

DISCUSSION

The major reason for breech presentation is the preterm onset of labor. Most of these babies are structurally normal. It remains unclear whether breech presentation predisposes to preterm labor. Another important cause of breech presentation is maternal or fetal abnormality. In one study it was found that 18% of preterm breech infants were congenitally abnormal and 5% incidence of congenital anomaly in term breech fetuses, two and half times higher than in the vertex counterparts (2.1%). Central nervous system abnormalities are the most commonly noted. Ultrasonography is the most informative method of confirming breech presentation, but it can also be confirmed by x-ray. The present study was conducted to compare fetal outcomes of different delivery methods between primiparous and multiparous pregnancies, in hopes of helping to decide the best management methods and delivery methods for breech presentations. During the study period, the total number of deliveries at the maternity unit of the study hospital was 1621, among which, 6.41% (n=104) were with breech presentation. Among the women with breech presentation, vaginal deliveries were observed in 10 out of 53 patients (18.9%) in the primiparous group, compared with 18 out of 51 (35.3%) in the multiparous group. Cesarean deliveries were higher in both groups with breech presentations. This high prevalence of cesarean section among breech presentation cases was similar to the findings of another study by Hannah *et al.*, [4]. It is commonly thought that vaginal delivery is not a preferred method in breech presentation, especially in nulliparous women. This line of thought is well supported by the findings of different authors [15, 16]. The present study also shows that primiparous were not the common candidates for vaginal delivery whereas only 18.9% underwent this method. This observation is consistent with the reporting of the previously quoted authors [15, 16]. It was observed that among the women who were candidates for planned vaginal deliveries, the successful vaginal delivery rate was 22.7% among the primiparous group and 45%

among the multiparous group. Appropriate selection of the method of delivery contributes to better success, especially in the case of multiparous women. This high success rate of vaginal delivery among multiparous women was similar to the findings of another study [17]. The evaluation of patients' baseline characteristics showed that the mean age of the primiparous women was 24.58± 5.16 years and multiparas were 28.9± 6.14 years. Breech deliveries are more common among women aged less than 30 years, as observed in our study and supported by the findings of other studies as well [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]. Among the primiparas, 15 out of 53 (28.3%) babies were born with complications and the rest (71.7%) were healthy live births. On the contrary, a higher percentage (80.4%) of delivery of healthy live births was observed in multipara women. Here, multipara women with breech presentation showed better neonatal outcomes as a whole, irrespective of the mode of delivery process. Similarly, the majority of multiparas with the breech presentation were delivered without any neonatal morbidity in different studies [22, 23]. Several neonatal complications were noted in both the groups like stillbirth, birth asphyxia, different birth traumas, etc. and even neonatal death Neonatal mortality accounted for 6.66% in primipara and 10% in the multipara group, which was statistically significant. There was no significant difference in the rates of fetal birth asphyxia between neonates of primipara and neonates of multipara groups, but it was accounted as a major disease burden irrespective of parity like some other overseas studies [24, 25]. Unlike other fetal complications, birth traumas were significantly more frequent in the primiparous compared with multiparous. This finding was supported by a Canadian article where it is described that neonatal trauma, especially genital trauma is more common among the primiparous breech delivery [26]. Admission to the Neonatal Intensive Care Unit (NICU) was 43.4% versus 43.3% in the primipara and multipara groups respectively, which was statistically significant. In total, 40 children were admitted to the neonatal ICU. Here, 39.1% from the primipara group and 41.1% from the multipara group were admitted neonates who suffered from birth asphyxia, which was the commonest cause of NICU admissions in both groups. Only 3.7% of primiparas mothers and 9.7% of the multiparas suffered from postpartum hemorrhage (PPH), none of them had any major casualties. Although a significantly higher incidence of PPH is noted among the multiparas probably due to post-delivery uterine inertia, the overall low figure of this complication in this study reflected the prompt and appropriate intervention given to the patients with hemorrhage in this tertiary setting.

Limitations of the Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community. Pre-operative check-ups and full investigational support were not always available.

CONCLUSION

It is critical to plan delivery approaches carefully in order to reduce mother and fetal morbidity and death, regardless of parity. Primiparous moms with breech presentation are more likely to have cesarean births, increasing the risk of postoperative problems. However, multiparous moms have additional challenges throughout the birth process. Overall, neonatal problems, particularly delivery traumas, are more likely in babies born to primiparous women.

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