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■ Original Research Article

Breech Delivery in Ahmadu Bello University Teaching Hospital, Zaria: A Six-Year Retrospective Review.

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ABSTRACT

Background: Breech delivery is associated with maternal and perinatal morbidity and mortality which may be caused by preterm delivery, congenital abnormalities, and birth asphyxia. The other factors which may influence perinatal outcome include quality of antenatal care, route of delivery and the skill of the accoucheur. Aim: To determine the prevalence, risk factors for breech presentation, and outcome of breech deliveries. **Methodology:** This was a cross-sectional retrospective study carried out in our hospital from 1st January 2014 to 31st December 2019. The case folders of women who had breech deliveries during the period of review were retrieved. Information on reproductive profile, maternal and perinatal outcomes was extracted and analyzed. The data obtained were analyzed using the statistical package for social sciences (SPSS) statistical software version 23. The chi-square test was used to test for associations and P <0.05 was set as the level of significance. **Results:** The prevalence rate for breech delivery was 11.9%. The commonest identified risk factor was multiple gestation, and no risk factor was identified in nearly half of the cases (47.9%). Stillbirth occurred in 16.3%. Sex, birth weight, and route of delivery were associated with stillbirth (p<0.05). Low birth weight and male sex doubled the odds of being stillbirth and vaginal delivery quadrupled the odds (OR=2.02, CI 1.00-4.04; OR=2.02, CI 2.02-4.00 and OR=4.67, CI 2.26-9.64 respectively). Babies delivered vaginally were more likely to be asphyxiated (OR=1.5, CI 0.81-2.77). **Conclusion:** The prevalence of breech delivery was high with an associated increased risk of birth asphyxia in babies delivered via the vaginal route.

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INTRODUCTION

Breech presentation is when the foetal buttocks occupy the lower uterine pole. Various prevalences of breech presentation at term have been reported globally ranging from 1.4-4%.[1]Breech presentation may be idiopathic and may occur due to some factors such as congenital uterine anomalies, uterine fibroids, placenta previa, multiple pregnancies, oligohydramnios, polyhydramnios, contracted pelvis, high parity, fetal neuromuscular condition, and fetal congenital anomalies.[2] In a study in southwestern Nigeria they found that the majority of breech presentations did not have any anatomical cause.[3]

Breech delivery is associated with high perinatal morbidity and mortality due to multiple factors such as prematurity, mode of delivery, lethal

foetal anomalies, birth asphyxia, and birth trauma.[4] Mode of delivery in breech presentation continues to pose a challenge to obstetricians because of the perinatal outcome vis-à-vis APGAR scores and acid-base status of babies delivered in the breech. It was found that breech babies delivered vaginally had lower pH than those delivered abdominally but the same lower pH was also found in babies delivered vaginally with vertex presentation. Therefore, the lower pH was because of the mode of delivery and not due to the presentation.[5]

Competence in the skill of assisted vaginal breech delivery cannot be over-emphasized as assisted vaginal breech delivery continues to be an option of management in developing countries because many women have an aversion to caesarean section, with many women not accessing antenatal care and some of them presenting in labour with breech presentation.

This study aimed to determine the prevalence, risk factors for breech presentation, and perinatal outcome of breech deliveries in our hospital.

METHODOLOGY

This was a cross-sectional retrospective study carried out in our hospital from January 1st, 2014, to December 31st, 2019. The case folders of women who had breech deliveries during the period of review were retrieved. Information on socio-demographic variables which included reproductive profile, mode of delivery, and perinatal outcome were extracted. The data obtained were analyzed using the statistical package for social sciences (SPSS) statistical software version 23. Descriptive statistics were used for categorical variables. The chi-square test was used to test for associations and P <0.05 was set as the level of significance.

RESULTS

During the period under review, there were 3523 deliveries of which 421 were breech deliveries, averaging 11.9%. Two hundred and fifty-seven case files were retrieved and analyzed giving a retrieval rate of 61%. The mean age and standard deviation (SD) of the parturients was 29.3 ± 6.6 years. Their parity ranged from 0–13 with a median parity of 3. Only 28% of breech deliveries occurred in grand multiparous women. The majority (73.9%) had booked pregnancies. The mean gestational age at delivery was 35 weeks. See Table 1.

The commonest risk factor for breech presentation identified was multifetal pregnancy (39.7%) and the least was contracted pelvis (0.8%). Nearly half of the parturients had no recognized risk factor for breech presentation as seen in Figure 1. Over half (59.1%) of the parturients were delivered by caesarean section. The majority, (83.7%) were live births and 55.3% were females. The mean birth weight was 2.4 ± 0.84kg. Intrapartum foetal

Table 1: Age and Reproductive Profile of Parturients

Variable	Frequency (%)
Age (years)	
15-19	12 (4.7)
20-24	54 (21.0)
25-29	85 (33.1)
30-34	40 (15.6)
35-39	43 (16.7)
40-44	22 (8.6)
45-49	1 (0.3)
Total	257 (100)
Parity	
0-1	64 (24.9)
2-4	110 (42.8)
≥5	82 (31.9)
Total	257 (100)
Booking status	
Booked	200 (77.8)
Unbooked	57 (22.2)
Total	257 (100)

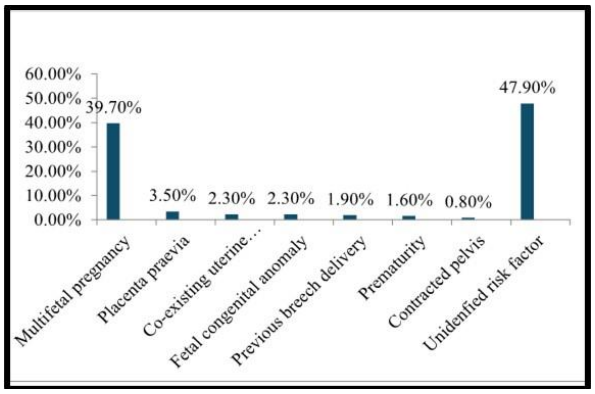

Figure 1: Risk factor for breech presentation

morbidity was seen in only 0.8% of all babies delivered. See Table 2.

Parity did not affect the risk of stillbirth. The mode of delivery was associated with stillbirth (p =

<0.001) and the odds of stillbirth increased by almost five-fold in babies delivered vaginally. Babies that weighed < 2.5kg had double odds of being still stillbirths. The odds of stillbirth were also nearly doubled in male babies compared to female babies. See Table 3. The risk of an Apgar score of <7 at the fifth minute was increased by 50% in babies delivered vaginally but this was not significant as seen in Table 4.

Table 2: Breech Delivery Outcome

Outcome	Frequency (%)	Outcome	Frequency (%)
Mode of delivery		**Sex**	
Vaginal	105 (40.9)	Male	115 (44.7)
Caesarean	152 (59.1)	Female	142 (55.3)
Total	257 (100)	Total	257 (100)
Fetal outcome		**Intrapartum perinatal morbidity**	
Live birth	215 (83.7)	Musculoskeletal injury	1 (0.4)
Stillbirth	42 (16.3)	Head entrapment	1 (0.4)
Total	257 (100)	No morbidity	255 (99.2)
		Total	257 (100)

Table 3: Predictors of Stillbirth in Breech Deliveries

	Stillbirth n=42	Live birth n=215	*p* value	Odds ratio	Confidence interval	
					Upper limit	Lower limit
Parity						
≥ 5	14	70	0.920	1.03	0.51	2.09
< 5	28	145		1		
Mode of delivery						
Vaginal	30	75	<0.0001	4.67	2.26	9.64
Caesarean	12	140		1		
Birth weight						
< 2.5kg	28	107	0.048	2.02	1.00	4.04
≥ 2.5kg	14	108		1		
Sex						
Male	25	90	0.04	2.02	1.04	4.00
Female	17	125		1		

Table 4: Effect of Mode of Delivery on Apgar Score At 5th Minute

Mode of delivery	Apgar at 5th minute < 7	Apgar at 5th minute ≥ 7	p-value	Odds ratio	Confidence interval	
					Upper	Lower
Vaginal	25 (33.3%)	50 (66.7%)	0.195	1.50	0.81	2.77
CS	35 (25.0%)	105 (75.0%)				

DISCUSSION

This study analyzed the outcome of breech pregnancies both in singleton and multiple breech pregnancies from a tertiary institution in a low-income country. Caesarean delivery accounted for more than half the mode of delivery with vaginal delivery significantly associated with stillbirths and this is consistent with the findings of Obuna et al.[1.]

The prevalence of breech delivery during the study period was 11.9% which is higher than the general 3-4% at term traditionally reported. [6] This is similarly higher than prevalence rates of 1.7-4.5% from other parts of Nigeria[4,7] 3.4% from Ethiopia, [9] 4.2% from India[10], and 4.6% in England.[11] This high prevalence could be explained by the fact that both singleton and twin gestation with term or preterm breech deliveries were included in this study. The prevalence of breech was reported to be higher at less than 36 weeks gestational age, with 7% at 32 weeks, 25% at 28 weeks or less, and 3-4% at term.[6] The higher prevalence we found could be due to our study's mean gestational age of 35 weeks.

The mean age of the parturients was like the mean age reported in two southeastern Nigerian studies [1,13] but contrasts with reports from the Indian study that reported a mean age of 23.35 ± 3.6 years.[14] Majority of the parturients in this study were multiparous, which was similarly reported by Gaikwad.[14] This is likely because multiparity is associated with abdominal laxity that tends to favour malpresentation. However, this differs from a report by Mandal in India that found breech delivery to be commoner in the nulliparous, likely explained by the fact that most of the women they studied were younger with a mean age of 22 years.[15]

Most of the deliveries were by caesarean section, similar to the delivery mode reported from Nigeria and Ethiopia.[4,12,16,17.] However, the commonest mode of delivery was by the vaginal route from Tunau in another part of Nigeria[7], and Prabhoo from India.[10] The high Caesarean rate in this study could be explained by the fact that 40% of the patients were twin gestations with additional (30-40%) increased risk for emergency caesarean section even with pre-planned vaginal delivery.[18] According to evidence-based practice, planned caesarean section leads to a small reduction in perinatal mortality compared with planned vaginal breech delivery.[19] This coupled with fading competence in conducting an assisted vaginal breech delivery may have led to many obstetricians opting to offer caesarean section for breech presentation in a cohort that may have likely benefited from an assisted vaginal breech delivery. Our study revealed a significantly increased risk for stillbirth in vaginal breech deliveries compared to caesarean breech

deliveries, which was like the findings by other researchers.[1,9,10,13,15.]

Birth asphyxia (Apgar < 7 at 5th minute) was significantly associated with vaginal breech deliveries, which was similarly reported by Obuna[1], and other authors [7,10,13,14,20]. This can be explained by the lack of quality intrapartum care and lack of skills in conducting assisted vaginal delivery by accoucheurs in unbooked women who do not have a planned mode of delivery.

CONCLUSION

The prevalence of breech delivery was high with an associated increased risk of birth asphyxia in babies delivered via the vaginal route.

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Conflicting Interest (If present, give more details): None.

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