

## Outcome of breech deliveries in Aminu Kano Teaching Hospital, Kano State, Nigeria: A 2-year study

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### Abstract

Breech presentation is defined as polar alignment of fetus in which the fetal buttocks or feet present at the maternal pelvic inlet. Breech is the most common malpresentation in pregnancy, incidence is high before term but occur in 3-4% of term pregnancies. There is increased perinatal morbidity and mortality with breech presentation which has been linked to the prematurity, birth asphyxia due to cord accidents, congenital abnormalities, birth trauma and mode of delivery. This study was aimed at determining the incidence and outcome of breech deliveries at Aminu Kano Teaching Hospital, Nigeria. It was a retrospective analysis of breech deliveries at Aminu Kano Teaching Hospital over a 2-year period. Information was obtained from the labor ward register, theatre register and the case notes of the mothers. There were 6658 deliveries during the period of the study, out of which 154 had breech deliveries. The incidence of breech deliveries during the period under study was 2.31%. The age of the patients ranged from 17-45 years. Parity ranged between 0-11. There were more breech deliveries in the multipara (59.5%) than in primigravidae (14.9%) and primipara (25.6%). However, there was no significant difference in the perinatal outcome between the groups ( $P=0.054$ ). Deliveries were mostly through caesarean section (62%), while 38% were through assisted vaginal breech. There were 113 live births and 8 still births. This study has shown that the incidence of breech is slightly lower than in many studies, and breech deliveries were mostly unplanned and more among multiparae. The neonatal outcomes in the planned breech deliveries were excellent. Birth asphyxia and stillborn were found more in the unplanned and unbooked cases with breech.

### Introduction

Breech presentation is defined as polar alignment of fetus in which the fetal buttocks or feet present at the maternal pelvic inlet.<sup>1-4</sup> Three types of Breech Presentations are recognized, frank, flexed and footling.<sup>1-5</sup> Breech is the most common malpresentation in pregnancy, incidence is high before term but occur in 3-4% of term pregnancies.<sup>1-5</sup> Most cases of persistent Breech presentation are idiopathic, however there are predisposing factors; uterine abnormalities, uterine fibroids, placenta praevia, multiple pregnancies, prematurity, contracted pelvis, high parity, oligo and polyhydramnios, maternal smoking, IUGR, previous breech delivery, maternal drug and alcohol abuse, anticonvulsants rarely congenital malformation.<sup>1-3</sup> These etiologic risk factors are only identifiable only in 7-15% of breech presentations.<sup>3,6</sup> It is now thought that the majority of breech presentations have genetic predisposition without any anatomical cause.<sup>5</sup>

Increased perinatal morbidity and mortality with breech presentation is well recognized, this has been linked to the prematurity, birth asphyxia due to cord accidents, congenital abnormalities, birth trauma and mode of delivery. Even after term breech presentation generate controversies concerning the best mode of delivery especially in the tropics.<sup>7-10</sup> It is therefore very pertinent to carefully choose and plan the route of delivery during antenatal care or early labour.<sup>11</sup> This is even more important in our environment where there is strong aversion to caesarean section.<sup>8,12</sup> In most developing countries, many women with breech presentation present in labor without any prior form of antenatal care and so are not diagnosed before the onset of labour.<sup>13</sup> Therefore, obstetricians in this region are faced with the challenge of not having enough time to plan for the best way to deliver the breech.<sup>10,14</sup> This and many other factors are important in the management of breech presentation and significantly may influence the reproductive outcome in this region.<sup>10,14,15</sup>

Breech delivery irrespective of the route is associated with maternal morbidity, perinatal morbidity and mortality.<sup>11</sup> The morbidity and mortality are generally reported higher with vaginal route especially when it is unplanned.<sup>16</sup>

Many procedures and techniques have been employed to improve perinatal outcome, which include routine caesarean section for all babies in breech presentation, ECV and knee-chest position.<sup>3,5,12,16</sup>

Term breech trial remains source of concern as it is reported to significantly

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increase the overall rate of caesarean section.<sup>17,18</sup> Therefore, external cephalic version which has been demonstrated to be associated with a significant reduction in the risk of caesarean section without any increased risk to the baby has been advocated.<sup>5,7,19-21</sup> It is recommended that all women with an uncomplicated breech pregnancy at term (37-42 weeks) should be offered ECV.<sup>7,22</sup> Other criteria to be fulfilled include the following; No identifiable obstetrics risk, the patient has to give consent, the breech should be Complete/frank breech, there should be a reassuring CTG, fetal head should not be engaged, ultrasound scan should be available and also facilities for emergency caesarean section should be in place. However external cephalic version is not popular in the tropics.<sup>23,24</sup>

### Objectives

This study was undertaken to determine incidence and outcome of breech deliveries at Aminu Kano Teaching Hospital.

### Materials and Methods

The study was carried out in the Obstetrics and Gynecology Department of Aminu Kano Teaching Hospital, Kano. It covered a period of 2 years from January 2015 to December 2016. This was a retrospective analysis of breech deliveries at

Aminu Kano Teaching Hospital. Information on sociodemographic variables of the mother, which included maternal age, ethnicity, parity and booking status were obtained. The neonatal variables which included sex, birth weight, Apgar score and neonatal outcome were extracted. Furthermore, number of fetuses and gestational age were obtained. This information was obtained from the labor ward register, theatre register and the case notes of the mothers (Table 1). Data obtained was analyzed using statistical package for the social sciences (SPSS) statistical software version 23. Descriptive statistics were used for categorical variables and chi-square test was used to test for significance. Level of significance was set at 5%.

## Results

There were 6658 deliveries during the period of the study, out of which 154 were breech deliveries. One hundred and twenty one out of 154 case files were retrieved and analyzed giving retrieval rate of 78.57%. The incidence of breech deliveries during the period under study was 2.31%.

The age of the patients ranged from 17-45 years. Parity ranged between 0-11 with a mode of multipara. There were more breech deliveries in the multipara (59.5%) than in primigravidae (14.9%) and primipara (25.6%). However, there was no significant difference in the perinatal outcome between the groups ( $P=0.054$ ). Deliveries were mostly through caesarean section (62%), while 38% were through assisted vaginal breech. Fetal weights ranged 1100-4500g with a mean  $2883\pm 648$  g. Fetal weight was found to be higher among the caesarean section group ( $P=0.012$ ).

More than half of the patients were booked (59.5%). Majority of the deliveries were not planned 100 (82.6%), only 21 patients have planned deliveries among the patients studied. Accoucheurs were mostly senior registrars (61.2%) followed by midwives (20.7%), then registrars (15.7%) and consultants (2.5%). Caesarean section was the major mode of delivery of the patients with breech presentation during this period (62%) followed by assisted breech delivery (38%) (Table 2).

Fifty seven percent of the fetuses were males and 43% were females. Live neonates were 113 and stillbirth were 8. Term breech deliveries accounted for 86% of all breech deliveries during the study period while preterm breech deliveries accounted for 14%. Majority of the deliveries were of singleton breech (90.1%) while multiple breech deliveries accounted for only 9.9%

of the deliveries (Table 3).

Breech presentations were seen more in the multiparae (59.5%), then primigravidae (25.6%) and the primiparae followed (14.9%). The frank breech was 71.7%, complete breech was 17.9% and footling breech constitute 10.4% (Table 4).

There was no statistically significant association in term of five-minute APGAR score between different types of breech presentation in this study ( $P=0.38$ ). No birth asphyxia was seen in the planned delivery group compared to the unplanned delivery group where 17% of the babies were asphyxiated ( $P=0.04$ ). There was no difference in term of 5 minutes Apgar score between the babies delivered by different cadre of health workers ( $P=0.14$ ). No difference in 5-minute Apgar score between the babies delivered by different mode of delivery ( $P=0.06$ ). Term breech babies had better 5-minute Apgar score compared to preterm babies ( $P<0.05$ ) (Table 5).

## Discussion

The prevalence of breech delivery in this study was found to be 2.31% this was similar to what was reported in other studies.<sup>4,8,25</sup> It was lower than 3.4% reported in Owerri Imo State and 4.45% reported in Abakaliki Ebonyi State.<sup>11,13</sup> Studies have shown that there are higher perinatal morbidity and mortality associated with breech delivery irrespective of the mode of delivery when compared with vertex delivery.<sup>16</sup> This was however apparent in unplanned breech deliveries.<sup>8,13</sup> There is preponderance of breech presentation among multiparous women when compared to primiparous and primigravidae this was similar to other studies.<sup>3,5,8,13,14</sup> It is thought that high parity predisposes to fetal breech presentation due to laxity of the abdominal muscles.<sup>3</sup> Contrary to this, there was higher incidence of breech deliveries among primigravidae in Sokoto as reported by Tunau *et al.*<sup>25</sup> Extended breech was predominant type of during the study period accounting for 76 (71.7%), followed by flexed breech 19 (17.9%) and then to least extent the footling breech 11 (10.4%) this pattern occurrence is similar to that found in other studies.<sup>13,14</sup> Caesarean Section rate in this study was found to be 62%, this was similar to the studies by Adeyemi *et al.*, Takai *et al.* and Reitberg *et al.*<sup>5,6,16</sup> However, it is contrary to the studies by Duke *et al.* and Tunau *et al.*, where caesarean section rates were 33.8% and 30.9% respectively.<sup>14,24</sup> The high rate of Caesarean section in this study may not be unconnected to the urgency for the need of delivery as most of the babies

**Table 1. Sociodemographic characteristics (total = 121).**

	Frequency	Percentage
Age		
<= 19	4	3.3
20 – 24	36	29.8
25 – 29	29	24.0
30 – 34	23	19.0
35 – 39	22	18.2
40+	7	5.8
Tribe		
Hausa	94	77.7
Yoruba	6	5.0
Igbo	5	4.1
Others	16	13.2

**Table 2. Booking status, type of delivery, accoucheur and mode of delivery (total = 121).**

	Frequency	Percentage
Booking status		
Booked	72	59.5
Unbooked	49	40.5
Type of Delivery		
Planned	21	17.4
Unplanned	100	82.6
Accoucheur		
Midwife	25	20.7
Registrar	19	15.7
Snr Reg	74	61.2
Consultant	3	2.5
Mode of Delivery		
ABD	46	38.0
EMCS	55	45.5
ELCS	20	16.5

**Table 3. Fetal sex, fetal outcome, gestational age and number of fetuses (total = 121).**

	Frequency	Percentage
Fetal Sex		
Male	69	57.0
Female	52	43.0
Fetal outcome		
Livebirth	113	93.4
Stillbirth	8	6.6
Gestational Age		
Term	104	86.0
Preterm	17	14.0
Number of Fetuses		
Single	109	90.1
Multiple	12	9.9

**Table 4. Parity and type of breech in the patients studied (total = 121).**

	Frequency	Percentage
Parity		
Grandmultipara	27	22.3
Multiparara	45	37.2
Primigravida	31	25.6
Primiparara	18	14.9
Type of Breech		
Frank	86	71.1
Complete	22	18.1
Footling	13	10.8

**Table 5. Five-minute APGAR score compared with the type of breech, type of delivery, accoucheur, mode of delivery and gestational age.**

Parameters	Five Min APGAR		Total	X <sup>2</sup>	df	P value
	≤6	>6				
Type of breech				1.891	2	0.38
Frank	11	75	86			
Complete	3	19	22			
Footling	0	13	13			
Total	14	107	121			
Type of Delivery				4.1	1	0.04
Planned	0	21	21			
Unplanned	17	83	100			
Total	17	104	121			
Accoucheur				5.3	3	0.14
Midwife	7	18	25			
Registrar	2	17	19			
Snr Reg	8	66	74			
Consultant	0	3	3			
Mode of Delivery				5.6	2	0.06
ABD	10	36	46			
EMCS	7	48	55			
ELCS	0	20	20			
Total	17	104	121			
Gestational Age				17.4	2	<0.05
Term	9	95	104			
Preterm	8	9	17			
Total	17	104	121			

delivered via caesarean section were big babies compared to those delivered via assisted breech delivery ( $P=0.012$ ). This is similar in other studies conducted in Nigeria.<sup>8,11,14</sup> There was no neonatal asphyxia reported in the planned delivery arm compared to the unplanned delivery arm ( $P=0.04$ ), this may not be unconnected to their unbooked status and presentation as emergencies. Type of accoucheur was not found to be significant in the outcome of breech pregnancies in this study, this was contrary to what was found in Maiduguri where outcomes were favored by the seniority of the accoucheur.<sup>8</sup> Recently it was found that planned caesarean section for breech deliveries reduce perinatal morbidity and mortality significantly although maternal morbidity may be increased.<sup>5,11,13</sup> Despite large proportion of booked patients only 17.4% of them had planned breech delivery. There is room for planned assisted breech delivery in carefully selected patients where there are selection criteria to be applied antenatally, with good neonatal outcome and less maternal morbidity.<sup>19,26</sup> Moreover, there is strong aversion to caesarean section in this environment.<sup>13,25</sup>

## Conclusions

In conclusion, this study has shown that breech deliveries were mostly unplanned and were frequent among multiparae. The neonatal outcomes in the planned breech

deliveries were excellent. Significant number of women were unbooked, hence there was no plan for their delivery. The high caesarean section rate could be reduced by laying more emphasis on external cephalic version and also training and retraining of midwives and residents on assisted breech delivery on highly selected patients with minimal complications.

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