

Research Article

MATERNAL AND PERINATAL OUTCOMES OF BREECH DELIVERIES AT A NIGERIAN HOSPITAL

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Abstract

Breech presentation is the most common malpresentation of pregnancy associated with increased risk of adverse foeto-maternal outcome. The best mode of delivery of breech presentation has remained an area of controversy in obstetrics for years. The aim of this study was to determine the distribution, incidence, mode of delivery and outcome of breech deliveries in this centre. This was a descriptive retrospective study of breech deliveries at Federal Medical Centre, Yenagoa over a 3-year period. Data was obtained from the labour ward register, theatre register and the case notes and analyzed. There was a total of 2,263 deliveries during the study period, out of which one hundred and sixty four (164) were breech deliveries. The breech delivery rate for all gestational ages from this study was 7.2%. However the term breech delivery rate was 3.9%. Breech delivery was commoner amongst multiparous (60.4%) than in primiparous (30.8%) women and primigravidae (8.8%). The age of patients ranged from 18 – 46 years. Extended (Frank) breech delivery accounted for 56.6% of cases. There was no maternal mortality but the perinatal mortality rate was 182.3/1000 total births with about 17(58.6%) of these deaths diagnosed as Intrauterine fetal death on admission. 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. Planned breech deliveries had better neonatal outcomes and babies with birth asphyxia and those stillborn were more in the unplanned and unbooked cases with breech.

Keywords: Breech, Caesarean section, Perinatal.

INTRODUCTION

Breech presentation is defined as a polar alignment of fetus in which the fetal buttock or feet present at the maternal pelvic inlet (Ahmed *et al.*, 2018). Breech delivery is a high risk pregnancy with adverse fetal outcomes during pregnancy and labour (Kothapally *et al.*, 2017). Three types of breech presentations are recognized, frank (extended), complete (flexed), and incomplete (footling) (Adebayo *et al.*, 2019; Duke *et al.*, 2014). Breech is the commonest form of fetal malpresentation, its incidence varies inversely with gestational age (Adebayo *et al.*, 2019) ranging from 14 – 20 percent at 28 gestation, 6 – 8 percent at 34 weeks and 3 – 4 percent at term. (Duke *et al.*, 2014). It has been demonstrated severally that, compared to cephalic presentation the fetus presenting by breech suffers greater perinatal morbidity and mortality with perinatal mortality ranging from 5 – 11 % (Adebayo *et al.*, 2019). Breech presentation may occur in the absence of any known predisposing factor, however, factors associated with breech presentation include nulliparity, advanced maternal age, prematurity, previous breech delivery, contracted pelvis, uterine anomaly, placenta praevia, oligo or polyhydramnios, multiple pregnancy, pelvic tumours, short umbilical cord, fetal anomaly and intrauterine fetal death (Bassey *et al.*, 2015). However, these etiologic risk factors are identifiable only in 7 – 15% of breech presentations, so in view of the above, it is now thought that the majority of breech presentation have genetic predisposition without any anatomical cause (Duke *et al.*, 2014). The results of “Term Breech Trial (TBT)” showed that the planned caesarean delivery for singleton term breech presentation is associated with lower perinatal mortality and

perinatal morbidity in comparison to planned vaginal delivery (Bassey *et al.*, 2015; Basnet *et al.*, 2020), whereas the maternal outcome was similar in both groups (Bassey *et al.*, 2015). The impact of the implementation of the term breech trial seems not to be noticed in developing and low resource settings, with greater aversion for caesarean section and tendency for large family (Adebayo *et al.*, 2019). The latter factor is important as Caesarean section in addition to other morbidities also limits the number of pregnancy a woman can be exposed to family (Adebayo *et al.*, 2019). Regarding this, American College of Obstetricians and Gynaecologists in 2016 as well as the Royal College of Obstetricians and Gynaecologists in 2017 recommend that the risks and benefits of both modes of delivery should be discussed with the patients. This study was undertaken to determine the incidence and outcome of breech deliveries at Federal Medical Centre, Yenagoa.

METHODOLOGY

This was a retrospective descriptive study carried out in the department of Obstetrics and Gynaecology, Federal Medical Centre Yenagoa, Bayelsa Nigeria. The hospital is located in the Niger-Delta region of Nigeria and serves as a referral tertiary health care facility. Parturients who had breech deliveries between January 2018 and December 2020, a three year period were reviewed. Information on socio-demographic variables of the mothers, which included maternal age, parity and booking status as well as the neonatal variables which included sex, birth weight, Apgar score and neonatal outcome were obtained. Also, number of fetuses and gestational age were extracted. All these information was gathered from the labour ward register, theatre register and the case notes of the 159 mothers during the period under review and entered into a predesigned proforma. Ethical approval was duly obtained from the hospital ethical committee of the hospital.

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Data analysis

The data obtained were analyzed manually using a tally numeration system. The results were summarized using frequencies, percentages, tables and charts for categorical variables.

RESULTS

There were 2,263 deliveries during the study period out of which one hundred and sixty four (164) were breech deliveries. One hundred and fifty nine (159) out of 164 case files were retrieved and analyzed giving retrieval rate of 96.9%. The breech delivery rate for all gestational ages from this study was 7.2%. However the term breech delivery rate was 3.9%. The overall caesarean section rate in the same study period was 42.4% while the caesarean section rate for breech presentation was 71.7%.

Socio-demographics and obstetric characteristics of the parturients

Table 1 showed that the age of the patients ranged from 18 - 46 years and most of the patients were within the ages of 30-39 years (54.7%) , followed by 20-29 years (36.5%) , 40 years (7.5%) and <20 years(1.3%). Parity ranged between 0 - 9 with more breech deliveries noted in the multipara (60.4%) than in primigravidae (8.8%) and primipara (30.8%). Majority of the patients, 88(55.3%) were unbooked while 71(44.7%) were booked. Term breech deliveries accounted for 56% of all breech deliveries during the study period while preterm breech deliveries accounted for 44%.

Table 1. Socio-demographics and obstetric characteristics of the parturients

Characteristics	Frequencies	Percentages (%)
Age of participants		
<20 years	2	1.3
20 - 29 years	58	36.5
30 - 39 years	87	54.7
≥ 40 years	12	7.5
Total	159	100
Parity		
Primigravida	14	8.8
Primipara	49	30.8
Multipara	96	60.4
Total	159	100
Booking Status		
Booked	71	44.7
Unbooked	88	55.3
Total	159	100
Gestational Age		
Preterm	70	44.0
Term	89	56.0
Total	159	100

Type of breech presentation in the parturients

Figure 1 shows that Frank breech delivery accounted for 56.6% (90), Complete Breech Delivery 40.9% (65) and Footling breech delivery 2.5 % (4).

Modes of delivery

Figure 2 depicts that caesarean section was the commonest mode of delivery for the patients with breech presentation during this period (71.7%) followed by assisted breech delivery (28.3%). About 95(59.7%) had emergency/urgent caesarean section.

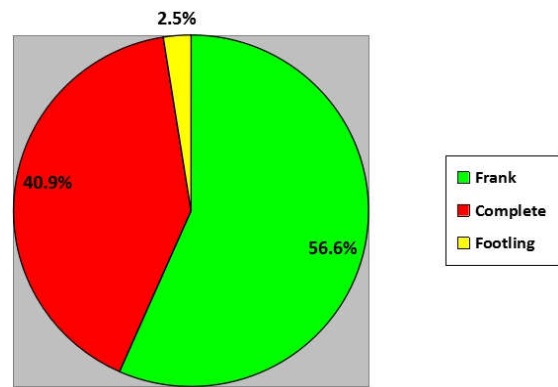


Figure 1. Types of breech presentation in the parturients



Figure 2. Mode of delivery

Type of delivery and cadre of accoucheur

Majority of the deliveries were not planned 132 (83%), only 27 (17%) patients had planned deliveries among the patients studied. Accoucheur were mostly senior registrars (57.2%) followed by consultants (30.2%), then midwives (8.8%) and registrars (3.8%) (Table 2).

Table 2. Type of delivery and cadre of accoucheur

Characteristics	Frequencies	Percentages (%)
Type of delivery		
Planned	27	17
Unplanned	132	83
Total	159	100
Accoucheur		
Midwife	14	8.8
Registrar	16	3.8
Senior Registrar	91	57.2
Consultant	48	30.2
Total	159	100

Fetal outcomes

Table 3 showed that babies with birth weight of <2.5kg accounted for about 41.5% of deliveries and were a little more than those with birth weight of 2.5 – 3.5kg (40.9%) , followed by babies weighing between 3.6 – 3.9kg with (8.8%) while those weighing ≥4kg accounted for about 8.8%. More than ¾ (62.3%) of the neonates had good APGAR scores of ≥7 and were not asphyxiated, 13.2%(21) had signs of mild asphyxia while 24.5%(39) were either moderately or severely asphyxiated. Majority of the deliveries were of singleton breech (76.7%) while multiple breech deliveries accounted for only 23.3% of the deliveries. Fifty six percent (56%) of the fetuses were males and 44% were females. Live neonates were

130(81.8%) and stillbirths were 29 (18.2%) with about 17 of these deaths diagnosed as Intrauterine fetal death on admission giving a perinatal mortality rate of 182.3/1000 total births. The proportion of SCBU admissions was 44%, largely due to prematurity, macrosomia and other perinatal morbidities.

Table 3. Fetal Outcomes

Characteristics	Frequencies	Percentages (%)
Birth Weight (Kg)		
<2.5	66	41.5
2.5 – 3.5	65	40.9
3.6 – 3.9	14	8.8
≥4	14	8.8
Total	159	100
5th Minute Apgar's Score		
0 – 4	39	24.5
5 – 6	21	13.2
+≥7	99	62.3
Total	100	100
Number of Fetuses		
Single	122	76.7
Multiple	37	23.3
Total	159	100
Sex of Fetus		
Male	89	56.0
Female	70	44.0
Total	159	100
Admission in SCBU		
Yes	70	44.0
No	89	56.0
Total	159	100

Fetomaternal outcomes

The Perinatal outcomes constituted Prematurity (34.6%), perinatal mortality (10.7%), fetal macrosomia (5.7%), respiratory distress syndrome (4.4%), intrauterine growth restriction (2.5%), meconium stained liquor (1.9%), hydrocephalus (0.6%) and No complication (39.6%). No obvious birth injuries were noted. Majority of the patients (88.6%) had no maternal complications, however, 4.4%(7) had Prelabour Rupture of Membranes(PROM), 3.8%(6) had Postpartum Haemorrhage, 1.9%(3) had Perineal Injuries and 1.3%(2) had Cord prolapsed. There was no maternal mortality (Table 4).

Table 4. Fetomaternal Outcomes

Complication	Frequencies	Percentages (%)
Perinatal Morbidity		
Birth Injuries	0	0
Prematurity	55	34.6
IUGR	4	2.5
RDS	7	4.4
Hydrocephalus	1	1
Macrosomia	9	9
Meconium Stained Liquor	3	3
Death	17	17
No Complication	63	39.6
Total	159	100
Maternal Complication		
PROM	7	4.4
PPH	6	3.8
Perineal Injuries	3	1.9
Cord Prolapse	2	1.3
No complications	141	88.6
Total	159	100

DISCUSSION

The overall incidence of breech delivery in this study was 7.2% and a term rate of 3.9%. The higher incidence for breech delivery when all gestational ages are considered is not unexpected as the incidence of breech presentation is much higher at lower gestational age. However, the incidence of breech delivery for all gestation is similar to a rate of 7.8% from Ekiti (Adebayo *et al.*, 2019) but that of term breech delivery in this study is higher than term rates of 2.31% from Kano (Ahmed *et al.*, 2018) and 3.4% from Owerri (Duke *et al.*, 2014) but within the range of 3 – 4% that is commonly quoted (Hayman, 2010). Therefore, the incidence of breech presentation remains fairly constant over the years. Majority of the parturients (54.7%) were within the ages of 30 to 39 years and this corresponds with the findings by Adekanle *et al* in which most of the subjects were in the age range of 30 years and above (Adekanle *et al.*, 2013). The skeletal muscle mass and tone of the myometrium which have been found to play a significant role in foetal presentation declines with maternal age (Adebayo *et al.*, 2019). Most of the women that had breech deliveries were not booked in this facility, the 55.3% rate found in this study is similar to those of Ekiti (Adebayo *et al.*, 2019) (58.4%) and Osun (Adekanle *et al.*, 2013) (56.5%). There is preponderance of breech delivery among multiparous when compared to the primiparous group in this study. This is in consonance with demographic pattern of breech presentation in the developing countries and most parts of the world (Cunningham, 2010). It is thought that high parity predisposes to fetal breech presentation due to laxity of the abdominal muscles (Cunningham, 2010). Extended (or frank) breech was the predominant type during the study period accounting for 90 (56.6%), followed by flexed (complete) breech 65 (40.9%) while footling breech had the least occurrence of 4 (2.5%). This pattern of occurrence is similar to that found in other studies (Duke *et al.*, 2014; Hayman, 2010).

The overall caesarean section rate for breech presentation in this study was 71.7% which is comparable with reports from other studies e.g. Ekiti (72.9%) showing an increase in the rate of caesarean section among breech presentations compared to the general delivery. The commonest mode of delivery for breech presentation is Caesarean Section. This finding may not be unrelated to the effect of the term breech trial which has significantly skewed the decision of breech delivery toward caesarean section (Impey *et al.*, 2017). Also, the high proportion of unbooked patients in this study may not give adequate room for counselling, planning and decision - making with some presenting in labour and in such situation the option of caesarean section with perceived lower risk to the fetus is often taken, especially where the requisite skills for vaginal breech delivery is lacking. Despite the large proportion of booked patients only 17% of them had planned breech delivery and this was similar to the study done in Kano (Ahmed *et al.*, 2018). Recently it was found that planned caesarean section for breech presentations reduce perinatal morbidity and mortality significantly although maternal morbidity may be increased, moreover, there is strong aversion to caesarean section in this environment (Duke *et al.*, 2014). Type of accoucheur was not found to contribute to the outcome of breech pregnancies in this study, this was contrary to what was found in Maiduguri where outcomes were favoured by the seniority of the accoucheur (Takai *et al.*, 2016). The low birth weight demonstrated in this study was because a good number of the neonates were delivered preterm. Nearly all neonates

delivered through planned elective caesarean delivery had good 5th minute Apgar's scores. Most of the infants with severe asphyxia were from either preterm delivery, unbooked mothers who had unplanned vaginal delivery or emergency caesarean section. The finding of higher number of male babies in breech presentation in this study is contrary to that of Ekiti (Adebayo *et al.*, 2019) which showed a higher number of female babies. Prematurity was the main cause of SCBU admission and majority of term babies delivered by caesarean section did not have any delivery related complications. The perinatal mortality rate of 182.3/1000 observed in this study was lower than that of Maiduguri (Jibrin and Isah, 2013) but higher than that of PortHarcourt (Bassey *et al.*, 2015). Majority of the perinatal mortality in this study were from intrauterine fetal death and not aggravated by the delivery process. Most of the patients that had breech deliveries did not come down with fetomaternal complications, however, prematurity was the commonest perinatal complication followed by macrosomia and respiratory distress syndrome while maternal complications of premature rupture of membranes, perineal injuries, postpartum haemorrhage, and cord prolapsed were few.

Conclusion

In conclusion, the findings in this study has shown that breech deliveries were mostly amongst multiparas with majority being unplanned due to their unbooked status. Planned elective Caesarean section gives a better neonatal outcome especially for Term singleton breech fetus, thus agreeing with the Term Breech Trial. The commonest mode of delivery for breech presentation was by Caesarean Section and this high caesarean section rate could be reduced by laying more emphasis on external cephalic version in this centre and also training and retraining of midwives and residents on assisted breech delivery to keep alive these dying skills in well selected patients with minimal risks.

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