JOURNAL OF THE MEDICAL WOMEN'S ASSOCIATION OF NIGERIA

Volume 1, Issue 1, 2026 JMWAN Special Issue on Reducing Maternal Mortality

Original Article

Access this article online

Quick Response Code:

Website: www.jmwan.org.ng

https://doi.org/10.71526/jmwan.v10i3.105

Audit of Singleton Breech Deliveries at Adeoyo Maternity Hospital: A 5-Year Review

Rashidat Olajumoke Adeoti[1],Olanlege Shakirah Olayinka[1], Lasisi Adewale Jamiyu[2] and Oladipo Oladapo Aremu[1]

[1]Department of Obstetrics and Gynecology, Ring Road State Hospital, Ibadan, Oyo State, Nigeria

[2]Department of Obstetrics and Gynecology, Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State, Nigeria

Corresponding Author:

Rashidat Olajumoke Adeoti
Consultant Obstetrician and Gynecologist, Department of Obstetrics and Gynecology, Ring Road State Hospital, Ibadan, Oyo State, Nigeria
(Email: adeotiorj@.gmail.com)
Telephone: +234 8099193726
ORCID NUMBER: https://orcid.org/0009-0001-6726-3281

Abstract

Introduction: Breech presentation poses obstetric challenges, and the optimal mode of delivery remains debated. Most breech deliveries are unplanned and occur in advanced labour, contributing to adverse perinatal outcomes. This study assessed the incidence, mode of delivery, and outcomes of singleton breech deliveries at Adeoyo Maternity Teaching Hospital (AMTH), southwest Nigeria

Methods: A retrospective review of all singleton breech deliveries at AMTH from January 2012 to December 2016 was conducted. Data on maternal age, parity, booking status and Apgar scores extracted from labour ward records. Analysis was performed using SPSS version 20.

Results: Of 17,339 deliveries during the study period, 272 were singleton breech, yielding an incidence of 1.6%. Maternal ages ranged 16–45 years, with 57.7% aged 25–34 years. The incidence of breech delivery increased with parity, being 42.3% among nulliparous and 50% among women with 2–4 children. Most patients (71%) were booked. Vaginal deliveries accounted for 79%, and caesarean section for 21%. There were 220 (80.9%) live births, 33 (12.1%) fresh stillbirths, and 19 (7%) macerated stillbirths. Apgar scores ≥7 at 5 minutes were more frequent following caesarean delivery.

Conclusion: Singleton breech delivery was uncommon, with vaginal delivery predominating. Caesarean section was associated with better immediate neonatal outcomes, highlighting the importance of careful case selection and skilled attendance in breech deliveries to optimize perinatal outcomes.

Keywords: Accoucheur, Apgar score, breech delivery, singleton breech.

Print ISSN: 3043-4742 Online ISSN: 3043-4750

Background

Breech presentation remains a significant obstetric concern, and the safest mode of delivery continues to be debated.[1] It occurs when the foetal buttocks or lower extremities occupy the lower uterine segment, with the cephalic pole in the uterine fundus,[2] and is the most common form of malpresentation.[3] Breech presentations are classified by foetal attitude: frank breech (≈65% of term cases), complete breech (≈10%), and footling breech (≈25%).[3,4] The incidence decreases with gestational age, from 20% at 28 weeks to 3–4% at term, though regional rates range from 1.4%[5] to 5.7%.[6] Risk factors include high parity, uterine anomalies, placenta previa, maternal smoking, foetal malformations, multiple gestations, prematurity, a contracted pelvis, and abnormal amniotic fluid volumes.[7]

Management options include external cephalic version (ECV), assisted vaginal breech delivery, breech extraction, and caesarean section.[8] The Term Breech Trial demonstrated lower perinatal morbidity and mortality with planned caesarean section, though many caesareans are needed to prevent a single adverse outcome.[8-10] Maternal short- and long-term risks, particularly in low-resource settings, must also be considered.[9-12] Nevertheless, evidence shows that planned vaginal delivery of a singleton breech foetus can be safe under strict selection criteria, including gestational age ≥34 weeks, frank breech, estimated foetal weight 2000–3500 g, well-flexed foetal attitude, adequate pelvis, multiparity, absence of maternal or foetal indications for caesarean, and skilled accoucheur.[3,7,16,17] ECV can further reduce term breech and caesarean deliveries, though it is underutilised in many centres.[3,7,18,19]

Method

Study Area

This study aimed to determine the incidence, mode of delivery, and outcomes of singleton breech deliveries at Adeoyo Maternity Teaching Hospital (AMTH), a secondary health facility. Most previous studies were conducted in tertiary hospitals, and no local guidelines exist at AMTH. Findings from this study will allow comparison with tertiary centres and support development of a protocol for safe breech management.

Study Design

This retrospective study reviewed all singleton breech deliveries at Adeoyo Maternity Hospital (AMH), a secondary health facility in southwestern Nigeria, from January 2012 to December 2016. Labour ward and theatre records were examined, and data collected included maternal age, parity, booking status, mode of delivery, and indication for caesarean section. Neonatal variables included sex, Apgar scores, and immediate outcomes.

Inclusion Criteria

Inclusion criteria were singleton breech deliveries (preterm: 28–36 weeks; term: ≥37 weeks).

Exclusion Criteria

Exclusion criteria were multiple gestations, gross congenital malformations, and incomplete records. A low Apgar score was defined as <7 at 5 minutes.

Print ISSN: 3043-4742 Online ISSN: 3043-4750

Data Analysis

Data were analysed using SPSS version 20 (IBM SPSS Statistics 20). Descriptive statistics summarised categorical variables, and associations between mode of delivery and Apgar scores were assessed using chi-square tests. Statistical significance was set at $p < 0.05$.

Ethical Consideration

Ethical approval was obtained from the Institutional Research Ethics Committee. At the facility, patients with persistent breech presentation detected during the antenatal period were counselled for elective caesarean section, whereas the most senior doctor on duty managed those presenting in advanced labour according to clinical assessment.

Results

During the study period, there were 272 singleton breech deliveries out of 17,339 total deliveries, giving an incidence of 1.6%. Vaginal delivery was the predominant mode of breech delivery, accounting for 215 (79%) cases, while caesarean section was performed in 57 (21%) cases.

Maternal demographic and reproductive characteristics are summarised in Table 1. Maternal age ranged from 16 to 45 years, with a mean of 30.3 ± 5.57 years. The majority of patients, 157 (57.7%), were aged 25–34 years. Breech presentation was more common among multiparous women: 42.3% among nulliparous women, 50% in women with 2–4 previous deliveries, and 7.7% in women with parity ≥5. Most patients, 193 (71%), were booked, and the majority of breech deliveries, 217 (79.8%), occurred at term.

Neonatal outcomes are shown in Table 2. Of the infants delivered via breech, 137 (50.4%) were female and 135 (49.6%) were male. There were 220 (80.9%) live births and 52 (19.1%) perinatal deaths, comprising 33 (12.1%) fresh stillbirths and 19 (7%) macerated stillbirths. Among live births, 80 (36%) had a 5-minute Apgar score <7, while 140 (64%) had a score ≥7. During the study period, there were 777 perinatal deaths overall, with breech deliveries accounting for 52 (6.7%).

Mode of delivery is presented in Table 3. Vaginal delivery was the most frequent, occurring in 215 (79%) cases. Caesarean section was performed in 57 (21%) cases, of which 46 (16.9%) were elective and 11 (4%) were emergency procedures.

The association between mode of delivery and neonatal outcome is shown in Table 4. Neonates delivered via caesarean section had significantly better 5-minute Apgar scores (≥7) compared with those delivered vaginally, and this difference was statistically significant ($p = 0.006$).

Print ISSN: 3043-4742 Online ISSN: 3043-4750

Table 1: Sociodemographic and Reproductive Characteristics of the Patients

Characteristics	Frequency (n=272)	Percentages (%)
Age (years)		
15-24	46	16.9
25-34	157	57.7
≥35	69	25.4
Parity		
0-1	115	42.3
2-4	136	50
≥5	29	7.7
Booking status		
Booked	193	71
Unbooked	79	29
GA at delivery (weeks)		
28-36	55	20.2
≥ 37	217	79.8

GA= Gestational age

Table 2: Perinatal outcome following breech delivery

Characteristics	Frequency (n=272)	Percentages (%)
Sex		
Male	135	49.6
Female	137	50.4
Outcome of fetus		
Live	220	80.9
Apgar score <7 at 5min	80	36
Apgar score ≥7 at 5min		
Perinatal death	140	64
Fresh stillbirths	52	19.1
Macerated stillbirths	33	12.1
	19	7.0

Print ISSN: 3043-4742 Online ISSN: 3043-4750

Table 3: Mode of delivery of the babies

Mode of delivery	Frequency (n=272)	Percentages (%)
Vaginal delivery	215	79
Elective C-section	46	16.9
Emergency C-section	11	4.0

Table 4: Compare 5-min Apgar score by mode of delivery

Parameters	5-min Apgar Scores		Total (220)	p-value
	<6	≥7		
Type of delivery				0.0006
Vaginal	**70**	**98**	168	
CS	**8**	**44**	52	
Total	**78**	**142**	220	

Discussion

The incidence of breech presentation decreases with increasing gestational age, with 3–4% reported at term in most literature. In this study, the incidence of singleton breech delivery was 1.6%, while term breech deliveries accounted for 1.3%. These findings are comparable to those of Takai et al. in Kano,[20] Olatunji et al. in Sagamu [21], and Gaikwad et al. in India,[22] but lower than the 3.4% reported by Duke et al. in Owerri,[23] 2.6–3% observed in other parts of southern Nigeria,[10,24,25] and the general 3–4% cited in literature. This variation may be due to differences in study design, including the retrospective nature of this study, strict inclusion/exclusion criteria (e.g., exclusion of multiple gestations), and incomplete documentation for women delivering prior to hospital arrival. Additionally, some institutions routinely perform external cephalic version near term, a practice not routinely done at this facility.

Most women in this study (57.7%) were aged 25–34 years, consistent with findings in Sagamu [21] and Maiduguri,[20] reflecting the peak reproductive age in Nigeria. The incidence of breech presentation was higher among multiparous women, similar to reports from Kano,[20] Owerri,[23] and Ido Ekiti.[26] This may be attributed to increase uterine and abdominal wall laxity, allowing greater foetal mobility, as well as multiparity-associated conditions such as low-lying placenta or placenta previa.

Vaginal delivery was the predominant mode, accounting for 79% of breech births, while caesarean section accounted for 20.9%. This aligns with reports from Malaysia [27] and

Print ISSN: 3043-4742 Online ISSN: 3043-4750

eastern Nigeria,[24] but is lower than studies from Borno[20] and Ile-Ife,[28] where caesarean delivery predominated. The higher rate of successful vaginal delivery in this study may be due to inclusion of preterm breech infants, who are smaller and more likely to be delivered vaginally, and the presence of skilled midwives and doctors attending deliveries in advanced labor. Additionally, many multiparous women with previously adequate pelvic dimensions likely contributed to the high vaginal delivery success rate.

Neonates delivered via caesarean section had significantly better outcomes ($p = 0.0006$), likely due to reduced birth trauma and avoidance of difficult manoeuvres required in vaginal breech delivery. Caesarean sections are typically planned and performed in a controlled environment, minimizing foetal stress and reducing the risk of birth asphyxia and complications associated with instrumental delivery of the after-coming head.

Conclusion

While caesarean section remains the safest option for selected cases of breech presentation, skilled attendance at vaginal breech deliveries can achieve favourable outcomes, especially in multiparous women and preterm infants. The study highlights the need for structured protocols to guide management of breech presentations, including criteria for elective caesarean section, training of healthcare providers in safe vaginal breech delivery, and consideration of external cephalic version where feasible. Implementing these measures could optimize perinatal outcomes while minimizing unnecessary caesarean sections in resource-limited environments

References

1. Tunau K, Ahmed Y. Breech deliveries in Usmanu Danfodiyo University Teaching Hospital Sokoto, Northwestern Nigeria: a 10-year review. Sahel Med J. 2013;16:52-5.
2. Kish K. Malpresentation and cord prolapse. In: DeCherney AH, Nathan L, Laufer N, Roman AS, editors. Current Diagnosis and Treatment. New York: McGraw-Hill; 2013. p. 317-33.
3. Dutta DC. Malposition, malpresentation and cord prolapse. In: Konar H, editor. Textbook of Obstetrics. Kolkata: New Central Book Agency (P) Ltd; 2011. p. 374-98.
4. Jido TA, Oubu JAM. Abnormal presentation. In: Agboola A, editor. Textbook of Obstetrics and Gynaecology for Medical Students. 2nd ed. Heinemann Educational Books (Nigeria) Plc; 2006. p. 417-22.
5. Abasiattai AM, Bassey EA, Etuk SJ, Udoma EJ, Ekanem AD. Caesarean section in the management of singleton breech delivery in Calabar, Nigeria. Niger J Clin Pract. 2006;9:22-5.
6. Olayemi A, Odukogbe A, Omigbodun A, Odeyemi AS. Effect of caesarean section on the perinatal outcome in singleton breech

Print ISSN: 3043-4742 Online ISSN: 3043-4750

deliveries in Ibadan. Niger J Clin Pract. 2002;5:41-4.

7. John CT, Okpani AOU. Breech presentation. In: Kwawukume EY, Ekele BA, Danso KA, Emuveyan EE, editors. Comprehensive Obstetrics in the Tropics. 2nd ed. Accra: Assemblies of God Literature Centre Ltd; 2015. p. 202-6.
8. Arulkumaran S. Malpresentation, malposition, cephalopelvic disproportion and obstetric procedures. In: Edmond K, editor. Dewhurst's Textbook of Obstetrics and Gynaecology. 8th ed. Chichester, UK: Blackwell Science; 2007. p. 213-26.
9. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR, et al. Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomized multicenter trial. Lancet. 2000;356:1375-83.
10. Kahansim ML, Changkat LL, Eya AE. Breech deliveries in a secondary health-care facility in South-South Nigeria. Trop J Obstet Gynaecol. 2016;33:274-8.
11. Whyte H, Hannah ME, Saigal S, Hannah WJ, Hewson W, Amangkwah K, et al. Outcome of children at 2 years after planned caesarean versus planned vaginal birth for breech presentation at term: the international randomized Term Breech Trial. Am J Obstet Gynecol. 2004;191:864-71.
12. Visser GH, Rietberg CC, Oepkes D, Vandenbussche FP. Breech presentation: infant versus mother. Ned Tijdschr Geneeskd. 2005;149:2211-4.
13. Keirse MJ. Evidence-based childbirth only for breech babies? Birth. 2001;29:55-9.
14. Hauth JC, Cunningham FG. Vaginal breech delivery is still justified. Obstet Gynecol. 2002;99:1115-6.
15. Kotaska A. Inappropriate use of randomized trials to evaluate complex phenomena: case study of vaginal breech delivery. BMJ. 2004;329:1039-42.
16. Goffinet F, Carayol M, Foidart JM, Alexander S, Uzan S, Subtil D, et al. Is planned vaginal delivery for breech presentation at term still an option? Results of an observational prospective survey in France and Belgium. Am J Obstet Gynecol. 2006;194:1002-11.
17. Bako AU, Audu LI. Undiagnosed breech in Zaria, Nigeria. J Obstet Gynaecol. 2000;20:148-50.
18. Hofmeyr GJ, Kulier R. External cephalic version for breech presentation at term (Review). Chichester, UK: The Cochrane Library, John Wiley & Sons Ltd.; 2006.

Print ISSN: 3043-4742 Online ISSN: 3043-4750

19. Onah HE, Know PO. External cephalic version: a survey of current practice among Nigerian obstetricians. Trop J Obstet Gynaecol. 2004;21:24-6.

20. Takai IU, Kwayabura AS, Bukar M, Idrissa A, Obed JY. A 5-year retrospective review of singleton, term breech deliveries seen at a tertiary hospital in northern Nigeria. Arch Int Surg. 2016;6:7-11.

21. Olatunji AO, Sule-Odu AO. Term breech delivery at a university hospital in Nigeria. Niger Postgrad Med J. 1999;6:171-4.

22. Gaikwad S, Rokade R, Banerjee G. A study of maternal and perinatal outcome of breech presentation in vaginal and operative deliveries in a university hospital. MedPulse Int Med J. 2014;1:252-8.

23. Duke AO, Duke CO, Onyegbule OA, Amajuoyi CC, Madu PI, Enyinnaya EB. Outcome of single breech term deliveries at the Federal Medical Centre, Owerri, South Eastern Nigeria: a five-year review. Int J Res Med Sci. 2014;2:527-31.

24. Ojiyi EE, Dike EI, Okeudo C, Anolue FC, Uzoma O, Uzoma MJ, et al. Outcome of singleton term breech deliveries at a university teaching hospital in Eastern Nigeria. WebmedCent Obstet Gynaecol. 2011;2:WMC002543.

25. Pradeep MR, Shivanna L. Route of delivery for term breech presentation: comparative analysis. J Dent Med Sci. 2014;13:1-4.

26. Adeyemi AS, Adekanle DA, Afolabi AF, Fadero FF. Outcome of breech deliveries at a tertiary health institution in southwestern Nigeria. Niger Hosp Pract. 2011;7:3-7.

27. Nalliah S, Loh KY, Japaraj RP, Mukudan K. Is there a place for selective vaginal breech delivery in Malaysian hospitals: experiences from the Ipoh Hospital? J Matern Fetal Neonatal Med. 2009;22:129-36.

28. Shittu SA, Fasubaa OB, Dare FO, Ogunniyi OS. Five-year review of breech presentation at Ile-Ife, Nigeria. Trop J Obstet Gynaecol. 2001;18:36.

Print ISSN: 3043-4742 Online ISSN: 3043-4750