

**AFRICAN JOURNAL OF
MEDICINE
and medical sciences**

VOLUME 30, NUMBERS 1 & 2, MARCH AND JUNE 2001



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**ASSISTANT EDITOR:
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ISSN 1116 — 4077

A ten-year review of breech deliveries at Ibadan

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Summary

An audit of all breech deliveries at the University College Hospital, Ibadan over a ten-year period was done to determine the most important contributors to perinatal morbidity and mortality in breech deliveries. The data were obtained from the birth register and individual case records of patients seen at the hospital during the period. The audit revealed the occurrence of 263 breech deliveries out of a total 9,966 deliveries, giving an incidence of breech presentation of 2.6%. Breech presentation was commonest among primigravidae (32.0%) and decreased with increasing parity. Caesarean section was the commonest mode of delivery (46.1%) at term.

The fresh stillbirth rate was 10.5%. Low birthweight and prematurity were noted in 31.0% and 35.2%, respectively. The corrected perinatal mortality rates for pre-term and term breech were 450.0 per 1000 and 62.5 per 1000, respectively. Caesarean section appeared to confer an advantage over vaginal delivery at term. Low birth-weight and prematurity remain significant predisposing factors to the high perinatal morbidity and mortality attending breech births.

Keywords: *Breech, prematurity, term, vaginal delivery, Caesarean section, low birthweight, perinatal morbidity / mortality.*

Résumé

Une étude basée sur tous les accouchements de siège du Centre Hospitalier Universitaire d'Ibadan pendant une période de dix ans avait été faite pour déterminer la cause la plus importante de morbidité et de mortalité périnatale pendant un accouchement de siège.

Les informations avaient été obtenues à partir des registres et les différents cas individuels vus dans l'hôpital durant cette période. L'étude a montré un total de 263 cas d'accouchement de siège sur 9966 accouchements, ce qui donnait environ 2.6% de présentation de siège. La présentation de siège était beaucoup plus fréquente chez les primigestes (32%) et diminuait avec le nombre d'accouchements ou de parités. L'accouchement par césarienne était la méthode la plus commune d'accouchement (46.1%) à terme.

Le taux de mortalité était de 10,5%. Les sous-pesés et les prématurés faisaient 31,0% et 35,2% respectivement. Le taux de mortalité périnatale corrigé pour les prématurés et les sièges à terme étaient de 450 pour 1000 et 62,5 pour 1000 respectivement. L'accouchement par césarienne pourrait

avoir un avantage sur l'accouchement normal. L'accouchement des sous-poids et des prématurés restent les facteurs significatifs qui prédisposent à la forte mortalité et morbidité retrouvée chez les nouveau-nés en présentation de siège.

Introduction

Breech delivery is a major issue in contemporary obstetric practice on account of the attendant high morbidity and mortality.

Earlier reports have documented its significant contribution to the high perinatal mortality in our environment and the higher risks in comparison with cephalic presentation [1,2].

Interventions aimed at reducing perinatal morbidity and mortality have led to increasing Caesarean section rates [3]. Routine use of Caesarean section has been questioned by other investigators who contend that it has no advantages over vaginal delivery in terms of long-term outcome [4].

The issues are compounded by the fact that till date, there is no uniformity of opinion regarding certain aspects of management either ante-partum or intra-partum.

Although external cephalic version will reduce the incidence of breech presentation at term, its implementation is not universally practiced.

Concern has been expressed about the increasing Caesarean section rates for breech presentation as the younger generation of obstetricians acquire limited experience with conduct of vaginal breech delivery [5].

The optimal management of breech presentation will probably remain contentious for some time to come given the paucity of prospective randomised trials. Some of the available randomised trials suffer from inadequate numbers to allow sensible conclusions to be drawn [6,7].

The current review, albeit retrospective, documents experience with breech delivery in a Nigerian Teaching Hospital.

Materials and methods

The case notes of singleton breech deliveries at the University College Hospital, Ibadan between January 1, 1986 and December 31, 1995 were retrieved for analysis. Pregnancies less than 28 weeks gestation were excluded from this review. Otherwise, there were no maternal exclusion criteria.

The outcome of pregnancy was measured by the Apgar scores at 1 and 5 minutes. The other data documented included the parity, age, booking status, gestational age at delivery, mode of delivery, birth weight, duration of special care baby unit admission and first week deaths. Pregnancy duration of 37 weeks or more was considered term whereas delivery below 37 weeks was treated as pre term.

All booked mothers had had at least one ultrasound.

scan. All deliveries were conducted along standard protocol for breech presentation in the unit.

Assisted vaginal deliveries were attended by Consultants or Senior Registrars with Anaesthetists and Paediatricians in attendance. Caesarean sections were performed by Consultants or Senior Registrars. Babies were resuscitated by the Paediatricians who assessed Apgar scores.

The data were entered using dBase IV software and statistical analysis performed with SAS software. The students t-test was employed in comparing means where appropriate.

Results

A total of 9,966 deliveries were recorded during the study period, with total singleton breech births of 283.

The incidence of breech delivery was thus 2.6%. However, only 247 case notes contained sufficient information for detailed analysis and are presented in this report.

There was no live breech delivery before 28 weeks in the Labour Ward records during the study period. One hundred and fifty-four (62.3%) were booked; 93 (37.7%) were unbooked.

Table 1: Comparison of pregnancy outcome in term and pre-term breech delivery.

	Term n (%)	Pre-term n (%)
Total births	160 (64.8%)	87 (35.2%)
Live births	146 (91.25%)	60 (69.0%)
Fresh stillbirths	9 (5.6%)	17 (19.5%)
Macerated stillbirths	5 (3.1%)	10 (11.5%)
Early neonatal death	1 (0.6%)	10 (11.5%)
Perinatal mortality rate	102.7 per 1000	616.7 per 1000
Corrected perinatal mortality rate	62.5 per 1000	450.0 per 1000
Corrected overall perinatal mortality rate	179.6 per 1000	

Table 1 shows the comparison of outcome of pregnancy between pre-term and term deliveries. The perinatal mortality rate in premature delivery was seven times in excess of the perinatal mortality rate at term.

Overall, assisted breech delivery was the commonest mode of delivery, and the emergency Caesarean section rate was generally high: one hundred and twenty-eight (51.8%) were delivered by assisted breech delivery, 88 (35.6%) by emergency Caesarean section, 26 (10.5%) by elective Caesarean section, 4 (1.6%) by breech extraction and 1 (0.5%) by destructive operation.

Table 2: Mode of delivery in term and pre-term Breech delivery

	Term n(%)	Pre-term n(%)
Mode of delivery		
Emergency C/S	64, (40.0%)	24 (27.5%)
Elective C/S	25 (15.6%)	1 (1.2%)
Assisted Breech Delivery	69 (43.1%)	59 (67.8%)
Breech Extraction	2 (1.3%)	2 (2.3%)
Destructive operation	-	1 (1.2%)

C/S = Caesarean Section

Table 2 shows a comparison of the modes of delivery between term and pre-term deliveries. The majority (55.6%) of deliveries at term were by Caesarean section. There were 9 intra-partum deaths and one early neonatal death associated with term delivery: 5 were delivered by assisted breech delivery giving an incidence of 7.3% and 3 (including 2 congenital abnormalities) by emergency Caesarean section (true incidence 1.6%).

There was no perinatal death associated with elective Caesarean section. All but one of the cases of perinatal deaths at term were unbooked.

Table 3: Birthweight and pregnancy outcome in breech Delivery

Birthweight (kg)	Low * (≤6)		Good* FSB (≥7)		END	
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
< 2.5	69 (31.0%)	24 (75.0%)	31 (18.9%)	12 (57.1%)	2 (100.0%)	
2.5 – 3.5	130 (58.6%)	7 (21.9%)	115 (70.1%)	5 (23.8%)		
> 3.5	23 (10.4%)	1 (3.1%)	18 (11.0%)	4 (19.1%)		

*Apgar score at 5 minutes

Low birth weight was recorded in only a third (31.0%) of all deliveries (Table 3), but contributed to more than half (57.1%) of intrapartum and all early neonatal deaths (END).

Table 4 shows the parity distribution and perinatal deaths by parity. Breech delivery was most frequent in primigravidae accounting for 32% of cases.

Table 4: Parity distribution/Perinatal mortality in Breech Delivery

Parity	n(%)	OPM n(%)	PPM n(%)	TPM n(%)
0	79 (32.0%)	11(21.9%)	8(29.7%)	3 (30.0%)
1	41(16.6%)	8(19.2%)	7(25.9%)	1(10.0%)
2	42(17.0%)	7(19.2%)	4(14.8%)	3(30.0%)
3	31(12.5%)	4(15.4%)	4(14.8%)	-
4	18(7.3%)	2(3.9%)	2 (7.4%)	-
≥5	36(14.6%)	5(15.4%)	2(7.4%)	3(30.0%)
Total	247(100.0%)	37(100.0%)	27(100.0%)	10(100.0%)

OPM - Overall perinatal mortality

PPM - Preterm perinatal mortality

TPM - Term perinatal mortality

There were a total of 195 live births, 26 fresh still births (FSB), 15 macerated stillbirths (MSB) and 11 cases of early neonatal deaths. There were only 2 cases of congenital malformations. The overall fresh stillbirth rate, corrected overall perinatal mortality rate were 10.5% and 179.6 per 1000 live births respectively. Primigravidae and the

grandmultiparae contributed more frequently to perinatal deaths at term than other parity groups.

Table 5 shows the mean Apgar scores at 5 minutes and mean birthweights for the various modes of delivery at term.

Table 5: Mode of delivery versus mean Apgar score at 5 minutes and mean birth weight

Mode of delivery	Mean Apgar score at 5 minutes (+SD)	Mean birth weight (g) (+SD)
Assisted Breech Delivery	9.02 + 1.4	3.08 + 0.58
Emergency Caesarean section	9.14 + 1.2	3.01 + 0.52
Elective Caesarean Section	8.95 + 1.7	3.20 + 0.36

There were no significant differences in the Apgar scores at 5 minutes and the birth weights ($P > 0.05$) between assisted breech delivery and emergency Caesarean section; between assisted breech delivery and elective Caesarean section and between elective Caesarean section and emergency Caesarean section.

The Apgar score correlated well with gestational age showing an increasing trend with increasing gestational age. There was a higher incidence of low Apgar scores at term associated with assisted breech delivery (7.3%) compared with emergency Caesarean section (4.2%).

The two cases with obvious congenital malformations died in the early neonatal period.

Discussion

The higher risks attending breech births have been recognized since antiquity. Despite the great strides in medical science, breech delivery remains a difficult terrain for the obstetrician. The observed incidence of 2.6% is close to the range of 3-4% reported by other investigators [8,9,10].

The higher incidence of breech presentation recorded in primigravidae has been attributed to the tense abdominal wall which reduces the tendency to spontaneous version [11]. Higher rates of breech presentation in primigravidae was similarly reported by investigators in Norway [10] who contend that the trend is largely due to increasing proportions of births with low order and high maternal age for their own population. The demographic pattern for the third world is contrariwise.

The finding of higher rates in primigravidae is contrary to a higher incidence in grandmultiparae as previously observed [2].

The freshstillbirth rate in the present study (10.5%) is comparable with 9.9% [2] and 7.8% [12] reported by earlier authors; figures which are far in excess of stillbirth associated with cephalic presentation.

The incidence of obvious congenital malformation (0.8%) is rather low compared with 3.6% as previously reported [2]. We agree with the suggestion of underestimation being more probable because post-mortem examinations were not routinely performed on the dead babies [1].

The perinatal mortality rate of 179.6 per 1000 is excessive and comparable with 151 per 1000 [13], 152 per 1000 [2] and 156.03 per 1000 [12] quoted by authors in this environment.

Preterm deliveries contributed the greater share of

this perinatal mortality. The interaction of low birth weight and prematurity was implicated in the majority of perinatal deaths; pre-term fresh stillbirth rate was triple the term fresh stillbirth rate, early neonatal deaths in the pre-term infants were almost 20 times more than in term deliveries and fresh stillbirth rate and early neonatal deaths were more frequent in low birth weight infants. The extremes of parity appeared to be associated with higher perinatal mortality at term. These factors have been recognised as risk factors for perinatal mortality in breech delivery [1,2,12,13]. It is conceded that other complications of pregnancy may contribute to the excess perinatal mortality in pre-term infants. This was not addressed by the present study.

The overall Caesarean section rate (46.1%) in this study is higher than figures quoted by other authors in this environment [2,12]. An incidence of 7.3% for intrapartum / early neonatal death for vaginal delivery compared with 1.6% and 0% for emergency and elective Caesarean sections, respectively is excessive. The finding of higher incidence of low Apgar scores in term infants delivered vaginally compared with Caesarean section receives support from the work of Thorpe-Beeston *et al.* (1992) [9].

Even though the safest route of delivery for breech presentation at term remains controversial, the present study appears to confer an apparent advantage on Caesarean section. For term infants, Caesarean section may confer increased neonatal survival [14], however it has not been shown to offer any advantage over vaginal delivery in terms of long-term advantage [4].

Given our social setting, a policy of elective Caesarean delivery for breech presentation at term can only be counterproductive. With careful selection, we favour a policy of planned vaginal delivery with Caesarean section available. However, it may only be effective if all cases of breech presentation are promptly referred to secondary/tertiary levels of care.

Measures aimed at reducing the high perinatal mortality attending breech births will involve multiple approaches. The problems of management of premature and low birthweight infants may be overcome over time with improvement in neonatal services.

In the interim, the provision and utilization of good quality antenatal care will enhance the early detection and management of complications of pregnancy, thus reducing the incidence of premature labour and delivery.

External cephalic version as a tool for reducing breech presentation at term is not popular in our environment. External cephalic version at term will significantly reduce breech presentation, however many obstetricians in our environment are not trained for it thus limiting its application. We must consequently contend with managing breech deliveries.

There is a need to sensitize health workers on the risks inherent in breech delivery and encourage prompt referral to higher levels of care. Such centralization has been observed to justify successful breech delivery [15]. It will also enhance the training of junior obstetric staff, thus reversing the present declining trend in experience with conducting breech delivery.

Breech delivery thus remains hazardous due to the associated high fetal losses. Although the safest route of breech delivery at term remains unclear, the current study indicates a high rate of operative intervention.

It is expected that results of randomized controlled trials will be available shortly to provide reliable information about the benefits of vaginal and operative deliveries.

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