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Outcome of Singleton Term Breech Deliveries at a University Teaching Hospital in Eastern Nigeria

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Absract

Background: Breech deliveries have always been topical issues in obstetrics with high perinatal mortality and morbidity. A wide range of management policies have been instituted with the aim of reducing perinatal morbidity and mortality.

Aim: To determine the perinatal outcome in singleton breech deliveries.

Methods: This was a four-year retrospective study of all singleton term breech deliveries covering the period of January 2004 to December 2007. Information on socio-demographic characteristics of patients who had singleton breech deliveries and neonatal variables which included birth weight, apgar score, neonatal morbidity and mortality were obtained from labour ward records, records in special care baby unit and patients case notes retrieved from the Medical Records Department.

Results: There were 122 singleton breech deliveries out of a total 4741 deliveries. The prevalence of singleton term breech deliveries in the study period was 2.6%. Eighty eight (72.1%) of the breech deliveries were through the vaginal route, while 22 (18.0%) and 12 (9.8%) were through elective and emergency caesarean sections respectively. A total prenatal deaths of 32 (36.2%) were recorded. These included 8 (6.6%) intra-uterine deaths prior to admission, fresh still birth 15 (12.3%) and early neonatal death 7 (5.7%). Nineteen (61.9%) of the perinatal deaths occurred in unbooked mothers. The perinatal mortality rate was 250 in 1000 deliveries.

Conclusion: Breech delivery has always been associated with an increased perinatal mortality and morbidity than vertex delivery. There is need for proper enlightenment of the antenatal population on the importance of regular antenatal clinic attendance, in other to benefit maximally from either planned vaginal delivery or elective caesarean section.

Introduction

Breech deliveries have always been topical issues in obstetrics because of the very high perinatal mortality and morbidity. These are due to combination of trauma, birth asphyxia, prematurity and congenital malformation(1). In addition 19.4% of neonates undergoing term breech deliveries have long-term morbidity up to the school age irrespective of mode of delivery(2). Thus wide ranges of management policies have been instituted with the aim of reducing this perinatal morbidity and mortality, and hence improve the quality of life of these infants later in life.

External cephalic version (ECV) is one of such policies. Advocates of ECV believe that in the absence of a complicated breech presentation and other contraindications to vaginal delivery, a successful ECV leads to a more favourable presentation and reduces the incidence of breech deliveries, perinatal morbidity and mortality(3,4,5). This was the reason the Royal College of Obstetricians and Gynaecologists in 2001(6), recommended that all women with an uncomplicated breech presentation at term be offered an ECV. Those against ECV on the other hand argue that the incidence of breech deliveries and perinatal morbidity are not better in units where ECV are practiced when compared to units that avoid it(7). Moreover some successful ECV later revert to breech presentation. The recent use of ultrasound guidance in ECV has however improved its results(8).

In our environment where facilities for monitoring foetal activities are deficient, the detection of foetal compromise after ECV may be difficult. It is on this basis that most units in developing countries offer assisted vaginal deliveries for appropriate and well-selected cases and caesarean section for cases in which vaginal delivery may pose problems. The breech scoring system of Zatuchinis and Andros also provide useful guides for assessment of the likely outcome of vaginal breech delivery(9). The problem is further compounded in our environment, where only a small percentage of pregnant women assess the available antenatal services and many of them present to the hospital in advanced stages of labour or with intra-uterine foetal death(10). Hence only a few of them benefit from planned vaginal breech delivery (11).

This retrospective study was therefore, undertaken to determine the perinatal outcome and thus evaluate our present mode of management of breech presentations sswith a view to improving on our current management modalities and thus further reduce the fetal morbidity and mortality from breech deliveries.

Materials and Methods

This is a retrospective study of all singleton term breech deliveries conducted in the Obstetric unit over a 4-year period, from 1st January, 2004 to December 31st 2007.

Data were collected from the labour ward records, records in the Special Care Baby Unit (SCBU) and from the patients' case notes retrieved from the Medical records department of the Imo State University Teaching Hospital, Orlu, from its' practice centres (namely, Anara Health Centre and Ogbaku Comprehensive Health Centre)and from a nearby privately owned clinic;Mercy Christian Hospital and Maternity, Amaraku all in Orlu Senatorial District of Imo State, Nigeria.

The information extracted included the maternal age, parity, and booking status. The neonatal variables assessed included birth weight, Apgar score at 5 minutes, neonatal morbidity and mortality. Also the year of delivery, the status of the accoucheuer and the nature of intervention were extracted. The method of delivery of the after coming head was excluded from the study because it was not documented both in the labour ward records and the in patients' case notes.

Results

In the 4 year study period, 122 singleton term breech deliveries were conducted out of a total of 4741 deliveries giving the prevalence of singleton term breech deliveries in the hospital during the study period was 2.6%. The perinatal mortality rate was 250/1000 deliveries.

Eighty-eight (72.1%) of the breech deliveries were through the vaginal route, while 22 (18.0%) and 12 (9.8%) were through elective and emergency caesarean sections respectively.

Table 1 shows the foetal outcome in breech deliveries. The overall perinatal death was 32 (26.2%), with fresh still births accounting for the majority of these deaths (12.3%) Nineteen (59.3%) of these deaths occurred in unbooked mothers. Twenty-three (18.9%) of these babies were severely asphyxiated on delivery and were subsequently admitted into the Special Care Baby Unit (SCBU), for variable periods of time. Only 69 (56.6%) of these babies were healthy on delivery, and were subsequently bonded to their mother.

Of the 8 intrauterine deaths prior to admission, cord prolapse accounted for the majority of them 4 (50%), followed by entrapped after coming head, which accounted for 2 (25%) of the deaths. The other two deaths resulted from chorioamnionitis and gestational diabetes.

Parturients aged between 25 and 29 years had most of the breech deliveries 30 (24.6%), with 23 booked and 7 unbooked. The least perinatal deaths 4 (13.3%) occurred in this age bracket (25.81%). Parturients aged 19 years and below had the highest number of perinatal deaths (8) (25.81%) This is shown in table 2

Multipara (para – 1-4), had the highest number of breech deliveries 80 (65.6%), only 29 (36.3%) of them being unbooked. They accounted for 13 (40.6%) of the 32 perinatal deaths. Nullipara made up 34 (27.9%) of the breech deliveries, and most of them were unbooked 27 (79.41%). They also posted the highest number of perinatal deaths, 15 (48.4%).

There was a gradual increase in the number of breech deliveries in the hospital over the years, with the number increasing from 25 in 2004 to 44 in 2007.(Table III) The perinatal outcomes in these deliveries were initially poor. In 2004, 7 (28%) of the 25 breech deliveries were fresh stillbirth, 3 (1%) died soon after delivery. Ten (40%) were severely asphyxiated and were subsequently admitted into the Special Care Baby Unit. Only 3 (12%) were very healthy on delivery.

Subsequently there was a marked improvement in this trend. Thus by the year 2007, only about 1 (2.3%) out of the 44 breech deliveries was a fresh stillbirth. There was also only 1 (2.3%) early neonatal death, Four (9%) were very healthy on delivery and were subsequently bonded with their mother. There was no clear trend in the incidence of intrauterine death prior to admission.

Table III shows the mode of delivery or the years of study.

Only 12% and 19.2% of the deliveries in 2004 and 2005 had satisfactory perinatal outcome in the respective years. In the year 2007 perinatal outcome improved to 81.8%.

In 2004 and 2005, vaginal deliveries were almost exclusively the modes of deliveries, 23 (92%) and 24 (92.3%) respectively. However, by the year 2005, elective caesarean section became a more frequent mode of breech delivery, so that by the year 2007, 12 (27.3%) of the breech deliveries were through elective caesarean section, while emergency caesarean sections and vaginal deliveries constituted 5 (11.4%) and 27 (16.4%) respectively.

Twenty (90.9%) of the 22 babies delivered through elective caesarean section had good Apgar scores of more than 6 in the first 5 minutes of life. Two babies (9.1%) were asphyxiated with Apgar scores of 5 and less, but there was no perinatal death. Sixteen (18.2%) of the 88 vaginal deliveries were severely asphyxiated and 29 (33.0%) perinatal deaths were recorded. 43

(48.7%) of the babies had good Apgar scores of 6 and above. There were 2 (20%) perinatal deaths out of the 12 delivered through emergency caesarean section while 4 (33.3%) were severely asphyxiated and only 5 (41.7%) had good Apgar scores of 6 and above. These are shown in table 4.

Table 5 shows the relationship between foetal weight and mode of delivery. Nine (40.9%) of the babies that were delivered through elective caesarean section and 5(41.7%) of babies that were delivered through emergency caesarean section weighed 3.6kg and more while only 15 (17.1%) of babies delivered vaginally weighed 3.6kg and more.

Foeto-pelvic disproportion 15 (68.2%) was the commonest indication for elective caesarean section, followed by previous caesarean sections 4 (18.2%). Also foeto-pelvic disproportion 5(41.7%) was the commonest indication for emergency caesarean section followed by foetal distress 4 (33.3%).

Table 6 shows that a total of 72 (59.0%) of the breech deliveries were conducted between 38 to 39 weeks of gestation while 50 (41.0%) breech deliveries were conducted between 40 weeks and 42 completed weeks. Out of the 8(6.6%) intrauterine foetal deaths, 6(4.9%) were delivered from 41 weeks and beyond. Of the 15 (12.3%) stillbirths, 11 (9.0%) were delivered from 41 weeks and beyond. The table shows that the perinatal complications are greater in deliveries occurring from 41 weeks of gestation and beyond.

See The Tables in the illustration files.

Discussion

The prevalence of singleton term breech presentations in this study is 2.6%. It is higher than the 1.2% reported by Adetoro and Fakeye in Ilorin in 1990(12), but is less than the 3.05% reported by Emembolu in Zaria in 1996(13). However, it is still within the 3-4%, which was quoted as the worldwide prevalence (14). The perinatal mortality rate of 250 per 1000 deliveries in this study is similar to the 224.5 per 1000 deliveries reported by Adeleye in Ibadan in 1985(10). However Emembolu reported a rate of 478.72 in Zaria in 1996(13).

Failure to attend antenatal clinic was associated with almost a double fold increase in perinatal mortality in this study. This was more evident in those parturients below 20 years of age and in the nullipara. This is not surprising since pregnancy related complications such as anaemia, pregnancy induced hypertension and foeto-pelvic disproportion are higher in these groups of patients compared to the general population(14). The situation is worsened in the absence of good hospital based antenatal supervision, and if most of them were unmarried(15).

Most of the parturients were aged between 25 and 29 years and the multipara had the most favourable perinatal outcome. This is similar to the findings of Harrison in 1985(16). The disparity in perinatal outcome between the multipara and nullipara/teenagers could be explained by the relative absence of foeto-pelvic disproportions in the multipara. Also relative lower incidence of other pregnancy related complications like pregnancy induced hypertension in the multipara and parturients aged 25-29 year as opposed to the teenage pregnant patients and nullipara contributed to this disparity.

Intrauterine foetal deaths prior to admission contributed a high proportion (27.5%)of the overall deaths. Most of these deaths were due to cord prolapse and entrapped after coming head. This reflected the tendencies of attempting vaginal breech deliveries in peripheral hospitals that are not competent to undertake such deliveries, and the habits of our parturients to report to hospitals in advanced stages of labour. There was no demonstrable decline in this practice during the study period.

There is no doubt that the experience of the accoucheur and the modes of delivery are very important in the outcome of breech deliveries. This was demonstrated in this study where in 2004 and 2005, almost all the breech deliveries were through the vaginal route. The midwives, interns and senior house officers exclusively conducted these vaginal deliveries. Only 12% and 19.2% of the deliveries had satisfactory perinatal outcomes in the respective years. However, with the general enhancement of the quality of care in the obstetric department (following the introduction of residency training), planned vaginal deliveries and elective caesarean sections became the norm in the management of booked women with breech presentations at term. All the breech deliveries were subsequently conducted by obstetric residents. Expectedly, perinatal outcomes improved to 81.8% in the year 2007. The overall caesarean section rate in this study was 27.9%. This was close to the 33.30% reported by Emembolu in 1996(13) and 29% reported by Adeleye (9). The main indication for caesarean section was foeto-pelvic disproportion, which accounted for 41.7% and 68.2% of the indications for emergency and elective caesarean sections respectively. This is not surprising since 41.7% of the babies delivered through emergency caesarean sections and 40.9% of those delivered through elective caesarean section weighed 3.6kg or more.

It is interesting to note that 90.9% of the babies delivered through elective caesarean section had good

Apgar scores and there was no perinatal death among them. Most of the birth asphyxia and perinatal deaths occurred in babies that were delivered through emergency caesarean sections or vaginally and most of these pregnancies were unbooked.

It was also observed in the study that adverse foetal outcomes were more in babies delivered between 41 weeks of gestation and beyond. These may be due to the reduction in amniotic fluid volume with increasing gestational age and its association with an increase in perinatal and early neonatal morbidity and mortality (16,17).

Conclusion

Breech delivery has always been associated with an increased perinatal mortality and morbidity than vertex delivery, even when factors such as prematurity, twinning and congenital abnormalities are excluded (16).

The management protocol of term breech presentation in developed countries seems to favour the policy of planned elective caesarean section (13). However cultural and societal attitude to caesarean section as well as poor operative facilities in many of our health institutions would tend to encourage selected planned vaginal delivery based on proper antenatal selection of patients in our environment. There is no doubt that more efforts will be needed to equip young obstetricians with relevant skills in ECV and successful conduct of assisted vaginal breech delivery in order to reduce the high perinatal morbidity and mortality that is currently associated with vaginal breech deliveries. Our antenatal population will need more enlightenment on the importance of regular antenatal clinic attendance, in order to benefit maximally from either a planned vaginal delivery or elective caesarean section.

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Illustrations

Illustration 1

Table 1: Foetal outcomes in breech deliveries

Foetal outcome	Number of cases/ percentage	Booked	Unbooked
Intrauterine foetal death prior to admission	8(6.6%	3	5
Fresh still birth	15 (12.3%	5	10
Early neonatal death	7(5.7%)	3	4
Severe birth asphyxia	23(18.9%)	9	14
Health live birth	69(54.9%)	42	25
Total	122(100%)	63	59

Illustration 2

Table 2: Relationship between maternal age and perinatal mortality in breech delivery

Maternal age(year)	Total n=22	Booked=63	Unbooked=56	Perinatal death n=32
≥19	27(22.1%)	5	22	8(25.0%)
20-24	18(14.6%)	5	6	7(21.9%)
25-29	30(24.6%)	23	7	4(12.5%)
30-34	26(21.3%)	15	11	6(18.6%)
≥35	21(17.2%)	8	14	7(21.9%)

Illustration 3

Table 3: Mode of Delivery over the years of study

Year/ Total breech caesarean deliveries	Vaginal delivery	Elective caesarean section	Emergency section
2004(n=25)	23(92.0%)	-	2(8.0%)
2005(n=26)	4(92.3%)	-	2(7.7%)
2006(n=27)	14(51.9%)	10(37.0%)	3(11.2%)
2007(n=44)	27(61.4%)	12(27.3%)	5(11.4%)
Total (n=122)	88	22	12

Illustration 4

Table 4: Neonatal apgar scores in the first five minutes of life with respect to mode of delivery

Apgar scores at five minutes/ number	Vaginal delivery	Elective caesarean section	Emergency caesarean section
0	29(33.0%)	-	3(25.0%)
1-5	15(17.0%)	2(9.1%)	4(33.3%)
>5	44(50.0%)	20(90.95)	5(41.7%)
Total (122)	88(100%)	22(100%)	12(100%)

Illustration 5

Table 5: Relationship between foetal birth weight and mode of delivery

Foetal birth weight	Vaginal delivery	Elective caesarean section	Emergency caesarean section
≤2.5kg	16(18.2%)	4(18.2%)	2(16.7%)
2.6-3.5kg	57(64.7%)	9(40.9%)	5(41.7%)
≥3.6kg	15(17.1%)	9(40.9%)	5(41.7%)
Total(122)	88(100%)	22(100%)	12(100%)

Illustration 6

Table 6: Relationship between gestational age and foetal outcomes

Foetal outcome	No of cases	Gestational age(weeks)	
		38-40	≥41
Intrauterine foetal death prior to admission	8(6.6%)	2(1.6%)	6(4.9%)
Fresh still births	15(12.3%)	4(3.3%)	11(9.0%)
Early neonatal death	7(5.7%)	2(1.6%)	5(4.0%)
Severe birth asphyxia	23(18.9%)	3(2.5%)	20(16.4%)
Healthy live birth	69(54.9%)	61(50.0%)	8(14.9%)
Total	122(100%)	72(59.0%)	50(41.0%)

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