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Case Study

BREECH DELIVERY IN A TERTIARY HEALTH INSTITUTION IN NORTH CENTRAL, NIGERIA

BY

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Background: Beech Delivery has always being a topical subject in obstetrics because of its attendant high perinatal morbidity and mortality. A wide range of management policies have been instituted with the aim of reducing perinatal morbidity and mortality.
Aim: To determine the incidence, and perinatal outcome of breech delivery in Federal Medical Centre, Bida.
Methods: A 3-year retrospective study of breech deliveries that were conducted in the labour ward between January 2008 and December 2010.
Information on social-demographic characteristics, presentation, mode of delivery and neonatal outcome were obtained from labour ward and case notes retrieved from the Medical health information Department.
Result: There were 75 breech deliveries out of a total of 4,655 deliveries during the study period giving an incidence of 1.61. Twenty three (60.53%) of breech deliveries were conducted as assisted vaginal deliveries while 15 (39.47%) were via emergency caesarean section. There were 10 perinatal deaths. These included 4 (40%) intrauterine death prior to presentation and, six (60%) that were fresh still births and early neonatal death. Fifty per cent of the perinatal deaths occurred in unbooked mothers. The perinatal mortality rate was 250 /1000 deliveries.
Conclusion: Breech delivery was common and was associated with high perinatal morbidity and mortality.

Keywords: Breech delivery, perinatal outcome, Bida.

Introduction

Breech delivery has always being a topical issue in obstetrics because of its attendant high perinatal mortality and morbidity(Ojiyi *et al*., 2011). These are due to combination of factors such as trauma, birth asphyxia, prematurity and congenital malformations (Hyftern,1982). A Term Breech Trial study had demonstrated a significant reduction in the risk of perinatal and Neonatal death or serious neonatal morbidity in the first 6 weeks of life among those fetuses that were delivered by elective caesarean section compared with those that had planned vaginal breech delivery (Hannah *et al.,* 2000). Reassuring however, was the report of a 2 year follow up that revealed similar neurological development between both arm of the study group(Whyte *et al*., 2004) . A wide range of management policies have been instituted in order to reduce the high perinatal morbidity and mortality and eventually improve the quality of life of the infant later in life(Ojiyi *et al*., 2011). External cephalic version (ECV) is one of such policies. Advocates of ECV believed that excluding complicated breech presentation and other contraindications to vaginal delivery, a successful ECV leads to a more favorable presentation and reduces the incidence of breech deliveries, perinatal morbidity and mortality(Garry and, Govean,1980; Ojiyi *et al*., 2011; Mohammed *et al*., 1991). This led to the recommendation by Royal College of obstetricians and Gynecologists in 2001, that all women with an uncomplicated breech presentation at term be offered an ECV(RCOG,2001; Richa,2010) . On the other hand, it has been demonstrated that the incidence of breech deliveries and perinatal morbidity and mortality are not better in units

where ECV is practiced as compared to units that avoid it(ArulKumaran, 2007). Moreover some successful ECVs later revert to Breech presentation. The recent use of ultrasound guidance in ECV appears to have improved its results(Hibbard,1988). Ultrasound may have guide the careful selection of cases and provide clue to imminent danger of cord entanglement as may be likely in cases of short umbilical cord and severe oligohydramnious.

In our environment however, where facilities for adequate fetal monitoring are deficient, the detection of fetal compromise after ECV may be difficult. Hence most units in the low resource settings offer assisted vaginal deliveries for appropriate and well selected cases and caesarean section for cases in which vaginal deliveries is envisaged to pose danger. The breech scoring system of Zatuchnis and Andros also provide useful guides for assessment of likely outcome of vaginal breech delivery(Iffy and Toliver,1981). The outcome of breech deliveries is compounded in our environment by low antenatal clinic access, out of hospital deliveries and, late presentation (usually in advance/ complicated) in labour. Hence, only a few benefit from planned vaginal delivery(Igwegbe,2010). Studies comparing the Feto-maternal outcome

Of breech deliveries have not been reported from this center. The findings may help to improve patient care and address areas of identifiable challenges. The objective of this study is therefore to determine the incidence, presentation, and perinatal outcome from breech deliveries in Bida.

Materials and Methods:

This is a retrospective study of all breech deliveries conducted in the obstetrics unit over a 3-year period, from 1st January 2008 to 31st December, 2010 at the Federal Medical Centre, Bida. Federal medical center Bida is the only tertiary health institution in Niger state, North central Nigeria serving a population of over four million. Out of the 75 breech deliveries during the study period, 38 case files of patients could be retrieved. These case files were reviewed for socio demographic, clinical presentation, mode of delivery and perinatal outcome. Statistical analysis was by simple percentages and table. Corrected Chi square test was used to test for level of significance. p value of $\leq$ 0.05 was considered statistical significant.

Result

During the 3-year period, 75 breech deliveries were conducted out of a total 4,655 deliveries given an incidence of 1.61% (1 in 62 deliveries). Only the 38 case files retrieved were subsequently analyzed. The perinatal mortality was 250/1000 births. The socio-demographic characteristics are shown in table 1. The mean age of the patients was 27.34 years. About 60% of breech deliveries occurred among patients age 21-30. Twenty seven (71.05%) were booked while 11(28.95%) were unbooked. Twenty eight patients (73.68 %) were multigravida. Thirty (78.95%) were term pregnancies while 8 (21.05%) were preterm. Twenty nine (76.32%) were singleton, 8 (21.05%) were twin pregnancies and 1 (2.63%) was triplet. There were 10 perinatal deaths out of the 50 babies delivered with breech during the period. Table 2 describes route of delivery and perinatal outcome. Twenty three (60.53%) of these deliveries were via vaginal route while 15(39.47%) were via emergency caesarean section. No patient had elective caesarean section as all presented in active phase of labour. Twenty (86.95%) of the 23 babies delivered through emergency caesarean section had good Apgar scores of more than 6 in the first 5 minutes of life. Six (22.22%) of the 27 babies delivered by assisted breech delivery had severe birth asphyxia and 7 (25.93%) perinatal death were recorded (including 3 intrauterine death that were not as a result of mode of delivery but occurring in the perinatal period). There was no demonstrable statistically significant association between mode of delivery and Apgar scores, albeit small sample size (RR = 3.99, M-H Corrected X^2 = 5.99 , p= > 0.05). Four (17.39%) of the babies delivered through caesarean section weighed 3.6kg and more while only 2(7.40%) of babies delivered per vagina weighed 3.6kg and more. The commonest indication for emergency caesarean section was feto-pelvic disproportion as recorded in 7 (46.66%) patients. Other indications were severe fetal distress in early first stage of labour (2) and, sickle cell bone pain crisis (1). Obstetric complications such as antepartum haemorrhage, Pregnancy induced hypertension and, previous caesarean section scar were the indication in 5 (33.33%) patients. Table 3 shows the maternal morbidity pattern. Prolonged hospital stay, blood transfusion, genital tract trauma were the main maternal morbidities encountered.

Table 1: Socio-demographic characteristics of patients

Age (years)	Number	percentage
16-29	6	15.79
21-25	8	20.05
26-30	16	42.11
31-35	4	10.52
36-40	2	5.26
>40	2	5.26
Parity		
0	10	26.32
1-4	18	47.36
≥5	10	26.32
Booking status		
Booked	27	71.05
Unbooked	11	28.95

Table 2: Route of delivery and perinatal outcome

Parameters	Asphyxia (Apgar score 0-5)*	No Asphyxia (Apgar score ≥6)	Still birth	Total
Assisted vaginal delivery	13	12	7	32
Caesarean section	3	20	3	26
Total	16	32	10	58

RR = 3.99, M-H Corrected X^2 = 5.99
***Sum of still birth and Asphyxia**

Table 3: Pattern of maternal morbidity

Morbidity	Vaginal delivery n=22	Caesarean section n=16	Total 38
PPH	1	0	1
Genital tract trauma	2	0	2
Prolonged hospital stay	0	2	2
Blood transfusion	1	3	4
Episiotomy wound infection	1	0	1
Total	5	5	10

Discussion

The incidence of breech delivery in this study was 1.6%. This is comparable to 1.4% and 1. 2% that was reported from Calabar and Ilorin respectively(Abasiattai *et al*., 2006; Adetoro and Fakeye,1990) . It is however lower than 2.6%, 2.84% and 3.05% reported from other centers(Ojiyi *et al.,*2011; Abasiattai *et al*., 2006; Fawole *et al*., 2006; Emembolu and Adaga,1996) in Nigeria and Gabon(Meye *et al*., 2003). This difference may have been due to limited sample size in this study and unlikely to be real. The caesarean section rate among women with breech presentation from this study was 39.47% which is comparable to 37.1% reported from Calabar(Abasiattai *et al.,* 2006) and 33.3% from both Nnewi (Igwegbe *et al*., 2010) and Zaria(Emembolu and

Adaga , 1996) but higher than 27.9% reported from Orlu[1] and 29% from Ibadan (Adeleye ,1985). The main indication for caesarean section was fetopelvic disproportion which accounted for 46.66% similar to 41.7% reported from Orlu (Ojiyi *et al*., 2011). The incidence of low Apgar score at 5 minutes (defined as a score less than 6) as found in this study was higher among the vaginal delivery group compared to those that had emergency caesarean section. This finding was however, not statistically significant probably due to limited sample size (RR = 3.98, M-H Corrected X^2 = %.99, $p > 0.05$). A similar finding was noted in Orlu (Ojiyi *et al*., 2011), Nnewi (Igwegbe *et al*.,), Ile-Ife (Orji and Ajenifuja, 2003) and Kano (Omole-Ohonsi *et al*., 2012). In well selected patients therefore, the mode of delivery may have only but limited bearing on the fetal outcome when the appropriate indications are met. The perinatal mortality rate of 250per 1000 births as found in this study is comparable to report from Orlu (Ojiyi *et al*., 2011) , but lower than the reported figure from Zaria (Emembolu and Adaga, 1996). It is however higher than reports from Nnewi (50 per 1000) (Igwegbe *et al*.,2010), Ibadan (62.5 per 1000) (Fawole *et al.,* 2006) and Ile-Ife (32 per 1000) (Orji and Ajenifuja ,2003). It is probable that the availability of enabling Neonatal facilities both in appropriate manpower and physical infrastructures within special care baby units may play an important role in this regard. The overall maternal morbidity rate of 26.32% is comparable to 23.2% reported in Ibadan (Fawole *et al.,* 2006) and 17.9% from Nnewi(Igwegbe *et al*.,2010). There was relative less maternal morbidity among those that had caesarean section compared to those who had vaginal deliveries except for those complications that were related to surgery. The differences in these complications were however too minimal for meaningful comparison to be made due probably to limited sample size.

In conclusion, breech presentation is not uncommon in our environment and is associated with relative high morbidity and mortality to both fetus and mother. More efforts may be needed to equip young obstetricians with relevant skills for successful conduct of assisted vaginal breech delivery in order to reduce the relative perinatal morbidity such as birth asphyxia associated with vaginal breech deliveries. A larger collaborative study may however be relevant to review trends and outcome in such young upcoming training institutions as ours. Proper record keeping for future research activities and policy decisions should be improved upon in all institution. It is probable that if all case files were available for analysis, a more definitive conclusion could have been made in this study. Our antenatal population may benefit from more enlightenment on the importance of regular antenatal clinic attendance in order to maximize the benefit from either a planned vaginal delivery or elective caesarean section; more so that Term planned vaginal delivery have revealed a similar long term outcome.

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