Outcome of Term Singleton Breech Deliveries in a Tertiary Health Care Centre

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Abstract

Context: Breech delivery is generally associated with higher perinatal morbidity and mortality than cephalic presentation, and the optimal mode of delivery continues to be a source of debate.
Objective: The aim of this study was to evaluate the perinatal and maternal morbidity and mortality associated with term breech delivery, with a view to identifying ways of improving the outcome.
Study Design, Setting and Subjects: This was a retrospective study involving 222 term singleton breeches out of 11,571 deliveries conducted at Jos University Teaching Hospital between January 1994 and December 1998
Results: The incidence of singleton breech delivery at term was 1.9%. This statistically rose with increasing age and parity of the mothers ($p<0.001$). Singleton breech delivery significantly had higher perinatal mortality compared with singleton cephalic presentation ($p<0.001$). Babies delivered by caesarean section were more likely to have Apgar scores greater than 7 compared to those delivered vaginally($p<0.001$). The incidence of caesarean section was 41%. Footling breech, big breech, failure of progress in labour and previous caesarean section led to 83.5% of the caesarean sections. The perinatal mortality rate was 189.2/1000 with birth asphyxia contributing about 85.6/1000 of the perinatal loss. The incidence of maternal morbidity associated with caesarean section was 7.7% compared with incidence of 1.5% associated with assisted breech delivery. There was no maternal mortality.
Conclusion: High perinatal mortality and morbidity were found amongst babies delivered by assisted breech delivery and caesarean section was found to offer better perinatal outcome, albeit with a significant increase in maternal morbidity.

Key Words: Term Breech, Fetal, Maternal Outcome, Parturient. [Trop J Obstet Gynaecol, 2003, 20: 129-133]

Introduction

At 28 weeks' gestation, the incidence of breech presentation is about 20%. Most of the fetuses undergo version spontaneously so that, at term, the incidence is about 3-4% [1,2,3]. The management of breech presentation at term has remained a subject of highly stimulating debate in the labour ward, at undergraduate, postgraduate examinations as well as the obstetric literature. It has been widely recognised that there is a higher perinatal morbidity and mortality with breech presentation, due principally to prematurity, birth asphyxia, birth trauma and congenital abnormalities [4,5]. Consequently, several approaches to management have been proffered, including elective caesarean section [4,5,6] and external cephalic version (ECV). The latter has been subjected to rigorous scientific appraisal in at least six randomised controlled trials. There was a significant reduction in the incidence of caesarean section in women where there was an intention to undertake ECV without any increased risk to the baby. Planned vaginal delivery [7,8,9] has also been advocated in selected cases, all in an attempt to improve the perinatal outcome of the baby.

Breech presentation, whatever the mode of delivery, is a signal for potential fetal handicap. Danielian *et al* 1996 [10] found the risk of childhood handicap following breech presentation to be as high as 19.4%, and this was similar for those babies delivered following trial of labour and those born by elective caesarean section. This observation should guide the antenatal, intrapartum and neonatal management of breech babies. The present study was undertaken to determine the incidence, review the management and determine the perinatal and maternal outcome of singleton breech presentation at term in a tertiary health care institution in the north-central part of Nigeria.

Subjects and Methods

The records of the 222 singleton breech deliveries at term between January 1994 and December 1998 at Jos University Teaching Hospital, Jos were analysed

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Data on the incidence, clinical characteristics of the mothers such as age, parity and booking status, the management and the perinatal and maternal outcome were extracted. The diagnosis of a breech baby was made by palpation and confirmed by utrasound. The later was also used to exclude placenta praevia, congenital anomalies and estimate the fetal weight. Clinical pelvimetry was done at 36 weeks and this was sometime combined with lateral x-ray pelvimetry in selecting those who could be considered for vaginal delivery. Elective caesarean section was offered for footling breech, placenta praevia, big breech and breech with previous caesarean section. The decision to perform a caesarean section or trial of a vaginal delivery was made after counselling the patients, taking cognisance of the clinical examinations, ultrasound reports, and risk factors in the individual patients. In planned vaginal delivery, vaginal examination was done to confirm breech presentation and exclude cord prolapse and footling breech. A paediatrician was usually present at delivery.

The Jos University Teaching Hospital operated an open door policy where all pregnant patients, booked and unbooked, were seen and managed irrespective of their clinical state. Patients who received antenatal care and delivered in the hospital were regarded as booked patients and those who did not receive antenatal care, but came to deliver were regarded as unbooked. Patients diagnosed as being in labour were admitted in the labour ward and managed using the partograph.

The data of the 222 singleton breech deliveries at term were retrieved from the records in the labour ward, theatre, special baby care unit, and from their individual case notes. Causes of deaths were clinically classified because parents refused to give consent for autopsies due to emotional and socio-cultural reasons. The data collected were summarised and subjected to the chi-square test with the level of significance set at 5%.

Results

There were 222 breech births at term amongst 11,571 deliveries, an incidence of 1.9%. There were 136 singleton breech deliveries amongst 6750 booked patients as against 86 singleton breech deliveries in 4821 unbooked mothers. There was no statistically significant difference in the proportions of booked and unbooked mothers with breech presentation that were admitted for delivery.

The ages of the mothers ranged between 18 and 45 years with a mean + SD of 28.5 + 6.0 years. (Table1), while the parity ranged between 0 and 10 with a mean & SD of 3.3 and 2.7 respectively (see Table 2).

Table 1

Age Distribution of Mothers with Singleton Breech Presentation at Term

Age Group	Total Number of Mothers	Number with Breech Presentation *n (%)*
< 20	1511	13 (0.9)
20-24	2873	36 (1.3)
25-29	3711	83 (2.2)
30-34	2081	48 (2.3)
≥35	1395	42 (3.0)
Total	***11,571***	***222 (1.9)***

* $\chi^2 = 28.211; p < 0.001$

Table 2

Parity Distribution of Mothers with Singleton Breech Presentation at Term

Parity Group	Total Number of Mothers	Number with Breech Presentation *n (%)*
0	3556	41 (1.2)
1	2084	33 (1.6)
2	1652	25 (1.5)
3	1223	33 (2.7)
4	881	26 (3.0)
5 or more	2175	64 (2.9)
Total	***11,571***	***222 (1.9)***

* $\chi^2 = 34.822; p < 0.001$

There were 294 perinatal deaths amongst 9109 singleton cephalic delivery with a perinatal mortality rate of 32.3/1000. There were however 42 perinatal deaths in 222 singleton breech delivery with a perinatal mortality rate (189.2/1000) which was about six times higher ($p<0.001$) than the perinatal mortality rate amongst the singleton cephalic presentation at term. The major clinical cause of perinatal death was birth asphyxia (Table 3). Twelve early neonatal deaths occurred amongst babies delivered by assisted breech delivery (131) compared with 2 deaths amongst those delivered by caesarean section (91) giving a relative risk of 4.2 with a 95% confidence interval of 1.1 to 16.

Table 3

Clinical Causes of Perinatal Deaths

Clinical Causes of Death	Number in Booked Patients	Number in Unbooked Patients	Total	PNMR
Birth Asphyxia	4	15	19	85.6
Cause Unknown	5	12	17	76.6
Congenital Anomaly	1	4	5	22.5
Antepartum Haemorrhage	Nil	1	1	4.5
Total	***10***	***32***	***42***	***189.2***

Babies delivered by caesarean section significantly ($p<0.001$) had better 5-minute Apgar scores compared to babies delivered vaginally (Table 4).

Table 4

Apgar Scores by Mode of Delivery

Mode of Delivery	Apgar Score <7	Apgar Score ≥7
Assisted Breech (ABD)	65	42
Emergency Caesarean (EMCS)	26	45
Elective Caesarean (ELCS)	0	16
Total	***91***	***103***

ABD vs EMCS $\chi 2 = 9.94$; $p < 0.01$
ABD vs ELCS $\chi 2 = 20.6$; $p < 0.001$
EMCS vs ELCS $\chi 2 = 8.36$; $p < 0.01$

The incidence of ceasarean section amongst breech deliveries was 41%. The main indications were footling breech (37.4%), big baby (17.6%) and failure to progress in labour (16.5%). Emergency caesarean sections were performed on 52 (57.1%) of the booked patients, of whom 30(33%) were to have had elective surgery compared with 13.2% (12) that were actually done. The incidence of maternal morbidity comprising postpartum haemorrhage, wound infection and urinary tract infection was 7.7% after caesarean births, compared with 1.5% after vaginal breech delivery, giving a relative risk of 5, (95% confidence interval of 1.3 to 20). There was no case of maternal mortality

The birth weights of the babies ranged between 2.45 and 5.6kg with a mean and SD of 3.2 & 0.47kg respectively. Approximately 93% of the babies were in the weight range of 2.5 - 4.0 kg.

Discussion

The incidence of breech delivery at term in the study was 1.9%. This is similar to those of Omu and Akingba [11] as well as Adetoro and Fakeye [12]. It is however at variance with the 3-4% incidence reported from elsewhere [1, 2, 3]. The older patients and those with higher parity had a higher incidence of breech presentation at term. Nulliparity has however also been associated with breech presentation [6].

The perinatal mortality amongst singleton breech delivery was high and this has been similarly reported in other studies [13, 14, 15]. It showed a six-fold increase compared to cephalic presentation, as also reported in another study [16]. The caesarean section rate was high, similar to rates that had been documented in other studies [17, 18, 19].

The study also showed that low Apgar scores at 5minutes (<7) was significantly more common in the assisted vaginal breech delivery group. This finding is in accordance with findings in several other studies [7, 8, 17, 18]. In a critical review of the literature on breech delivery at term, Cheng and Hannah [4] found that planned vaginal delivery for term breech was associated with perinatal morbidity and mortality rates that were 3 to 4 times that associated with elective caesarean section as was also found in this study. Increase risk of maternal morbidity associated with caesarean section compared with assisted breech delivery as documented in other studies [7, 8, 19] was also seen in this study.

In an attempt to find the optimal management of breech presentation at term, two previous randomised controlled trials [7, 8] comparing planned caesarean section and vaginal breech delivery, suggested a worse outcome for the mother and a better outcome for the baby if caesarean section was planned. Recently the term breech trial [20], provided unequivocal evidence that women with a breech presentation at term who plan a caesarean section will have a baby less likely to die or have a serious outcome in the neonatal period than those who plan a vaginal delivery. The result showed a 1% increased risk of perinatal death and a 2.4% increased risk of serious neonatal morbidity when a vaginal birth was planned.

In this study, although the number was small and there was no randomisation, it is evident that babies delivered by caesarean section had better perinatal outcome. However the policy of planned caesarean section for all singleton breech at term may not be the best obstetric intervention in our institution, because our women showed aversion to operative

delivery, and would only present in the hospital when they could not deliver at home. To them having an operative delivery is regarded as being tantamount to reproductive failure. The second reason for not reporting for surgery was inadequate fund for surgery. A patient with aversion for surgery and a scarred uterus is unlikely to seek hospital confinement in her next pregnancy and this has a serious implication in our poor resource setting where efforts are being made to reduce maternal mortality. The present study showed that majority of those selected for vaginal breech delivery gave birth successfully, an observation that had also been reported by others [21, 22, 23, 24, 25].

There is good evidence that external cephalic version for breech at term reduces non-cephalic births by nearly 60% [6] without a detrimental effect on perinatal mortality in both developing and developed countries. However this technique is far from universally offered and currently not offered in our institution. In spite of the recent term breech trial report [20], some authors [26] still consider vaginal breech delivery as justified in selected cases with strict criteria such as fetal size estimation by ultrasound, fetal attitude by ultrasound or x-ray and x-ray pelvimetry, preferably computed tomography. Other authors [27] maintained that vaginal breech is no longer justified. The recent recommendation of magnetic resonance imaging pelvimetry for breech vaginal delivery was based upon surrogate outcome measures in a small trial [28]. Its ability to reduce perinatal morbidity or mortality remains to be demonstrated.

Institutions involved with management of breech presentation should assess their patients thoroughly and present all issues and options of deliveries to them and allow the patients to make an informed choice about how their babies should be delivered. An informed patient is more likely to seek hospital confinement in her next pregnancy in spite of a previous scarred uterus from caesarean breech delivery.

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