

## Outcome of Singleton Breech Delivery in Wesley Guild Hospital, Ilesa, Nigeria

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### Abstract

**Context:** Singleton breech delivery in many developing countries is often associated with poor reproductive outcome largely because of increased perinatal morbidity and mortality.

**Objective:** The aim of this study is to evaluate the impact of antenatal care and delivery in a specialist care unit on fetal outcome in singleton breech delivery

**Study Design, Setting and Subjects:** This was a case-control study of singleton breech delivery occurring at the Wesley Guild Hospital, Ilesa, an arm of Obafemi Awolowo University Teaching Hospitals Complex, from 1st January 1998 to 31st December 2001. The booked antenatal cases served as the subjects of study and unbooked cases received in labour served as the controls.

**Main Outcome Measures:** Incidence of singleton breech delivery, perinatal mortality rates, Apgar scores, birth asphyxia rates, arrest of the after-coming head and operative delivery rates.

**Results:** The results revealed 98 singleton breech deliveries among a total of 4,015 deliveries, giving an incidence of 2.44%. All the perinatal deaths were encountered in the unbooked patients who also had worse Apgar scores, higher persistent birth asphyxia, higher rates of cord prolapse, higher risk of arrest of the after-coming head and increased caesarean section rates when compared to booked patients.

**Conclusion:** Antenatal care and delivery in a specialist care unit may hold the key to changing the prevailing outlook of perinatal outcome in breech delivery in Nigeria and other developing countries.

**Key Words:** Singleton, Breech, Outcome, Perinatal Mortality [Trop J Obstet Gynaecol, 2003, 20: 59-62]

### Introduction

Breech delivery in many developing countries is often accompanied by poor reproductive outcome in the fetus and the mother. There have been reports of increased perinatal morbidity and mortality when compared with pregnancies where the presentation is cephalic<sup>1, 2</sup>. The poor outcome is often linked with the mode of delivery, lethal congenital abnormalities, intrauterine deaths and some known aetiological factors, with less consideration for such extrinsic factors like socio-economic status, booking characteristics, planned delivery, the unit of care and personnel involved at delivery. Prognosis also differs considerably based on maternal parity, route of delivery and the method employed in delivering by the vaginal route.

A lot of controversy surrounds delivery in breech presentation worldwide with many advocating for routine caesarean section for all babies with breech presentation<sup>3, 4</sup>. Till date, the optimal approach towards the management of breech presentations is still the subject of controversy and on-going research. In most developing countries, many patients with breech presentation present in labour without any form of antenatal care and so are not

diagnosed before onset of labour. Important investigations like obstetric ultrasound to localize placenta, exclude congenital anomaly in fetus and uterus; even lateral X-ray pelvimetry or computerized tomographic pelvimetry to determine adequacy of the pelvis are not readily available in these places. Care of these women in labour may be inadequate because of lack of highly skilled personnel. These and many other factors are very crucial in management of breech presentation in the developing countries and may in fact influence the reproductive outcome in these places than in the developed world.

In this study of breech delivery at the Obafemi Awolowo University Teaching Hospitals, data was collected prospectively over four years to critically examine the management pattern and determine factors that optimise or favourably influence fetal outcome in singleton breech delivery.

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## Materials and Methods

The data for this study was collected prospectively on all singleton breech deliveries at the Wesley Guild Hospital, Ilesa, an arm of Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife during the period between January 1<sup>st</sup> 1998 and December 31<sup>st</sup> 2001. The subjects were patients with singleton pregnancies booked for delivery in our institution who had attended our antenatal clinic at least two or more times before going into labour, while the control subjects constituted the unbooked mothers having singleton breech delivery who were referred to our unit from mission homes, Local Government Health Centres, General Hospitals and occasionally, traditional birth attendants (TBAs). Patients who booked with us and opted to deliver elsewhere and were later referred back to us in labour were treated as unbooked cases.

Relevant data were obtained from all patients with singleton breech deliveries whose babies were alive in-utero at the time of admission into the study. The data were fed into computer and analysed using Epi-info and SPSS statistical computer packages. These data included the maternal age, parity, booking status, past obstetric and gynaecological history, type of breech delivery, and method of delivery, fetal outcome and indication for caesarean section where applicable.

Management of breech presentation during the study period followed a standard protocol. Patients detected to have breech presentation in the late third trimester were assessed based on current and past obstetric condition, sonographic findings, as well as clinical and lateral X-ray pelvimetry or CT pelvimetry at the 36<sup>th</sup> week of pregnancy. If the pelvis was clinically or radiologically adequate and no other contra-indication was found, vaginal delivery was planned; otherwise elective caesarean section was carried out. External cephalic version was not performed. Emergency caesarean section was performed where indicated. Zatuchni-Andros prognostic scoring index was always applied to patients presenting in labour. Where scoring index is satisfactory, head well flexed and pelvis adjudged adequate, vaginal delivery was allowed; otherwise emergency caesarean section was offered. Routine delivery of the aftercoming head of the breech with forceps is not usually practiced in our unit. The data were analysed with simple percentages, and descriptive statistics.

## Results

A total of 4,015 deliveries took place during the study period and 98 singleton breech deliveries were recorded. This gives a crude incidence of 2.44% for

singleton breech deliveries. There were two cases of intrauterine fetal death among the referred cases and these were excluded from the study. The results of this study were based on the ninety-six deliveries that met the study criteria.

**Table 1**

### Maternal Characteristics and Fetal Outcome in Booked and Unbooked Patients with Singleton Breech Deliveries at Wesley Guild Hospital, Ilesa, Nigeria (1998 – 2001).

Variable	Singleton Breech Deliveries	
	Booked (N: 66) n (%)	Unbooked (N: 30) n (%)
<b>Maternal Height</b> (metres) (Range: 1.45-1.62; Mean 1.54)		
≤ 1.5 metres	19 (18.8)	8 (26.7)
> 1.5 metres	47 (71.2)	22 (73.3)
<b>Maternal Parity</b> (Range: 1-8; Mean 2.7)		
0	24 (36.4)	9 (30.0)
1-4	37 (56.1)	14 (46.7)
≥5	5 (7.6)	7 (23.2)
<b>Type of Breech</b>		
Extended	53 (80.3)	14 (46.7)
Flexed	12 (18.2)	11 (36.6)
Footling	1 (1.5)	5 (16.7)
<b>Gestational Age at Delivery</b>		
Term (> 37 weeks)	61 (92.4)	11 (36.7)
Pre-Term (<37 weeks)	5 (7.6)	19 (63.3)
<b>Mode of Delivery</b>		
Spontaneous Breech	0 (0.0)	2 (6.7)
Assisted Breech	50 (75.8)	6 (20.0)
Elective Caesarean	12 (18.1)	0 (0.0)
Emergency Caesarean	4 (6.1)	22 (73.3)
<b>Fetal Outcome</b>		
Perinatal Deaths	0 (0.0)	10 (33.3)
Fetal Weight Range (kg)	0.95-4.6	1.2-4.3
Mean Fetal Weight (kg)	2.85	2.93
Apgar Scores < 6 at 1 min	17 (25.8)	21 (70.0)
Apgar Scores < 6 at 5 min	7 (10.6)	15 (50.0)
Male	32 (48.5)	13 (43.3)
Female	34 (51.5)	17 (56.7)
Birth Injuries	1 (1.5)	2 (6.7)
Cord Prolapse	2 (3.1)	6 (20.0)
Arrest of Aftercoming Head	0 (0.0)	3 (10.0)

Table 1 shows the maternal characteristics, some specific obstetric indices and fetal outcome in both the booked and unbooked singleton breech deliveries. The mean age of booked and unbooked mothers were 27.4 and 28.0 years respectively. In those 56 patients who had assisted vaginal delivery,

the Mauriceau-Smellie-Veit method was used for the delivery of the aftercoming head in 30 cases (53.6%), while the Burns-Marshall method of delivery was employed in 26 cases (46.4%). The major indications for caesarean section include fetopelvic disproportion 12 patients (31.6%), previous caesarean section scar 8 (21.1%), placenta praevia 6 (15.8%), footling breech 6 (15.8%), fetal distress 4 (10.5%) and medical complications 2 (5.3%).

**Table 2**  
**Clinical Characteristics Associated with Perinatal Mortality in the Breech Deliveries**

Variable Related to Perinatal Death	Singleton Breech Deliveries	
	Booked (N: 66) Perinatal Deaths PNMR (%)	Unbooked (N: 30) Perinatal Deaths PNMR (%)
<b>Maternal Height</b>		
≤ 1.5 metres	0.0	50.0
> 1.5 metres	0.0	27.3
<b>Maternal Parity</b>		
0	0.0	33.0
1-4	0.0	28.7
≥5	0.0	42.8
<b>Type of Breech</b>		
Extended	0.0	28.6
Flexed	0.0	27.3
Footling	0.0	60.0
<b>Mode of Delivery</b>		
Spontaneous Breech	0.0	0.0
Assisted Breech	0.0	33.0
Caesarean Section	0.0	36.4
<b>Fetal Birthweight</b>		
< 2.5kg	0.0	33.3
2.5-3.5kg	0.0	29.4
> 3.5kg	0.0	37.5
<b>Accoucheur</b>		
Consultant	0.0	0.0
Senior Registrar	0.0	35.7
Registrar	0.0	18.8

During the period of study, there were six cases of congenital malformations comprising single cases each of omphalocele, talipes equinovarus, cleft palate, prune belly syndrome and two case of spinal bifida. The pelvimetry results showed a range of pelvic inlet diameters from 8.5 to 13.5 cm with a mean of 11.8 cm. Out of the 37 booked patients that had either CT pelvimetry or erect lateral X-ray pelvimetry, 31 were found to have normal pelvic inlet diameters.

The relationship between perinatal death in breech delivery in association with maternal height, parity and some specific obstetrics indices are highlighted

in Table 2. The overall perinatal mortality in this study was 104.2 per 1000 deliveries. There was no single case of perinatal mortality among the booked mothers and no maternal mortality was recorded in either group.

**Discussion**

Compared to the cephalic presentation at term, the fetus presenting by the breech is at greater risk of perinatal and neonatal-mortality and morbidity<sup>2</sup>, principally due to higher incidence of birth trauma, asphyxia and occasional fetal congenital anomalies. In many instances the route and mode of delivery have been implicated, necessitating advocacy for routine caesarean section in such patients<sup>5, 6, 7, 8, 9, 10</sup>. It is not known if any controlled trials of adequate size comparing elective caesarean section and planned vaginal delivery have been carried out but evidence on which to make decision on the route of delivery in breech presentations is very poor<sup>2</sup>. The incidence of breech presentation of 2.44% and results of the maternal characteristics and some of the obstetric indices documented in this study is not significantly different from previous work done in this field<sup>1, 3, 4, 7, 8, 9</sup>.

This study evaluates the place of antenatal care, early diagnosis and specialist care unit in breech delivery particularly in Nigeria and elsewhere where perinatal mortality in cases of mal-presentation is still very high. Early antenatal care in a specialist unit as demonstrated in this study can favourably reduce the associated maternal and perinatal mortality and morbidity. When the delivery of the fetus presenting by the breech is planned in a good obstetric setting, the perinatal outcome and emergency operative delivery rate may not be significantly different from that of a cephalic presentation. The perinatal deaths recorded in this study all occurred in the unbooked patients who received no antenatal care in a specialist unit. The caesarean section rate of 24.2% among the booked patients delivering by breech compared favourably with the caesarean section rate of about 22.6% for cephalic presenting fetus during the same period which is however very low when compared with 73.3% for the unbooked patients delivering by the breech.

This study though small in size seems to indicate that perinatal mortality in breech delivery may not be significantly related to parity, mode of delivery and fetal birth weight but significantly associated with the height of the mother, type of breech presentation and the personnel involved in the delivery at least in a planned specialist care delivery unit.

Among the unbooked patients in whose height was less than 1.5 meters, the perinatal mortality was 50% compared with 27.3% when maternal height was higher than 1.5 meters. In the booked patients, where pelvimetry results are available, majority of them have normal pelvimetric measurements but the results are often difficult to interpret as a result of poor positioning at the time of the procedure due to the lumbar lordosis of pregnancy; variable level of measurement and poor reporting of films. Most times, normality of pelvimetric readings does not guarantee safe vaginal delivery. Heights and pelvimetric readings do not always correlate.

Perinatal mortality among the unbooked patients as shown in this study may be related to a lot of confounding variables such as delay in seeking treatment, delay in instituting the desired treatment and other economic factors rather than the specialist cadre concerned. However, it is generally known that footling breech has the worst perinatal outcome as further confirmed in this study. Early diagnosis of breech delivery and early referral to a good obstetric setting with adequate personnel and facilities where good decisions can be taken and implemented early enough will surely improve perinatal outcome in breech presentations. Unfortunately, specialist obstetric care centres are too few in number in this country and in many parts of the developing world to meet the needs of the population.

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It has been shown that antenatal care extended to the doorstep of women in western and developed world has clearly brought about reduction in maternal and perinatal mortality rate figures to the present irreducible minimum currently experienced in these places<sup>10</sup>. Encouraging women in the developing nations to embrace antenatal care in a specialist care delivery unit may hold the key to changing the prevailing outlook of perinatal outcome in breech delivery in Nigeria and other developing countries.

Antenatal clinics need to be widespread, easily accessible, better and adequately staffed with the right personnel. The services offered must be cheap and cost effective so that the less privileged women can benefit. Associations between availability and use of antenatal services have been shown in various types of epidemiological studies to influence good reproductive outcome in mother and child. Though the availability, content and quality of antenatal care vary enormously among developing countries, it is generally much lower where perinatal mortality is high. Even though, it is generally recognised that high quality antenatal care cannot solve all the confounding variables of socio-economic factors, education, parity, maternal age, height and other factors influencing the outcome of breech presentation, antenatal surveillance will only have impact when services exist to manage the clinical problems identified during the antenatal care.