PERINATAL OUTCOME OF BREECH PRESENTATION AT THE MATERNITY TEACHING HOSPITAL IN ERBIL CITY

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ABSTRACT

Background and Objectives

Increased perinatal mortality and morbidity with breech presentation is recognized. The objective of this study was to determine the perinatal outcome of breech presentation in Erbil Maternity Teaching Hospital.

Patients and Methods

This is a case-control study, conducted from the 1st of April 2010 to the 1st of April 2011. The sample size was 238 singleton breech deliveries (cases) and compared with 238 singleton cephalic deliveries. Main outcome measures were neonatal mortality and morbidity including admission to NICU and 5 minutes APGAR scores.

Results

A significantly higher overall perinatal mortality was documented among breech than cephalic deliveries 7.5% versus 2.5%. Low birth weight was significantly (P=0.001) higher among breech than cephalic deliveries. Five minutes APGAR score and neonatal intensive care unit admissions were significantly higher among breech than cephalic babies(P=0.026 and 0.001 respectively).

Conclusions

Breech babies had significantly higher overall perinatal mortality and a lower APGAR score at five minutes and admitted more frequently to NICU than cephalic babies.

Keywords: *Breech presentation, cephalic presentation and perinatal outcome*

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INTRODUCTION

The term maternal and perinatal outcome encompasses a continuum of health status from the most positive (complete physical, mental and social well-being) to the most negative and a huge number of clinical conditions. Perinatal period that is from 24 weeks of gestation to the end of the seventh day of life [(1)]. Breech presentation has been defined as a fetus in a longitudinal lie with the buttocks or feet close to the cervix. This occurs in 1-3% of all deliveries at term [(2)].

The percentage of breech deliveries decreases with advancing gestational age from 22% of births prior to 28 weeks gestation to 7% of births at 32 weeks gestation to 1-3% of births at term. In most cases of breech there is no reason for the fetus to present by breech. However it is useful to look for factors that predispose to breech presentation. Bicornuate uterus, uterine fibroid, low lying placenta, multiple pregnancies, polyhydramnios are known causes. Rarely breech presentation could be due to congenital malformation such as spina bifida or hydrocephaly [(3)].

Training in assisted vaginal delivery is needed. Hence external cephalic version (ECV) is offered after 36+ weeks as the chance of spontaneous version of breech to cephalic version after 37 weeks is estimated as 1 in 20. ECV is contraindicated in those with placenta previa, multiple pregnancies, history of antepartum haemorrhage, intrauterine growth retardation and in those with pre-eclampsia or hypertension. ECV is relatively contraindicated for those with uterine scars [(4)].

In Erbil Maternity Teaching Hospital (MTH), a small study limited to 100 cases of breech babies without a comparison group was done [(5)]. This prompted the researchers to assess the perinatal outcomes of delivery including perinatal mortality and morbidity in singleton breech babies (cases) and compare it with singleton cephalic babies (controls) in the MTH among primiparas and multiparas.

SUBJECTS AND METHODS

This case-control study was carried out at the MTH in Erbil city, from the 1st of April 2010 to the 1st of April 2011 at the delivery room of Erbil MTH. The study included a convenience sample of 238 singleton breech babies compared with 238 cephalic singleton babies collected during the study period. Data were collected during eight months by direct interview with each subject. Fvie to six interview sessions were conducted every week and each session lasted for 1-2 hours. The study was approved by the Research Ethics Committee of the College of Medicine of Hawler Medical University.

Each pregnant woman was examined generally. Abdominal examination was performed by the obstetricians for fetal lie, fetal presentation and engagement. Pelvic examination was performed to assess cervical dilatation, state of amniotic membrane and the pelvis. Inclusion criteria included singleton breech babies with frank or complete type and singleton cephalic babies. Exclusion criteria included identified anomaly of fetus, footling singleton breech and multiple pregnancies.

Ultrasound guide was used for estimation of viability of the baby, gestation age, lie, presentation, amount of liquor, twin pregnancies, congenital anomalies and to determine the location of placenta.

All neonates have their weight measured in the labour room using the available basin scales (with sensitivity of 10 grams). The scale was adjusted to zero before each measurement then the baby was wiped and put on the scale naked and the measurement was recorded in grams. The birth outcomes, including stillbirths, were also recorded. After delivery, APGAR scores were recorded for all babies; healthy full term babies were discharged and those who had low APGAR score (less than 7) at five minutes were admitted to NICU by the pediatrician.

Low birth weight (LBW) was defined as weight at birth of less than 2,500 grams "5.5 pounds" [(6)], pre-term birth was defined as gestational age at birth of less than 37 completed gestational weeks [(7)] and stillbirth was defined as an intrauterine death occurring after 24 weeks' gestation before labour and baby born with no signs of life. There are two types of stillbirth: fresh stillbirth and macerated stillbirth; the fresh stillbirth was diagnosed when the duration between fetal death and delivery was less than 24 hours. Perinatal deaths included all stillbirths, plus deaths in the first week after birth.8

The Statistical Package for Social Sciences (SPSS) version 18 was used for data entry and analysis aided by Microsoft Excel. Chi-square ($\chi 2$) test and Fisher's exact test were used to test the significant association between categorical variables. P value ≤ 0.05 was

considered as statistically significant.

RESULTS

The age range of the pregnant women of singleton breeches was 15-46 years, with a mean ±S.D of 27.135±6.58 years, while the age range of the pregnant women of singleton cephalic babies was 16-45 years, with a mean ±S.D of 26.84±6.201years. There was no statistically significant difference in age, educational level and residence of cases and controls, as shown in Table 1

The overall perinatal mortality were significantly (P=0.011) higher among breech babies (7.5%) than cephalic babies (2.5%), There was more stillbirths among cases than controls and more early neonatal deaths among breech than cephalic group (3.75% Vs.1.25%, respectively); LBW was significantly (P=0.001) higher among breech babies than cephalic babies (0.16% Vs. 0.05%). These findings are shown in Table 2.

Breech babies had significantly lower APGAR scores (P=0.026) at five minutes than cephalic babies. Sixteen percent of breeches were admitted to the NICU Vs. 6.7% of the cephalic; a difference which had a statistical significance. These findings are shown in Table 3.

Table 1. Demographic characteristic of cases and controls.

Variables	Cases		Control		
	No.	%	No.	%	P-value
Age of mother					
<20	19	8.0	18	7.6	
20-35	188	79.0	191	80.2	0.943
>35	31	13.0	29	12.2	
Mother education level (years)					
0*	84	35.3	79	33.2	
≤6	81	34	100	42	0.086
7-9	25	10.5	12	5	
10-12	29	12.1	22	9.2	
≥13	19	8	25	10.5	
Residence					
Urban	198	83.2	204	85.7	
Rural	40	16.8	34	14.3	0.448

*** Illiterate and unschooled.**

Table 2. Perinatal mortality among cases and controls.

Variable	Cases(N=238)		Controls(N=238)		
	No.	%	No.	%	P-value
Overall perinatal mortality	18	7.5	6	2.5	0.011
Stillbirths	9	3.75	3	1.25	0.079
Fresh	2	0.8	0	0.0	
Macerated	7	2.9	3	1.25	
Early neonatal deaths	9	3.75	3	1.25	0.079
LBW	39	0.16	12	0.05	0.001
Pre-term delivery	43	0.18	29	0.12	0.07

Table 3. APGAR scores and admission to NICU in breech and cephalic presentation.

Variables	Cases(n=238)		Controls(n=238)		
	No.	%	No.	%	P-value
APGAR score					
<7 at 1 min.	35	14.7	18	7.5	0.389
<7 at 5 min.	19	7.9	4	1.6	0.026
Admission to NICU					
Yes	38	16.0	16	6.7	0.001
No	200	84.0	222	93.3	

DISCUSSION

Compared with cephalic presentation, persistent breech presentation has increased hazard for both the mother and her baby; however, the risk is highest for the baby, and it is considered as a challenging problem to the obstetrician. In the present study, congenital anomalies, footling presentation and twins were excluded to properly calculate the perinatal mortality [8].

Studies revealed that there is a relation between breech presentation and perinatal mortality. Perinatal mortality is increased from 2 to 4 folds with breech presentation, regardless of the mode of delivery [2]. In a community-based study in Bangladesh [9], breech presentation was linked to high perinatal mortality in 13%. In another hospital-based study in India, breech delivery accounted for 19% and 12% of stillbirths and early neonatal deaths, respectively [10]. In Guatemala, up to 87% of babies have been reported to have died during deliveries complicated by abnormal fetal presentation [11]. Studies in Nigeria Ile-Ife [12] and Nnewi [13] have similarly revealed high perinatal mortality in breech presentation. The findings of our study indicates that the overall perinatal mortality in breech babies was significantly higher than in cephalic babies.

This study revealed a significantly more Low Birth Weight babies' among cases. LBW has long been used as an important public health indicator. Low birth weight is not a proxy for any one dimension of either maternal or perinatal health outcomes. Low birth weight is closely associated with fetal and neonatal mortality and morbidity, inhibited growth and cognitive development, and chronic diseases later in life. Many factors affect the duration of gestation and fetal growth, and thus, the birth weight.. A study in Ibadan, Nigeria, [14] revealed a high perinatal mortality among LBW breech babies (35.2%). Other studies have shown that the main causes of high neonatal morbidity and mortality are preterm and low birth weight deliveries and hypoxic damage during birth [15, 16].

This study also revealed that Apgar score < 7 at 5 minutes was significantly reported among breeches than controls and documented a significantly higher rate in NICU admitted cases. These findings are similar to those reported in Papua New Guinea [17].

In conclusion, breech babies had significantly lower Apgar score at 5 minute and admitted more frequently to NICU than cephalic babies. The high overall perinatal mortality could be attributed to high rate of low birth weight. Prevention and proper management of LBW reduce the adverse perinatal outcomes.

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