

# *Perinatal out come of Breech Presentation in the Presentation in the Pretext Mode of Delivery*

*\* Abdulrazak H. Alnakash MBChB, FICOG, CABOG*

## **Abstract**

**Objectives:** To choose the best mode of delivery for term, frank or complete, breech presentation through studying the perinatal outcome of each mode of delivery decided when managing a group of pregnant ladies presented with breech delivery in our centre.

**Methods:** One hundred and fifty pregnant ladies presented at term with singleton, frank or complete, breech presentation for delivery in our centre during the period from May 2004 to August 2005.

Mode of delivery, parity, gestational age, maternal age, maternal medical illness, and birth weight where the variables that have been tested in each delivery included in the study to verify their relationship to perinatal outcome.

**Results:** No significant relationship is found between the occurrence of adverse perinatal outcome and the variables. However, mode of delivery was the

major determinant of the perinatal outcome.

of the 150 pregnant ladies, 46 were delivered vaginally, 32 had elective caesarean section, and the remaining 54 pregnant, had undergone an emergency caesarean section because they were presented with labour. Thirteen (8.6 %) babies were adversely affected by the process of delivery, 9 (5%) of them were delivered by vaginal route, 3 (2 %) delivered by emergency caesarean section and one (0.6%) by elective caesarean section.

**Conclusion:** Elective caesarean section is regarded the safest way of delivery for those with term, frank or complete, breech presentation.

**Key Words:** Breech, Perinatal outcome, Cesarean Section (CS).

*Al-kindly Col Med J 2007;Vol.4 (1): p 70-75*

## **Introduction**

**B**reech presentation is considered when buttocks of the fetus enter the pelvis first. Breech presentation occurs in 50% of gestations prior to 32 weeks, most of these early breech presentations resolve spontaneously by converting in to cephalic position as the pregnancy progresses and hence, breech presentation which persists to delivery occurs naturally in 2-4% of all pregnancies, it is therefore not uncommon<sup>(1,2)</sup>.

It is reported that, persistent breech presentation could be due to an abnormal fetal neurological state in utero which leads to poor fetal activity<sup>(3)</sup>. However the associated conditions with breech presentation are: Prematurity, amniotic fluid disorders, abnormal placental insertion, uterine anomalies, high parity, congenital anomalies of uterus, previous breech presentation, multiple pregnancy and pelvic tumors. In majority of cases nevertheless, have no apparent cause<sup>(4,5)</sup>.

The perinatal mortality in breech delivery is 4-10 time that of vertex delivery<sup>(6)</sup>. This high perinatal mortality and morbidity is attributed partly to the associated conditions encountered with breech like prematurity and congenital anomalies and partly to the mechanical and hypoxic damage occurring during birth<sup>(4)</sup>.

Antenatal diagnosis of breech presentation is important because it gives the obstetrician time for adequate assessment and delivery under optimal conditions. Usually the diagnosis is

suspected on clinical basis when finding hard round ballotable head at the fundus with fetal heart sounds heard loudest slightly above the umbilicus and more on feeling the soft breech on vaginal examination. Diagnosis can be confirmed by an ultrasound which may provide good information about the type of breech; fetal weight, fetal abnormalities and can exclude the possibility of multiple pregnancy, placenta previa and pelvic Tumor.<sup>(1)</sup>

<sup>5)</sup> The management of breech presentation is always controversial and considered a challenge for obstetricians. Three management options need to be explained to the mother: External Cephalic Version (ECV), Trial of Vaginal Breech Delivery and Elective Cesarean Section (CS)<sup>(7)</sup>. Although it is known that ECV significantly reduces the number of breech presentation at term, thereby reducing the rate of CS by about two third and hence the maternal morbidity and mortality from surgery<sup>(8)</sup>. A prospective study of pregnancy outcome after successful ECV found that, cephalic presentation per se does not completely eliminates the risk of CS<sup>(9)</sup>. Moreover the incidence of intrapartum CS was 2.25 times higher than for control among the pregnancies in which ECV was successful<sup>(8)</sup>.

Selection for vaginal delivery depends primarily on adequacy of maternal pelvis and fetal weight. Presence of competent team to deal with vaginal delivery is mandatory<sup>(5)</sup>. This study

was conducted to find out the perinatal outcome of each mode of delivery selected to deliver babies with breech presentation and to set out the safest route of delivery.

## Methods

The study was carried out in Al-Elwiya Maternity Teaching Hospital during the period from May 2004 to August 2005. It is a prospective study including management of 150 pregnant with singleton term, frank or complete, breech presentation. The patients were attenders of the out patient clinic for assessment. Of them, 32 women came with no evidence of labour and they were underwent CS electively because being either primigravida or having medical illness or obstetrical indication for CS.

The remaining (118 pregnant) presented with labour, of which 54 women underwent CS urgently and 64 were allowed for vaginal delivery because they were very early in labour with no indications for surgery.

The delivered babies were received by the attending pediatrician who is committed to assess and score them.

The adverse perinatal outcomes were considered when one or more of the following occurred:

- Perinatal or neonatal mortality within the 28 days of the age (excluding lethal congenital anomalies).
- Birth trauma: which includes subdural haematoma, intracranial hemorrhage, spinal cord injury, peripheral nerve injury at discharge from hospital, clinically significant genital or liver injury and fractures of humerus and clavicle?
- Hypoxic injury or asphyxia: indicated by Apgar score of less than 4 at 5 minutes, intubation and ventilation for at least 24 hrs, admission to the neonatal care unit for longer than 4 days or when seizures occurring during 24 hours of age.

Base line variables such as maternal age, parity, gestational age and maternal illness were included beside the mode of delivery and birth weight for analysis, aiming to find relations with perinatal outcome.

Vaginal deliveries were carried out usually by the most expertise nurse in the labour room under obstetrician's supervision. Assisted delivery was applied in all cases. The after coming head usually delivered by Burns-Marshall Maneuver by allowing the baby to hang down from it's head after delivery of the body to ensure flexion and when the nuchal region (nape) appears from below the symphysis pubis, the baby's legs were held by the right hand of the attendant and then

exerting an outwards force to deliver the head by

moving the legs towards the mother's abdomen. Forceps delivery of the after coming head is not the policy of the center.

## Results

**(Table-1)** shows no significant association between baseline variables and adverse perinatal outcome as shown in. Maternal age was found to have no significant effect on the perinatal outcome ( $P = 0.37$ ).

Parity on the other hand, although statistically was found to have no burden on the perinatal outcome ( $P = 0.14$ ), it influenced the mode of delivery, as primigravida was considered as a constant indication for CS in our center. Of the 22 primigravida who underwent CS, only one baby was adversely affected.

No affected babies were found in relation to the gestational age or maternal medical illness possibly because these babies were delivered abdominally.

**(Table-2):** shows that the mode of delivery affects the perinatal outcome ( $P=0.009$  which is highly significant). The vaginal route is found to be the most hazardous with 9 affected babies and elective CS is the safest rout with only one harmed baby, while emergency CS resulted in three affected babies.

Type of breech and birth weight were found to have no significant effect on the perinatal outcome ( $P=0.37$  &  $P=0.057$  respectively). 4.9% of babies who delivered with frank breech and 16.3% of those delivered with complete breech had adverse perinatal outcome, a percentage which is not statistically significant. Moreover, 10% of babies whose birth weight more than 3500 gm and 8.7% of babies with birth weight between 2800 and 3500 had suffered after birth, again this percentage is not statistically significant.

**(Table-3):** shows that the risk of adverse perinatal outcome was highest with vaginal birth and lowest with elective CS (odds ratio [OR: 0.34 [95% CI: 0.04- 2.82],  $P = 0.009$ ), and to lesser extent with emergency section (OR: 0.43 [95% CI: 0.08- 2.16],  $P = 0.009$ ).

**(Table-4):** shows no significant interaction between mode of delivery and birth weight of the baby ( $P = 0.001$ ). Figure (1) and (2) describe the adverse perinatal outcome in breech delivery encountered in our study as follows: One intrapartum death which was due to entrapment of the after coming head during vaginal delivery, constituting 7.7% of the total adverse outcome (0.6 % of the total sample).

Twelve babies were injured, 5 of them had trauma (three with intracranial hemorrhage, one

with hip dislocation and one with brachial plexus injury) constituting 38.5% of the adversely affected babies. The remaining 7 babies (53.8%) had suffered from hypoxic brain insult (5 babies with low APGAR score at 5 minutes, and two had seizure within the first 24 hours of the delivery), they required hospitalization for a week in the nursery unit.

## Discussion

In this comparative study we tend to highlight the safest route for breech delivery and the management of breech delivery in our centre.

Looking at table 1, we can see that perinatal outcome is mostly dependant on the mode of delivery rather than other factors. Maternal age had no effect on the perinatal outcome ( $P=0.37$ ), this is possibly attributed to the fact that old mothers prefer delivery by CS and their Obstetricians on the other hand are unwilling to challenge them with vaginal breech delivery.

Regarding Parity, results are inconclusive because no primigravida was allowed to deliver vaginally and hence no clear comparison could be made, however, comparing low parity (1-4) with high parity ( $>4$ ) showed no effect on the perinatal outcome.

Gestational age, here again there is no clear association with the perinatal outcome because all postdated pregnancies were underwent CS. Finally Maternal medical illness, similarly having no effect on the outcome. Similar results were obtained by the term breech trial collaborative group (10).

Regarding the effect of fetal birth weight on the perinatal outcome, we found no significant relation between birth weight and adverse perinatal outcomes (table 2). It is because that babies weighing more than 3500 grams (40 cases) were mostly delivered by CS and only 3 of them were delivered vaginally as they came with imminent labour and unfortunately they were adversely affected, however, there was no direct correlation between birth weight and the mode of delivery (**Table-3**). Similar result was obtained by Rosen MG, ChikL (11).

On the other hand, birth weight was significantly associated with poor perinatal outcome ( $P=0.007$ ) as shown clearly by the term breech trial collaborative group<sup>(10)</sup>. They also found no significant interaction between the mode of delivery and the birth weight ( $P=0.95$ ).

Different results were obtained by the American family physicians who found that neonatal mortality rate was much lower in infants delivered vaginally, a difference approaches 13 fold in infants weighing 2500 grams or more<sup>(11)</sup>.

Caesarian section rate in our study was 57.3%, which is lower than what is reported by Anne D, who practiced term breech trial on group of pregnant women with breech presentation where CS rate was 90.4% (12). This is probably in part, due to a larger sample size patients (2088 women) included in his study.

It is good to mention that 13% of all CS done in our hospital was for breech indication which is Comparable to the 12% reported in the united state (9). The fact that, ECV was not performed in our center, this may increase further the overall CS rate for breech indication.

About 8.66% of the included deliveries had adverse outcomes, 2/3 of them (6%) were delivered vaginally, confirming that vaginal deliveries carry the highest risk to the babies whereas those who delivered by emergency CS and elective CS have 2% and 0.6% of the adverse outcomes respectively.

Comparable results were showed by Hanna M.E. who reported 5% of vaginal deliveries followed by affected babies versus 1.6% in the CS group<sup>(13)</sup>. The term breech trial collaborative group found that the risk of adverse perinatal outcome was highest in vaginal delivery and was at its lowest in elective CS while the risk was lowest in emergency CS (10).

In 2001, the Royal College of Obstetricians and Gynecologists (Guide line No.20) recommended that, "the best method of delivery at term frank or complete breech singleton fetuses is by planned CS" (14).

By contrast, Rosen MG, Chik L. found that, delivery route was not significantly associated with perinatal morbidity (11). Same opinion obtained by Nahid F. who observed no marked difference could be detected in corrected neonatal mortality rate in both modes of delivery (15).

In our study one intrapartum death was encountered (0.6%) which resulted from difficult delivery of the after coming head. Nearly same results was obtained by Prdhan P. et al, who allocated 1433 singleton frank or complete breech fetuses, where he found that the perinatal mortality rate was 0.3% in the vaginal delivery group versus 0 in the CS group and he concluded that labour was associated with small but unequivocal increase in the short term mortality and morbidity<sup>(16)</sup>.

Looking at figure (2) we can conclude that, the most common adverse perinatal outcome is hypoxic brain injury which is presented by low Apgar score or seizures occurring within the first 24 hours. In our study, most of these injuries (3.3%, 5 cases) were encountered in the vaginal Delivery group while it was recorded in only two

cases (1.1%) in the CS group.

Comparable results were obtained by thoperbeeston JG *et al*, who found that about 4.6% of the newborns had hypoxic brain injury in the vaginal delivery group versus 2.2% in the CS group<sup>(17)</sup>.

## Conclusion

Traumatic birth injuries were more prevalent in the vaginal delivery group with figure about

2.6% (3 cases) compared with 0.6% (one case) in the CS group. Incidence of trauma is low in the study of Hannah M.E. in the term breech trial who reported 1.5% in the vaginal delivery group versus 0.5% in CS group<sup>(13)</sup>. This difference related to the facilities and experiences in vaginal breech delivery between the different centers.

## Tables and Figures

(Table 1)

**The Baseline Variables and Risk of Adverse Perinatal**

Variable	No.	Adverse perinatal outcome	P.value	Sig.
Total	150	13(8.66%)		
<b>Maternal age</b>				
> 30 year	40	6(15%)	0.37	NS
< 30 year	110	7(6.3%)		
<b>Parity</b>				
> 4	53	7(13.2%)	0.14	NS
1-4	75	5(6.6%)		
0	22	1(4.5)		
Gestational Age	25	0(0%)		
> 41 week				
Maternal diabetes	6	0(0%)		
Maternal hypertension	13	0(0%)		

(Table -2)

**Relation between Mode of Delivery, Type of Breech and Birth Weight with the Incidence of Adverse Perinatal Outcome in Breech Delivery**

Variable	No.	Adverse perinatal outcome	p.value	Sig.
Total	150	13(8.66%)		
<b>Mode of Delivery</b>				
Elective CS	32	1(3.1%)	0.009	HS
Emergency CS	54	3 (5.5%)		
Vaginal Delivery	64	9 (14%)		
<b>Type of Breech</b>				
Frank	101	5(4.9%)	0.37	NS
Complete	49	8(16.3%)		
<b>Birth Weight</b>				
>3500 gm	40	4(10%)	0.057	NS
2800-3500 gm	89	8(8.7%)		
< 2800 gm	21	1(4.7%)		

(Table-3)

**Predicative Factors of Adverse Perinatal Outcome**

Variable	Odds ratio	95% CI	p.value	Sig.
<b>Mode of Delivery</b>				
Elective CS	0.34	0.04-2.82		
Emergency CS	0.43	0.08-2.16	0.009	HS
Vaginal Delivery	3.63	0.89-14.82		
<b>Birth Weight</b>				
>3500 gm VS	1.31	0.31-	0.84	NS
2800-3500 gm		5.45		
<2800 gm VS	1.16	0.31-	0.51	NS
2800-3500 gm		4.34		

HS=Highly Significant NS=Not Significant

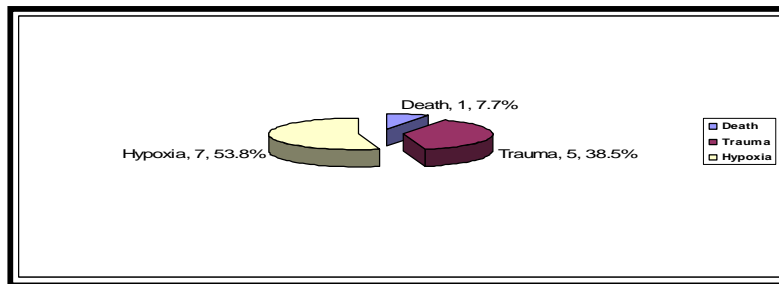
(Table- 4)

**No Significant Interaction between Mode of Delivery and Birth Weight.**

Total	Elective CS	Emergency CS	Vaginal delivery	Birth weight
40	22	14	4	>3500 gm
89	8	35	46	2800-3500 gm
21	2	5	14	<2800 gm
150	32	54	64	Total

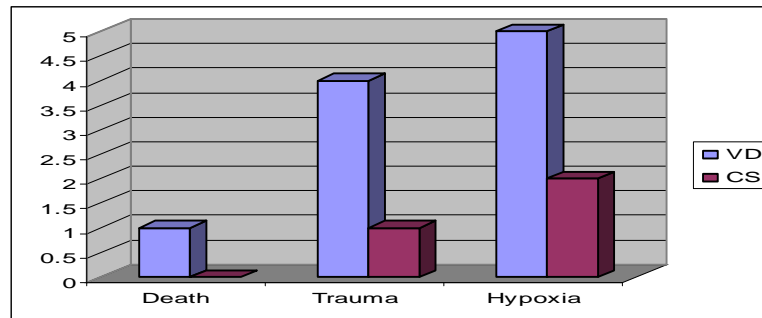
(Figure-1)  
Adverse Perinatal

**Outcome in Total Sample**



(Figure-2)

**Adverse Perinatal Outcome in both VD and CS**



## References

1. Pritchard JA, Mac Donald PC. Dystocia caused by abnormal- lities in presentation, or development of the fetus. William olostdric. Norwalk, CT: Appleton-century-crofts; 24<sup>th</sup> Ed.,2001.
2. Klufio CA, AmoaAB. Breech presentation and delivery. PNG Med.J1991; 34: 289-295.
3. Braun F.H.T,Jones K.L and Smith D.W,breech presentation was an indication of fetal abnormality, J. Paed 86:419,1975.
4. Apeawusu B.Amoa, Mathias Sapuri. Perinatal out come and associated factors of persistent breech presentation at the port Mores by General Hospital, Papua new Guinea. PNG Med J 2001 Mar- Jun; 44(1-2): 48-56.
5. Sanders W.B. High risk pregnancy management options. 2<sup>nd</sup> Ed. 1999 by DK James. PJ steer, CP Weiner and B Gonik. Chapter 58; p 1025.
6. Gimovsky ML, Paul Rh. Singleton breech presentation in labour: experience in 1980. AMJ obstet Gynecol 1982 ; 143: 733-39.
- 7.Dewhurst's by KEITH EDMONDS. Text book of obstetrics and Gynecology for postgraduate study. Sixth edition 1999 by Blak well science LTD chapter 23, p 277.
- 8.Anderew s. (oco, Stephanie D ,Silverman, external cephalic version American Family Physician , septum 1, 1998.
- 9.Lau TK, Lokw, Rogers M. pregnancy outcome after successful external cephalic version for breech presentation at term. Am j abstet Gynecol. 1997; 176: 218-23.
10. Min SU, Lynne McLeod, Susan Ross, Andrew Willan, Walter J. Hanna for the term breech trial collaborative group. Factors associated with adverse perinatal out come in the term breech trial. Am J obstet Gynecol. 2003. sept. 19: 740-45.
11. Rosen MG, ChikL. The effect of delivery route on out come in breech presentation. Am J. obstet. Gynecol. 1984 April; 148 (7): 904-14.
12. Anne D walling Cesarean VS. vaginal delivery of infants in breech presentation . American family physician. 1999March 1.
13. Hanna ME, W.J Hanna, S A. Hewsow, ED Hodnett for the term breech collaborative group. Planned cesarean section versus planned vaginal birth for breech presentation at term. A randomized Multicentre trial Lancet, 356:1375- 1383, 2000.
- 14.Royal College of obstetricians and Gynecologists: Guideline no .20, Apr 2001.
15. Nahid F. out come of singleton term breech cases in the pretext mode of delivery. J pak med Assoc Mar 2000; 50 (3):81 -85.
16. Pradhan P ,Mohajer M ,Deshpandes. Outcome of term breech births: 10 years experience at a district general hospital. BJOG. 2005 Feb; 112 (2): 218-22.
17. Thorpe - Beeston J G, Ban field PJ breech delivery at term. BMJ. 1992; 305: 746- 47.

*Al kindy Col Med J 2007; Vol .4 (1) P: 75*

\* *Head of Obstet & Gyne Department Alkindy Medical College/Baghdad University  
Consultant at Al-Elwiya Maternity Teching Hospital*

*Address Correspondence to:*

**Dr. Abdulrazak H. Alnakash**

**E-mail: [razaknakash@yahoo.com](mailto:razaknakash@yahoo.com)**

*Received 13<sup>th</sup> Feb. 2006 Accepted 4<sup>th</sup> July .2006*