

*Full Length Research Paper*

## Maternal and neonatal out come in breech delivery; Vaginal versus caesarean section

<sup>1</sup>Saud Taher, <sup>2</sup>\*Maida Shamdeen

<sup>1</sup>Lecturer Dohuk medical college

<sup>2</sup>Prof/Dohuk medical college, Consultant OBG /Azady teaching hospital

\*Corresponding author email: [maida\\_yousif@yahoo.com](mailto:maida_yousif@yahoo.com)

Accepted 22 April, 2018

### ABSTRACT

Breech presentation (Br. Pr) when the entrance of fetal buttocks or the lower extremities enter to the maternal pelvic inlet, or the buttocks and / or lower extremities of fetus are presented to the bottom of uterus and the head is in the upper part of uterus. Br. Pr occurs in (3-4%) of all deliveries, the percentage decreases with advancing gestational age from 25% of birth prior to 28 weeks of gestation to 7% at 32 weeks, to (1-3.7%) of births at term. Aim: This study was conducted in women with breech delivery to compare the maternal and neonatal out come in relation to the mode of delivery. Design: This is a descriptive hospital population – based study, done in pregnant women with breech presentation at time of delivery (whether for vaginal delivery or elective caesarean section), in a period of 7 months. Patients and method: study on 200 pregnant women with breech presentation at time of delivery. A total of (290) cases were seen, only (200) cases were included, those with normal singleton fetus, ≥37 weeks of gestation were divided into two groups, those delivered vaginally and by Caesarean section. The Criteria for vaginal delivery were good condition for both mother and fetus. Results: In this study, most Primigravida were delivered by caesarean section (75%), vaginal delivery was only (25%). Conclusion: Elective caesarean section decreases the risk of adverse early neonatal death and total neonatal morbidity in nulliparous pregnant women with normal singleton term breech fetus, and fetuses estimated weight (≥3500g), with no significant effect in maternal outcomes.

**Keywords:** breech presentation, breech delivery

## INTRODUCTION

### Breech presentation

(Br. Pr) when the fetal buttocks or the lower extremities enter into the maternal pelvic inlet and the head is in the upper part of uterus. (Rivilin et al., 1999), the incidence of (Br. Pr) occurs in (3-4 %). of all deliveries, the percentage decreases with advancing gestational age from (14- 25%) of birth prior to 28 weeks of gestation to 7% at 32 weeks and (2.2-3.7%) at term as most fetuses turn spontaneously towards term. (Fischer et al., 2006; David

and Luseley, 2004; David et al., 2005; Alan et al., 2003)

There are three types of breech presentation: Frank (Extended) Breech (60–70%) of Br. Pr. (David and Luseley, 2004; Vernon, 2006) Flexed or (complete) Breech: 10%. (Fischer et al., 2006; David and Luseley, 2004; David et al., 2005; Keith, 1999), Footling (incomplete) Breech: (10-30%) (Fischer et al., 2006; David and Luseley, 2004) and single footling: one of the lower extremities is the lower most double footling: both

of the lower extremities are lower most. (Andrew et al., 2006).

Causes associated with Br. Pr including: (David et al., 2005; Studd, 1998) Preterm labor, which are structurally normal with higher perinatal mortality and morbidity when compared with cephalic Presentation due to the increased risks from birth asphyxia or trauma. It remains unclear whether Br. Pr predispose to preterm labor. (David and Luseley, 2004; David et al., 2005) Danielien et al.(1996) found that 18% of preterm breech infants were congenitally abnormal. Collea et al. (1980) quoted a 5% incidence of congenital abnormality in term breech fetuses which is 2.5 times higher than the vertex counterparts (2.1%). Central nervous system abnormalities are noted such as hydrocephalus, anencephaly and myelomeningocele in Br. Pr in about 50%. Another 50% of them are with Prader- willi syndrome and chromosomal trisomy / aneuploidy. (David and Luseley, 2004; David et al., 2005). The association between IUGR and Br. Pr is particularly marked in the preterm fetus, breech fetus tend to have reduce fetal-placental ratio, small for gestational age, and increase head circumference regardless of mode of delivery, this difference in weight persists up to 18 months of age but disappears by 4 years of age and relatively linked with short umbilical cords. (David et al., 2005).

Uterine abnormality as bicornuate and septate uterus, gives fetus less room to turn to cephalic position. (David and Luseley, 2004; David et al., 2005; Alan et al., 2003; Miller- Mc Fvers, 1997; Cambell, 2000). Pelvic mass or uterine tumors, fibroid or ovarian cyst that are low in the pelvis, may prevent fetus from cephalic presentation. (David and Luseley, 2004; David et al., 2005; Miller- Mc Fvers, 1997). Uterine tone is greater in nulliparous, limiting the available space, and so Br. Pr is more common. On the other hand, relaxed uterus of grand multiparous encourage unstable lie so that fetus enter labor by chance in a Br. Pr (David et al., 2005; Cunningham et al., 2001).

A contracted pelvis is associated with Br.Pr, probably by limiting uterine space in the lower segment, poor healing of previous pelvic injury or (Rickets) can leave an abnormal pelvic shape. (David and Luseley, 2004; David et al., 2005; Vernon, 2006). Maternal anticonvulsant drugs and substance abuse (alcohol), both these point have profound influence on intrauterine fetal neurologic function and fetal behavior (Fischer et al., 2006; David and Luseley, 2004).

Placenta previa, is well recognized cause of Br. Pr as it changes intrauterine shape and prevent engagement of head. (David and Luseley, 2004; David et al., 2005; Studd, 1998; Amoa et al., 2001). Cornual implantation of placenta found in only 5% of vertex presentation in comparison to 73% of those presenting by breech (David et al., 2005).

In multiple pregnancies each fetus may prevent the

other from turning, with a 25% incidence of breech in the 1<sup>st</sup> twin, 50% for 2<sup>nd</sup> twin and higher percentages with additional fetuses (David and Luseley, 2004; David et al., 2005; Alan et al., 2003; Vernon, 2006; Miller- Mc Fvers, 1997). Polyhydramnios and Oligohydramnios may impede final shift of the fetus to cephalic presentation. (David and Luseley, 2004; David et al., 2005; Vernon, 2006; Andrew et al., 2006; Cunningham et al., 2001). Previous breech deliveries may increase Br. Pr, as the uterus may have an anomaly predisposing it to Br.Pr. (David and Luseley, 2004; David et al., 2005; Vernon, 2006; Andrew et al., 2006).

The fetus presenting by the breech is at greater risk of perinatal and neonatal mortality and morbidity, due to fetal congenital abnormality, birth trauma and asphyxia (Keith, 1999), Br.Pr whatever the mode of delivery is a signal for potential fetal handicap and the perinatal mortality remain increased even when delivered by caesarean section and corrected for gestational age, congenital defects and birth weight (David and Luseley, 2004).

The incidence of birth trauma during breech vaginal delivery (B.V.D) is (7.8%) which is 13 times that of cephalic presentation (C.Pr) (0.51%). (David et al., 2005)

Gimovsky et al (1983) have emphasized the vulnerability of the occipital bone to damage during (B.V.D) due to its impact on the maternal pubis during descent of the fetal head into the pelvis during the 2<sup>nd</sup> stage. These forces tend to separate the squamous part of the occipital bone from the lateral part (occipital diastasis), this produces a ridge in the posterior fossa and hence bruising or laceration of the cerebellum, the squamous part of the occipital bone distort the foramen magnum and produce pressure on spinal cord and herniation of brain tissue through foramen magnum (David and Luseley, 2004; David et al., 2005; Vernon, 2006; Cunningham et al., 2001).

Major body bruising due to trauma and tearing of the skeletal muscles result in large quantities of hemoglobin and myoglobin lead to sever jaundice and damage to the kidneys (crush syndrome) in a premature infant whose hepatic capacity is limited. This can produce a form of (shock lung) in the neonate manifesting as severe respiratory distress syndrome (RDS). (David et al., 2005). The incidence of brachial plexus injury is 8.5%, and 70% of these cases are resolved spontaneously, only 1-2% of infants will suffer from brachial plexus injury (David and Luseley, 2004; David et al., 2005; Alan et al., 2003; Studd, 1998).

Organ injury by rough handling with perforation of bowel, intraperitoneal hemorrhage, and injury to the liver, spleen, adrenal gland. (Cunningham et al., 2001). Umbilical cord compression and prolapse may be associated with footling in (15%), complete type (5%), and in frank breech about (0.5%) as in cephalic presentation. (Alan et al., 2003). Still birth may result from

traumatic intracranial tentorium hemorrhage, if the delivery of the after-coming head is rapid and uncontrolled with asphyxia either due to delayed delivery or due to head entrapment, or cord prolapse and compression. (Vernon, 2006; Cambell, 2000).

The performance of (C.S) does not prevent the possibility of birth injury and many foregoing consideration about careful delivery of after –coming head and the danger of traction on spinal cord. (David et al., 2005). In cases of male fetus trauma to the fetal gonads may lead to hemorrhage and edema, and this possible may cause male infertility (David et al., 2005), others as damage to the mouth and pharynx. David and Luseley, 2004; David et al., 2005), and hypopituitarism. David and Luseley, 2004; David et al., 2005) Long -term out effect of breech birth is reviewed in a population-based study Danielian et al. (1996), they compared the long term outcome of infants delivered in Br.Pr at term they found that there were no difference between both groups of Caesarean section and Vaginal delivery in term of sever handicap, developmental delay, neurological deficit or psychiatric referral up to school age. (Danielien et al., 1996; Krebs et al., 2002). In all studies maternal morbidity is increased in women delivered by C.S when compared to V.D, as Hemorrhage, hysterectomy, urinary tract infection (UTI), deep venous thrombosis (DVT), uterine and wound hematomas and infection, and pulmonary embolism (David and Luseley, 2004; Alan et al., 2003; Keith, 1999; Cambell, 2000).

Because of greater frequency of operative delivery including C.S delivery there is a higher maternal morbidity and slightly higher mortality, the risk is increased more with emergency C.S (Cunningham et al., 2001; David et al., 2005).

### **Aim and objective**

To compare the maternal and neonatal out come in relation to the mode of delivery. The early neonatal death and neonatal morbidity in V.D versus C.S and in relation to the parity and fetal birth weight, Apgar score at the 5 minutes, birth trauma, birth asphyxia, respiratory distress syndrome and brachial plexus injury.

The second was comparing the percentage of maternal morbidity in relation to the mode of delivery and parity as postpartum hemorrhage, deep venous thrombosis, complication of general anesthesia and need for blood transfusion.

### **Patients and method**

A study on 200 pregnant women with breech presentation at time of delivery, In Azady General Teaching Hospital in Dohuk City. A total of (290) cases

with breech presentation at time of delivery were diagnosed during the period of study, only (200) cases were included; those with normal singleton fetus,  $\geq 37$  weeks of gestation. In which they were divided into two groups, breech delivered vaginally and by C.S. The other (90) cases were excluded as they had (prematurity, multiple pregnancy and congenital abnormal fetus). Applying criteria for vaginal delivery were good condition of both mother and fetus, average size fetuses estimated clinically and by U/S, a well flexed head by U/S. The mother with an average pelvic capacity judged clinically, and no evidence of Feto pelvic disproportion. Multiparous women with no other obstetrical indication for caesarean section and those in to labor room with advance stage of labor. Criteria for caesarean section were U/S showed fetus with extended neck, non-stress test by continuous CTG showed suspicious fetal heart rate trace, Feto-pelvic disproportion, breech footling type and complete type, previous history of perinatal death or birth trauma, previous caesarean section, other uterine surgery like myomectomy and conditions which were contraindicated for vaginal delivery as placenta previa, sever IUGR and Oligohydramnios.

All patients were admitted to labor unit and examined generally, vital sign and abdominal examination for the lie of fetus; confirm presentation, engagement, clinical estimation of fetal size, and fetal heart rate. Pelvic examination was carried out to confirm diagnosis, exclude cord prolapse, type of breech, position, cervical dilatation and effacement, and state of amniotic membrane. Clinical pelvimetry by measurements of subpubic arch which is ( $\geq 90$ ) degrees, distance between sacral promontory and inferior pubic rami which is normally ( $> 9.5\text{cm}$ ), and the sacrospinous ligament will accommodate two fingers; the intertuberous diameter will accommodate the clenched fist to decide the mode of delivery. Ultrasound examination done most of cases whenever possible for assessment of gestational age, fetal weight, fetal attitude, placental site, amount of liquor, exclude multiple pregnancy, and congenital abnormality of the fetus and uterus.

### **Group of breech vaginal delivery**

Intrapartum fetal heart rate was monitored by CTG with observation of progress of labor by using partograph and need for interference. Both groups given an appointment for follow up after 7 days in outpatient clinics after delivery.

Neonatal parameters were studied including Apgar score in 5 minutes, Perinatal mortality and Neonatal morbidity (birth trauma, asphyxia, brachial plexus injury, and RDS). Post-delivery maternal parameters which included postpartum hemorrhage, puerperal pyrexia, need for blood transfusion, deep venous thrombosis and

**Table 1.** The difference in Apgar score at 5 minutes in newborns delivered by C.S versus V.D.

Apgar score	VD (n=70)		C.S (n=130)	
	No.	%	No.	%
< 7*	13	18.6	8	6.15
> 7	57	81.4	122	93.85

\*Z= 2.4, p value < 0.05, the difference in Apgar score < 7 was significant between vaginal delivery and cesarean section

complication of general anesthesia. As 45% of Br.Pr is not diagnosed until after 38 weeks and 30% remain undiagnosed until labor (David and Luseley, 2004; David et al., 2005; Cunningham et al., 2001) performance of Leopold's maneuver and ballottement of the uterus may confirm Br.Pr; (Alan et al., 2003) Fetal heart sound is heard above the umbilicus (David and Luseley, 2004; David et al., 2005; Whitefield, 1995; Hofmeyer and Kulier, 2000). In vaginal examination the fetal ischial tuberosities and sacrum provide bony landmarks and anus are usually palpable and after further descend the external genitalia may be distinguished if membranes is ruptured, the examining finger in the anus may produce meconium stain. (David et al., 2005; Cunningham et al., 2001).

Ultrasound is used to confirm a clinically suspected cases and exclude fetal anomaly, hyper-extension of the head, location of placenta, exclude multiple gestation and amniotic fluid volume and to estimate fetal weight, (Rivlin et al., 1999; David et al., 2005; Alan et al., 2003).

ECV was not done as abdominal wall was not relaxed. (2- 5, 18-2). The fetus presentation should be frank type for a trial of delivery (David and Luseley, 2004; David et al., 2005; Alan et al., 2003), with no evidence of Feto pelvic disproportion.

Spontaneous breech delivery when the fetus is expelled entirely spontaneously without traction or manipulation other than support of the fetus, while partial breech extraction the fetus is delivered spontaneously as far as umbilicus but the remainder of body is extracted / delivered with operator traction and assisted maneuvers with or without maternal expulsive efforts and the total breech extraction, the entire body of the fetus is extracted by obstetrician.

Labor was conducted within a labor ward with all facilities needed that allows rapid intervention by (C.S), intravenous line were sited and blood taken for typing and cross match, oral intake avoided for the duration of labor with continuous electronic fetal monitoring (David and Luseley, 2004)

An epidural anesthesia is recommended in order to prevent involuntary expulsive effort prior to full cervical dilation and to make any manipulation in the 2nd stage and do emergency (C.S). (David and Luseley, 2004; David et al., 2005)

Chadha et al. (1992) reported that epidural anesthesia is not essential and in fact there may be a higher chance of obtaining a successful vaginal delivery) (Chadha et al., 1992).

The second stage of labor, the woman placed in lithotomy position with left lateral tilt by insertion of wedge to prevent supine hypotension, with her buttocks just over the end of the delivery couch, the perineum was cleaned and empty bladder and lower bowel. A pudendal block was provided. Episiotomy was performed, the fetus delivered by the classical way of vaginal delivery. (David and Luseley, 2004; David et al., 2005; Andrew et al., 2006; Amoa et al., 2001; Cunningham et al., 2001). Forceps delivery may be required for delivery of fetal head, Breech Extraction was not needed.

Maternal and neonatal parameter were grouped and analyzed according to the mode of delivery (V.D and C.S), maternal parity and fetal birth weight.

Results were analyzed using the frequency distribution tabulation, histogram, and Z test for two proportions was used for statistical analysis of the difference in neonatal and maternal outcome in between vaginal and Cesarean section,  $|Z| \geq 2$  significant at P value  $\leq 0.05$ .

## RESULT

From 200 cases (35%) were delivered by VD and 130 cases (65%) by C.S. The total numbers of primigravida were (80 cases) in which C.S were done in 60 cases (75%) versus V.D in 20 cases (25%), while the numbers of multigravida were (120 cases) in which C.S were done in 70 cases (58.3%) versus V.D in 50 (41.7%).

Table (1) The difference in Apgar score at 5 minutes in newborns in relation to the mode of delivery, (21 had Apgar score <7 at 5 minutes, all were admitted to the neonatal special care unite and it was three fold higher in the V.D (18.81%) versus C.S (6.15%), which was statistically significant (p value < 0.05).

Table (2) show the total neonatal morbidity it was statistically significantly higher in V.D (18.6%) versus C.S (6.2%) as {p value < 0.05), there was threefold increase in birth trauma (fracture of long bones) in cases of V.D (2.9%) versus C.S (0.8%), eightfold increase in birth

**Table 2.** Neonatal morbidity in relation to the mode of delivery.

Neonatal morbidity	V.D (n=70)		C.S (n=130)		total (n=200)	
	No.	%	No.	%	No.	%
Birth trauma(fracture of long bone)	2	2.9	1	0.8	3	1.5
Brachial plexus injury	1	1.4	0	0.0	1	0.5
Asphyxia	6	8.6	1	0.8	7	3.5
Respiratory distress syndrome	4	5.7	6	4.6	10	5.0
Total *	13	18.6	8	6.2	21	10.5

\*Z= 2.218, P value < 0.05 {for the difference in the total neonatal morbidity between vaginal delivery and caesarean section}

**Table 3.** Neonatal morbidity in relation to the parity and mode of delivery.

Neonatal morbidity	V.D				C.S			
	Primigravida (n=20)*		Multigravida (n=50)**		Primigravida (n= 60)*		Multigravida (n=70)**	
	No.	%	No.	%	No.	%	No.	%
Birth trauma (fracture of long bones)	1	5.0	1	2.0	1	1.6	0	0.0
Brachial plexus injury	0	0.0	1	2.0	0	0.0	0	0.0
Asphyxia	4	20.0	2	4.0	0	0.0	1	1.4
RDS	2	10.0	2	4.0	3	5.0	3	4.3
Total	7	35.0	6	12.0	4	6.6	4	5.7

**Table 4.** Neonatal morbidity in relation to the birth weight and mode of delivery.

Neonatal outcome	Birth wt. (<3500 g)				Birth wt. (≥ 3500 g) *			
	V.D (n=40)		C.S(n=50)		V.D (n=30)		C.S (n=80)	
	No.	%	No.	%	No.	%	No.	%
Birth trauma	1	2.5	0	0.0	1	3.3	1	1.3
Brachial plexus injury	0	0.0	0	0.0	1	3.3	0	0.0
Asphyxia	2	5.0	1	2.0	4	13.3	0	0.0
RDS	2	5.0	3	6.0	2	6.6	3	3.7
Total *	5	12.5	4	8.0	8	26.5	4	5.0

\* Z = 6.63, P value < 0.05, the difference in total neonatal morbidity in the fetuses with birth weight (≥ 3500g) was statistically highly significant in V.D versus C.S.

asphyxia in V.D (8.6%) versus C.S (0.8%), there was only 1 case of brachial plexus injury in V.D (1.4%) versus no case in C.S, RDS was slightly higher in V.D (5.7%) versus C.S(4.6%).

Regarding the neonatal mortality, there was no case of still birth in both groups, while the early neonatal death was fourfold increase in V.D (4cases, 5.7%) from 70 cases (due to birth asphyxia and respiratory distress syndrome) in comparison to C.S (2 cases, 1.5%) from 130 cases (mainly from respiratory distress syndrome due to intrauterine growth retardation).

Neonatal morbidity in relation to the parity and mode of delivery, the total neonatal morbidity was statistically significantly higher in V.D versus C.S in both primigravida and multigravida subsequently (35.0% versus 6.6%) and (12.0% versus 5.7%) {P value <0.05%}. Table 3.

Z\* = 6.4, p value < 0.05 {the difference in the total neonatal morbidity was statistically highly significant in primigravida in V.D versus C.S}

Z\*\* = 2.25, p value < 0.05{the difference in the total neonatal morbidity was statistically significant in multigravida in V.D versus C.S}.

The total neonatal morbidity in the fetuses with birth weight (≥ 3500g) was statistically significant higher in V.D (26.5%) versus C.S (5.0%) {P value <0.05}, while in those weighed (<3500g) the difference was not significant. Table 4.

The difference in total maternal morbidity\_in relation to mode of delivery which was statistically non-significant in V.D (12.9%) versus C.S (15.3%) as all the studied parameters had been relatively equivocal, the rates of PPH in V.D (4.3%) versus C.S (4.6%), puerperal pyrexia in V.D (2.9%) versus C.S (3.8%) {of them, 2 cases were reaction to the blood, 1 cases infected wound, 2 cases of urinary tract infection, 1 case of mastitis, and 1 case was undiagnosed}, the rate of blood transfusion was in V.D (5.6%) versus C.S (5.4%), In addition there was another two cases, one of them had deep venous thrombosis

**Table 5.** Maternal morbidity in relation to mode of delivery.

Maternal morbidity	V.D (n=70)		C.S (n=130)	
	No.	(%)	No.	(%)
PPH	3	4.3	6	4.6
DVT	0	0.0	1	0.8
Puerperal pyrexia	2	2.9	5	3.8
Blood transfusion	4	5.6	7	5.4
Complication of general anesthesia (delay recovery)	0	0.0	1	0.8
Total *	9	12.9	20	15.3

\*Z= 0.47, p value > 0.05 {the difference in total maternal morbidity was statistically non significantly between vaginal delivery and caserean section}

**Table 6.** Maternal morbidity in relation to parity and mode of delivery.

Maternal morbidity	V.D				C.S			
	Primigravida (n=20)*		Multigravida (n= 50)**		Primigravida (n=60)*		Multigravida (n=70) **	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
PPH	0	0	3	6.0	1	1.7	5	7.1
DVT	0	0		0.0	0	0.0	1	1.4
Puerperal pyrexia	1	5.0	1	2.0	1	1.7	4	5.7
Blood transfusion	1	5.0	3	6.0	2	3.3	5	7.1
Delay recovery from general anesthesia	0	0.0	0	0.0	1	1.7	0	0.0
Total	2	10.0	7	14.0	5	8.3	15	21.4

Z = 2.18, p value < 0.05 {the total maternal morbidity was statistically significantly higher in multigravida than primigravida in caesarean section}

**Table 7.** Indications of Caesarean section in breech delivery.

Indication of C.S	CS (n=130)	
	No.	%
Previous scar	38	29.2
Primigravida with Feto-pelvic disproportion	30	23.1
Footling	26	20.0
Hyper extended fetal neck	6	4.6
Amniotic fluid abnormality	10	7.7
Uterine abnormality	10	7.7
Pelvic mass / uterine growth	2	1.5
IUGR	8	6.2

(0.8%), and other was of complication of general anesthesia (delay recovery) (0.8%) in C.S. Table 5.

The maternal outcome in relation to parity and mode of delivery, the difference in the total maternal morbidity in both Primigravida\* and multigravida\*\* were statistically non-significant in (V.D versus C.S) respectively, (10.0% versus 8.3%), (14.0% versus 21.4%) {P value>0.05}, while the total maternal morbidity in cesarean section was statistically significantly higher in multigravida than primigravida (21.4%) versus (8.3%) {P value <0.05}. Table 6.

The indication of the Caesarean section, there was previous scar in (29%), fetopelvic disproportion (23.1%), footling type (20.0%), hyper-extended fetal neck (5.4 %), amniotic fluid abnormality (7.7%), uterine abnormality

(7.7%), IUGR (6.2%), and pelvic mass uterine growth (1.5%). Table 7.

## DISCUSSION

The management of breech presentation remain controversial, it has long been known that perinatal mortality and neonatal morbidity are increased following breech V.D, and maternal morbidity were increased following C.S, going through many studies, it was found that it is incorrect to assume that. Caesarean breech delivery is traumatic for the fetus, as several studies have shown that brachial plexus injury, damage to soft tissue, fractures, entrapment of the head behind

the uterine incision occur in Caesarean breech delivery as well. (Cunningham et al., 2001).

This is a descriptive hospital population- based study, the total number of deliveries both during the period of study was (23027), and the numbers of breech deliveries were (290 cases). The study included 200 cases those with normal single fetus  $\geq 37$  weeks of gestation was divided into two groups for CS and V.D.

The prevalence of Br.Pr at time of delivery was (1.26%), this was lower than the study done in California by (William M. Gilbert, et al., 2003) in which the percentage of breech presentation was (3%) (William et al., 2003), as it is not a representative of the entire population and it was included only singleton normal fetus,  $\geq 37$  weeks of gestation, study revealed that the percentage of vaginal delivery was (35%) and Caesarean section was (65%), this different from study done by (Nahid, 2000) in which vaginal delivery was (62%) and Caesarean section was (38%) (Nahid, 2000), this might be due to poor compliance of our patients to antenatal care units and they reach labor unit with undiagnosed breech presentation.

In this study, most primigravida were delivered by C.S. (75%), versus V.D. in only (25%), this agree with (Nahid, 2000) in which (68%) of primigravida were delivered by Caesarean section and only (32%) vaginally (Nahid, 2000), while in multigravida there was no significant difference between V.D and C.S. (41.7% versus 58.3%) this was disagreed with result shown in study done in United Arab Emirates by (KuMari and Grundsell, 2004), in which multigravida who had V.D. versus C.S. was (70% versus 30%) (KuMari and Grundsell, 2004), this was explained as most multigravida in this study had more than one indication for C.S and most of them had previous C.S.

The low Apgar score  $<7$  at 5 minutes had been found in (21 newborn), all were admitted to the neonatal special care unit as shown in table (2), the low Apgar score was statistically and significantly higher in the V.D (18.81%) versus C.S (6.15%), this was comparable to the results obtained from (Daskalakis et al. 2007; Ben Aissia et al., 2004; Rietberg et al., 2003) in which a newborn having low Apgar score  $<7$  was significantly higher in V.D versus C.S (Daskalakis et al., 2007; Ben Aissia et al., 2004; Rietberg et al., 2003), this mean that C.S. is a preferred route of delivery for a fetuses at term in Br.pr .

This study supports that early neonatal mortality and neonatal morbidity was increased with V.D. versus elective C.S, no cases of intrapartum death had been reported, however, the early neonatal death was statistically and significantly increase fivefold higher in V.D (5.7%) versus C.S (1.5%), this was similar to result obtained by Hannah et al. 2001) they found that the early neonatal mortality was increased in V.D. (Hannah et al., 2001), and another study done by (Ben Aissia et al., 2004) in which neonatal mortality was higher in V.D

versus C.S (Ben Aissia et al., 2004).

This study demonstrated the total neonatal morbidity was statistically and significantly higher in V.D (18.6%) versus C.S (6.15%) {P value  $< 0.05$ } as shown in table 2, this result was in agreement with study done by (Reijner and Roumen, 2001) as they found neonatal morbidity was significantly higher in V.D versus C.S (Ben Aissia et al., 2004). There was threefold increase in birth trauma (fracture of long bones) in cases of V.D (2.9%) versus C.S (0.8%), this agree with study done by Ben Aissia et al. (2004) which revealed that V.D. was associated with a significant birth trauma (5.5%) versus C.S. (0.5 %) (Ben Aissia et al., 2004), and study done by Rietberg et al. (2003) in which birth trauma was threefold increase in V.D versus C.S (Rietberg et al., 2003). There was eightfold increase in birth asphyxia in V.D (8.6%) versus C.S (0.8%), this is in agreement with study done by William et al. (2003) in which the asphyxia was higher in V.D versus C.S with significance odds ratio (5.7) (William et al., 2003). The risk of Brachial plexus injury was (1.4%) in V.D versus no case in C.S, this agree with study of Herbst et al. (2002) in Sweden, in which brachial plexus injury in V.D was (0.9 %) versus no case in C.S Herbst et al. (2002); Collea et al. (1980) found that brachial plexus injury was (3.3 %) in V.D (Collea et al., 1980).

The risk of respiratory distress syndrome was slightly higher in V.D (5.7%) versus C.S (4.6%) but it was non-significant the total neonatal morbidities in both primigravida and multigravida were increased and it was highly significant in V.D versus C.S subsequently in primigravida (35.0% versus 6.6%) and multigravida (12.0% versus 5.71%) {P value  $< 0.05$ } as shown in table (2), this result agreement with study of William (2003) as neonatal morbidities were increased in both primigravida and multigravida in V.D versus C.S (William et al., 2003). In addition, the total neonatal morbidities in primigravida was highly significant than multigravida in V.D (35.0%, 12.0%) {P value  $< 0.05$ } this disagreed with results obtained by Hannah et al. (2001); Brouwer et al. (2001) they find no difference in the neonatal outcome between nulliparous and multiparous (Hannah et al., 2001; (Brouwer et al., 2001)) this study would suggest that it is important to inform patients who are considering to be undergoing a breech V.D that neonatal morbidity seems to be higher in those women in their first pregnancy.

The fetuses with birth weight ( $\geq 3500$ g) was associated with statistically significant difference in the total neonatal morbidity and mortality in V.D (26.5%) versus C.S (5.0%) {P value  $< 0.05$ } as shown in table (4), this was agreed with results of Abasiattai et al. (2006) that the C.S was statistically significantly decrease in perinatal mortality in breech deliveries in fetuses estimated to weight ( $\geq 3.5$ kg) (p= 0.0005) (Abasiattai et al., 2006), disagreed with results of Brouwer 2001) with planned V.D as no differences were observed in neonatal outcome in relation to birth weight (Brouwer et al., 2001).

This study also revealed the comparison of maternal mortality and morbidity in V.D. versus C.S. there were no cases of maternal mortality found, but still there were cases of maternal morbidity, as shown in Table (6), the difference in total maternal morbidity was statistically non-significant between V.D (12.9%) versus C.S (15.3%) {p value > 0.05}, this result is similar to other study done recently in the Term Breech Trial by Hannah et al. (2001) they found no significant difference in maternal morbidity in V.D. versus C.S. delivery (Hannah et al., 2001). But this disagree with the result obtained by Sanchez-Ramosl et al. (2001) as they found that maternal morbidity was higher in C.S. (Sanchez et al., 2001), another two studies was published more than 20 years ago by Collea et al. (1980); Gimovsky et al. (1983) they also found significantly increased in maternal morbidity with C.S Collea et al. (1980); Gimovsky et al. (1983).

The post-delivery maternal parameter studied was {PPH, DVT, puerperal pyrexia, need for blood transfusion and complication of general anesthesia}, there was a slight lower rates of PPH in V.D (4.3%) versus C.S (4.6%), puerperal pyrexia in VD (2.9%) versus C.S (3.8%) {of them, 2 cases were reaction to the blood, 1 case of infected wound, 3 case of urinary tract infection, 1 case of mastitis}, only 1 case of deep venous thrombosis (DVT) which occurred in C.S (0.8%), about complication of general anesthesia there was only 1 case reported of (delay recovery) in C.S (0.8%), and no difference in the rate of blood transfusion in V.D (5.6%) versus C.S (5.4%). This study demonstrated the maternal outcome in relation to parity as shown in table (7), the total maternal morbidity in C.S was statistically and significantly higher in multigravida than primigravida (21.4%) versus (8.3%) {P value <0.05}.

However, the difference in the total maternal morbidity in both multigravida and primigravida were none significant in C.S versus V.D respectively, (21.4% versus 16.0%) and (10.0% versus 8.3) {P value >0.05}, this was disagreed with the results of study done in multiparous women by KuMari and Grundsell, (2004) as they concluded that C.S in multiparous women was associated with significant increase in maternal morbidity when compared to V.D (KuMari and Grundsell, 2004).

This study revealed that most cases have more than one indication for caesarean section, and the most common indications of C.S were shows in table (7); previous scar, footling, and feto-pelvic disproportion (either due to big fetus or due to contracted pelvis).

## CONCLUSION

Caesarean section in comparison to vaginal delivery in term pregnant women with breech presentation decrease the risk of adverse early neonatal death and the total

neonatal morbidity in both primigravida and multigravida in women with normal singleton term breech fetus and those fetuses estimated to weight ( $\geq 3500\text{g}$ ), with no significant effect in maternal outcome.

## RECOMMENDATION

Improvement of antenatal service and it's important to inform parents who are considering undergoing a breech V.D, that neonatal mortality and morbidity seems to be increased in those women and especially in their first pregnancy. Usage of U/S in the labor room, C.S will improve neonatal outcome in Primigravida with Bp. Pr of normal term singleton fetus.

## REFERENCE

- Abasiattai AM, Basser EA, Etuk SJ, Udoma EJ, Ekanem AD (2006). Caesarean section in the management of singleton breech delivery in Calabor; Niger J clinical Pract. 9(1):22-5.
- Alan HD, Lauren N, Karen KMP, Joseph V (2003). Malpresentation and cord prolapse, Current obstetrics and gynecology. USA: McGraw-Hill companies 9th edition. chap. 21; pp. 369-380.
- Amoa AB, Sapuri M, Cecil K (2001). Perinatal outcome and associated factors of persistent breech presentation. PNG Med J; 44(1-2): pp, 48-56.
- Andrew J, Assaad JS, John H, Francisco T, Mark Z, Pamela D (2006). "Pregnancy and Breech delivery" published by emedicine Section 1 Of 9 (2006) <http://www.pubmed.com>. This page last updated in, May 10.
- Ben Aissia N, Youssef A, Said MC, Gara M.F (2004). Breech presentation, vaginal delivery or planned caesarean section? Tunis Med, 82(5):425- 30.
- Brouwer WK, Veenstra van Nieuwenhoven AL, Santema JG (2001). Neonatal outcome after a planned vaginal breech birth: no association with parity or birth weight, but more birth injuries than in planned caesarean section. Ned Tijdschr Geneesk. 145(32):1554-7.
- Cambell S (2000). Christoph Lees. Malpresentation Obstetric by Ten Teacher. London: Arnold; 17<sup>th</sup> edition. ch. 9, pp. 125-291.
- Chadha YC, Mahmood TA, Dick MJ, Smith NC, Campbell DM, Templeton AA (1992). Breech delivery and epidural analgesia. Br. J. Obstet. Gynaecol. 99:96- 100.
- Collea JV, Chein C, Quilligan EJ (1980). The randomized management of term frank breech presentation, a study of 208 cases, Ame. J. obstet. Gynecol. 137: 235- 44.
- Committee on obstetric practice (2002). ACOG Committee opinion. Mode of term singleton breech delivery. Number 265, December 2002, American College of Obstetricians and Gynecologists. Int. J. obstet. Gynecol. 77: 65-66.
- Cunningham FG, Gant NF, Leveno KJ, Gilstrap LC, Hauth JC, Wenstrom KD (2001). Malpresentation and cord prolapse, caesarean section, William's obstetrics. New York: McGraw- Hill 21<sup>st</sup> edition, ch. 22, pp. 509- 513.
- Danieliën PJ, Wang J, Hall MH (1996). Long term outcome by method of delivery of fetuses in breech presentation at term: Population based follow up, B. J. Med. 312: 1451- 1453.
- Daskalakis G, Thomakos N, Anastasakis E (2007). Cesarean versus vaginal birth for term breech presentation in 2 different study periods. Int. J. Gynecol. Obstet. Jan.
- David KJ, Steen PJ, Weiner CP, Bernard G (2005). "Breech presentation" High Risk pregnancy USA: Saunders 3<sup>rd</sup> edition. Chapter 64; pp. 1334-1358.
- David M, Luseley PNB (2004). Breech Presentation, Obstetrics and Gynecology An evidence- based text for MRCOG. London: Arnold 1<sup>st</sup>

## 09. Basic Res. J. Agric. Res. Rev.

- edition. Chapter 35; pp. 413 - 426.
- Fischer R, Witlin A, Legro RS, Gaupp FB, Shulman LP (2006). "Breech presentation". Published by e medicine. <http://www.emedicine.com/obstet and gynecol>. This page was last updated on: 10<sup>th</sup> of July 2006.
- Gimovsky ML, Wallace RZL, Schifrin BS, Paul RH (1983). Randomized management of the non frank breech presentation at term: A preliminary report. 146: 34-40.
- Guiliani A, Scholl WM, Basver A, Tamussino KF (2002). Mode of delivery and outcome of 699 term singleton breech deliveries at a single center. *Am. J. Obstet. Gynecol.* 187:1694–8.
- Hannah ME, Hannah WJ, Hewson SA, Hodenett ED, Saigal S, Willan AR (2001). Planned cesarean section versus planned vaginal birth for breech presentation at term: Randomized Multicenter Trial, survey of anesthesiology. 356; 1375- 1383.
- Herbst A, Thorngren- Jerneck K (2002). Mode of delivery in breech presentation at term, increased neonatal morbidity with vaginal delivery. *Acta obstet gynecol Scand*, 81(11): 1091-1092.
- Hofmeyer GJ, Kulier R (2000). Cephalic version by postural management for breech presentation; *Cochrane Database syst, Rev*; 2: CD000051.
- Hofmeyer GJ (2001). ECV facilitation for Breech presentation at term, *Cochrane database system Rev.* 4: CD000184.
- Keith DE (1999). Malpresentation and malposition, *Dewhurst's text book of Obstetric and Gynecology for Postgraduate*. London: black well science 6<sup>th</sup> edition. ch. 23 pp; 280- 283.
- Krebs L, Longhoff- Roos J, Bodker B (2002). Are intrapartum and neonatal death in breech delivery at term potentially avoidable? A blinded Controlled audit. *J. perinatal. Med.* 30: 220- 224.
- KuMari AS, Grundsell H (2004). Mode of delivery for breech presentation in grand multiparous women. *Int. J. Gynecol. obstet.* 85(3): 234- 9.
- Lennox CE, Kwast BE, Farley TM (1998). Breech labor on WHO partograph. *Int. J. Obstet. Gynecol.* 62: 117- 127.
- Miller- Mc Fvers G (1997). Breech presentation, *Instruction for obstetric and gynecological- patients*. Philadelphia, USA: 2<sup>nd</sup> edition; pp-37.m
- Nahid F (2000). Outcome of singleton term breech cases in the pretext of mode of delivery. *J. Pak. Med. Assoc.* 50:81-5.
- Reijner EP, Roumen FJ (2001). More moderate neonatal morbidity in the case of non-randomized vaginal delivery of term breech pregnancies; *Ned Tijdschr Geneesk.* 145(32):1558-61.
- Rietberg CC, Elferink-Stinkens PM, Brand R, Van loon AJ, Van Hemel OJ, Visser GH (2003). Term breech presentation in the Netherlands from 1995- 1999: Mortality and morbidity in relation to the mode of delivery of 33824 infants. *BJOG.* 110(6):604- 9.
- Rietberg CC, Elferink-Stinkens PM, Visser GH (2005). The effect of the Term Breech Trial on medical intervention behaviour and neonatal outcome in The Netherlands: an analysis of 35,453 term breech infants. *BJOG.* 112:205–9.
- Rivlin ME, Marn RW, Wisner WL (1999). Breech presentation, manual of clinical problem obstetrics and gynecology. New York, London: Lippincott Williams and Wilkins; 5<sup>th</sup> edition. Chapter, 28: pp. 143-145.
- Sanchez R, Wells TL, Adair CD, Arcelin G, Kaunitz AM, Wells DS (2001). Rout of breech delivery and maternal and neonatal outcomes; *Int. J. gynecol. obstet.* 73(1):7-14.
- Studd T (1998). *Management of the Breech, progress obstetrics and gynecology*. London, New York: Churchill Livingstone, volume 13. ch. 7, pp 87-97.
- Thomas J. Bader, HelenI Frederickson, Louise Wilkins- Haug (2003). Malpresentation. *Ob/ GYN Secrets*. Philadelphia: Hanley and Belfus, INC.3<sup>rd</sup> edition. ch. 62: pp, 297- 299.
- Vernon D (2006). "Breech birth" by W. Smellie, published by Wikipedia2006. "[http://en.wikipedia.org/wiki/Breech\\_birth](http://en.wikipedia.org/wiki/Breech_birth)."
- Whitefield CR (1995). *Malpresentation of occiput of obstetrics and gynecology for postgraduate*. London: Black well Science 5<sup>th</sup> edition. ch. 24, pp. 353- 367.
- William MG, Shauna MH, Nina MB, Beate D (2003). Vaginal versus caesarean delivery for breech presentation in California: A population- based study *obstet and gynecol*, 102:911- 917.