ORIGINAL ARTICLE

Effect of Mode of Delivery on Perinatal Outcome in Breech Presentation

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ABSTRACT

Background: Breech presentation is most common mal-presentation at term comprising and incidence of 3-4%. There is still considerable controversy in obstetrical management of breech presentation. Since late sixties the question of whether a breech should be delivered vaginally or by caesarean section has been discussed with special reference to fetal outcome. Breech presentation is associated with increased perinatal mortality and morbidity.
Aim: To improve perinatal outcome in breech presentation. To find out best mode of delivery for breech presenting fetuses at term.
Setting: This study was carried at Services Hospital, Lahore
Duration of Study: June 2000 to August 2001.
Study Design: Prospective Cohort study.
Sample Size: One hundred patients, 50 cases of caesarean section group and 50 cases of vaginal delivery group.
Results: Out of 3510 women delivered from June 2000 to August 2001, 124 were full term breech deliveries, accounting for an incidence of 3.5%. Caesarean section rate was 60% for breech deliveries. Fifty cases of C/section and 50 cases of vaginal deliveries were included in the study and results were compared. Perinatal mortality in breech babies delivered vaginally was 2% as compared to 0% in C/section. Perinatal morbidity was higher in vaginally delivered breech babies but none of them was of serious nature. All of them recovered. Maternal complications were slightly higher in C-section groups.
Conclusion: There is no firm evidence to recommend systemic elective caesarean section for all breech fetuses at term. Large unbiased studies are needed to determine whether a potential benefit for the new born out weight the increased risk for mother associated with elective caesarean section.
Keywords: Breech, Mode of delivery, Caesarean section.

INTRODUCTION

When presenting part of the fetal is buttocks and podalic extremities comprising of limbs or knee or foot, it is known as breech presentation. Breech presentation is most common mal-presentation at term comprising and incidence of 3-4%[1]. There is still considerable controversy in obstetrical management of breech presentation[2]. Since late sixties the question of whether a breech should be delivered vaginally or by caesarean section has been discussed with special reference to fetal outcome[3].

Breech presentation is associated with increased perinatal mortality and morbidity[4]. Perinatal mortality and breech presentation is 3.2% which is four times higher than vertex. In about 50% of cases cause of breech presentation could not be found out. Various aetiology of breech presentation include preterm delivery, congenital malformation, uterine anomalies, oligo and polyhydrominos, placenta praevia, low parity and multiple pregnancy.

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Delivery in breech presentation remains controversial (Rovinsky et al 1973; Croughan-Minihane et al, 1990; Kiely 1991; Thorpe-Beeston et al, 1992; Cheng & Hannah 1993; Erkaya et al, 1997). Infants who begin the birth process in breech presentation for greater danger of morbidity and mortality than their vertex peers. More and more breech presentations are being delivered by caesarean section and many practitioners now virtually exclude trial of labour and vaginal delivery when caesarean section was recommended on a routine basis.

There have been only 2 RCT comparing elective caesarean section and planned vaginal birth for term breech fetuses[5]. These trials were of only moderate quality. These trials were carried out by John Colles, in 1980 & Gimovsky 1983.

MATERIAL AND METHODS

It was a prospective cohort study carried out on 100 patients with breech presentation at term. One hundred twenty four consecutive full term breech deliveries conducted in Services Hospital, Lahore during study period. Out of these 50 were vaginal

deliveries and 50 were caesarean sections. All these 50 vaginal deliveries and consecutive 50 caesarean sections were included in my study and results were compared. Both book and unbooked patients were taken in this prospective study. All women with breech presentation at term pregnancy (37-42 weeks) were studied. Pre-term breech and breech with congenital anomalies were excluded from study. Booked patients were evaluated in antenatal clinic for trial of vaginal delivery. Inclusion criteria for trial of vaginal delivery included extended breech presentation, adequate pelvis, EFW <4kg in multigravida and <3.5kg primigravida and head should be flexed.

Counseling of the patients done regarding risk and benefits of vaginal delivery and caesarean section to mother and fetus and mode of delivery was decided according to inclusion criteria for vaginal delivery and wishes of couple. Booked patients were assessed in antenatal clinic. They were assessed for vaginal delivery or caesarean sections at 36 weeks of gestation. Pelvic examination was done at 36 weeks to rule out feto pelvic disproportion. If decided for caesarean section, EL. LSCS was done at 38 weeks of gestation. If allocated to trial of vaginal delivery patients were advised to come early in labour. Progress of labour was assessed by maintaining partogram. Induction and augmentation of labour was not done. Baby weight, APGAR score was evaluated and recorded by paediatric resident. Postnatal maternal and fetal complications were recorded. Maternal outcome was assessed by maternal mortality, morbidity including endometritis, PPH, UTI, wound infection. Fetal outcome was assessed by perinatal mortality and perinatal morbidity including need of admission to neonatal ICU, tachyponea, birth, fits and hypotnia.

RESULTS

Services Hospital is a teaching hospital and affiliated with Postgraduate Medical Institute, Lahore. It is a tertiary care hospital with 3 units of Obstetrics and Gynaecology. This study was conducted from June 2000 to August 2001. Prevalence of breech presentation was 3.5% (Table 1). In majority of fetuses the weight ranges between 2.5 to 3kg (54%). In weight of 2.1-2.5kg the rate of vaginal delivery was slightly higher while in the weight of 2.6-3kg. The rate of caesarean section was slightly higher. No baby was >4kg (Table 2).

In my study the parity significantly affected the mode of delivery (Table 3). As parity increases the chances of vaginal delivery are more. In this study booked and unbooked patients were taken (Table 3). Mode of delivery was not significantly affected in booked or unbooked patients. In vaginal delivery perinatal mortality was higher as compare to caesarean sections. One fetus in vaginal delivery group had fresh still birth as compared to non in caesarean section. Perinatal morbidity was also higher in breech fetuses delivered vaginally as compared to those delivered by caesarean section (Table 4). Eight babies were admitted in NICU as compare to none by caesareans section. Although all eight babies were discharged from NICU (Table 5).

Table 1: Prevalence of breech presentation

Total numbers of deliveries	3510
Total numbers of breech presentation at term	124
Prevalence of breech presentation	35%

Table 2: Comparison of fetal weight in vaginal delivery and caesarean section.

Weight (Kg)	Vaginal delivery	Caesarean section
2	0	2(4%)
2.1-2.5	16(32%)	4(8%)
2.6-3.0	24(48%)	30(60%)
3.1-3.5	6(12%)	10(20%)
3.6-4.0	4(8%)	4(8%)
4.1-4.5	0	0

Mean = 2.8kg 3.7kg P value 0.01

Table 3: Distribution of booked/unbooked patients in vaginal delivery and caesarean section

	Vaginal delivery	Caesarean section
Booked	28	22
Unbooked	22	28

Table 4: Comparison of perinatal mortality in vaginal delivery and caesarean section

	Alive	%age	Dean	%age
Vaginal delivery	49	98.0	1	2.0
Caesarean section	50	100.0	0	0.0

Table 5: Comparison of perinatal morbidity in vaginal delivery and caesarean section

Complications	Vaginal delivery	Caesarean section
Admission to NICU	8 (80%)	2 (20%)
Need of assisted ventilation	0	0
Tachypnoea	1 (50%)	1 (50%)
Neonatal seizures	1 (50%)	1 (50%)
Birth trauma	0	0

P value >0.05

Table 6: Comparison of Apgar score in vaginal delivery and caesarean section

	Vaginal delivery	Caesarean section
Apgar score <7 in 1 minute	38 (76%)	44 (88%)
Apgar score <7 in 5 minute	12 (24%)	6 (12%)

P value > 0.05

Table 7: Maternal morbidity in vaginal delivery and Cesarean section

	Vaginal delivery	Caesarean section
Endometritis	0	0
U. T. I.	0	2
Pulmonary infection	0	0
P.P.H.	0	0
Anemia	1	3
Cardiopuolmonary arrest	0	0
Wound infection	0	0

The present study showed that Apgar score was <7 in one minute in 38 cases in vaginal delivery and in 44 cases in caesarean section. While Apgar score was <7 in 12 cases in vaginal delivery and 6 cases in caesarean section (p value >0.05). Out of 6 cases with Apgar score >7 in 5 minutes in caesarean section group. Four were recovered and 2 were shifted to NICU (Table 6). Table 7 shows the prevalence of maternal morbidity was 4% in vaginal delivery and 10% in caesarean section.

DISCUSSION

Breech presentation is associated with high perinatal morbidity and mortality. Mode of delivery is yet unresolved problem in obstetrics. Some clinicians have recommended policy of caesarean section for breech presentation at term based on none randomized studies. Anecdotal experience and medicolegal concern[6]. Others recommended vaginal delivery in selected cases because of lower morbidity and mortality in mothers.

In the present study the caesarean section rate for term breech fetuses was 60% and vaginal delivery rate was 40%. This is contrary to the study of Zaideh[7] who found caesarean section rate of 32%. A study carried out by Oliver Iron[8], this is consistent with a retrospective study found caesarean section rate of 62% and vaginal delivery rate of 38% which is comparable with my study. In my study mean weight of babies in vaginal delivery group was 2.8kg and in caesarean section group mean weight was 3.7 and p value is p <0.01, which is statistically significant.

There was only one FSB in vaginal delivery. Weight of the baby was 3.8kg of a multiparaous women and death was associated with difficult vaginal delivery. World Health Organization defined low perinatal mortality as <20 per thousand and high perinatal mortality as >20 per thousand. In Pakistan the perinatal mortality is 136/1000[9].

In my study the perinatal mortality is 1(2%) in vaginal delivery 0% in caesarean section. The difference is statistically not significant. This accounts perinatal mortality of 2% and 20/1000. The study is consistent with the study of Gul.[10] In her study there was no neonatal mortality in caesarean section group. However in her study there were 7(3.6%) fresh still birth and 14 neonatal deaths (7.2%) in vaginal delivery group[10].

This study is contrary to the study of term breech trail carried out by Hannah[11] and conducted as controlled randomized trial in 26 countries to determine the best mode of delivery in breech presentation at term. Randomization was centrally controlled at University of Toronto Maternal Infant and Reproductive Health Research Unit. Pakistan was also included in the study 2088 women were randomized 1045 were assigned planned vaginal delivery and 1043 were assigned planned caesarean sections. They concluded from their study that perinatal mortality, neonatal mortality and serious neonatal morbidity were significantly lower for the planned caesarean section group, then for the planned vaginal delivery group (17 of 1039, 1.6% versus 52 of 1039, and 5%). They concluded that planned caesarean section is better than planned vaginal delivery.

There was only 1 perinatal death in my study. It was a fresh still birth. Patient was a booked case and was a multiparous (G8P5+2) patients. She presented in labour room with labour pains. Estimated fetal weight of 3.5kg. Progress of labour was good. After the delivery of the body there was difficulty in the delivery of the head of the baby. When the baby was born it was a fresh still birth. In term breech trial there were total 16 perinatal deaths. Out of these 16, 6(37%) were associated with difficult vaginal delivery.

The present study showed that Apgar score was <7 in one minute in 38 cases in vaginal delivery and in 44 cases in caesarean section. While Apgar score was <7 in 12 cases in vaginal delivery and 6 cases in caesarean section (p value >0.05). Low Apgar score in vaginal breech delivery was probably due to pressure on umbilical cord during delivery. Low Apgar score in caesarean section was probably due to effect of anesthetic drugs. Out of 12 cases with Apgar score >7 in 5 minutes in vaginal delivery group. Ten were recovered and scored 10/10 in 10 minutes. Only two were shifted to NICU.

Out of 6 cases with Apgar score >7 in 5 minutes in caesarean section group. Four were recovered and 2 were shifted to NICU. The difference of admission to NICU is statistically significant (p 0.05). But when we look into actual causes of admission to NICU, all of them were not related to mode of delivery. This study is contrary to the study of Bingham[12] who found that one minute Apgar score was significantly lower in patients who underwent trial of vaginal delivery. But in this study all significant differences

disappeared and there was no bay with Apgar score <5 in 5 minutes in either group.

A study done by Gul[10] she found vaginally delivered group 12 (6.2%) neonates had Apgar score <7 and 3 neonates in group of caesarean section had Apgar score <7, but they were resuscitated. Two babies were having tachyponea, one in caesarean section group and second one in vaginal delivery group. Both were having transient tachyponea and it was settled.

Induction of labour was not done in my study. However Fait[13] showed that induction of labour in patients with breech presentation with an unriped cervix may be attempted in selected cases. He found that it was efficacious (vaginal delivery rate 52.2%) and safe for both fetus and mother.

In Pakistan maternal mortality is 340/1000 deliveries. There were only 18% of mothers get help from personal trained in conduction of delivery. In this study there was no maternal death in both groups. This study is consistent with term breech trial. In my study the prevalence of maternal morbidity was 4% in vaginal delivery and 10% in caesarean section.

None of them was of serious nature. This study is contrary to the study of Christian et al[14] who found that incidence of uterine infection and postpartum anemia was statistically significant in women, who underwent caesarean section as compared to those who had vaginal delivery. Bashir et al[15] in their study found the incidence of maternal complications higher in caesarean section group (37.5%) than in vaginal delivery group (23.5%). In another study carried out by Tracy et al[16] also found that there was significantly higher incidence of postpartum anemia ($p < 0.01$) in the group of caesarean section as compared to vaginal delivery.

CONCLUSION

Due to increased perinatal mortality and morbidity in breech presentation, mode of delivery of the term breech is one of the intense controversial topics in obstetrics. The prospective mother and father should be fully informed of the hazards of breech delivery by vaginal route and caesarean section. There opinion should be taken in to regard.

Perinatal morbidity was also higher in vaginally delivered breech fetuses as compared to those delivered by caesarean section, but none of these were of serious nature. So I concluded from my study that in carefully selected cases trial of vaginal delivery is justified. Routine use of caesarean section 100% for term breech babies is not justified. It is of special importance in a setup of our country in which people want large families and with the risk that women with previous scare on uterus may not come to hospital in next delivery. Because of the 4 small sample size and non randomized study, the study bias may be taken in to account.

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