

IS BREECH PRESENTATION IN NULLIPAROUS WOMEN AT TERM AN ABSOLUTE INDICATION FOR CESAREAN SECTION?

Adel Abu-Heija, MD; Abdelhai Mohammed Ali, MD

Background: The aim of this report was to study the perinatal outcome of singleton breech presentation in nulliparous women who delivered after 37 weeks, either vaginally or by cesarean section, and whether by elective surgery or emergency, and to identify the indications for cesarean sections.

Subjects and Methods: This is a retrospective study conducted at King Fahd Hospital of the University, Al-Khobar, Saudi Arabia, to compare perinatal mortality and morbidity of singleton term breech infants delivered vaginally and by cesarean section in nulliparous women.

Results: There were 112 singleton term breech presentations, of which 96 (85.7%) were allowed to have a trial of labor. Of these, 67 (69.8%) had a successful vaginal delivery. Women who delivered by elective cesarean section were significantly older than those who delivered vaginally ($P < 0.0001$), and those who delivered by emergency cesarean section ($P < 0.004$). The infants delivered by cesarean section were heavier in weight than those delivered vaginally ($P < 0.0001$). There were no significant differences in 5 minute Apgar scores and perinatal mortality between the groups.

Conclusion: With proper selection of nulliparous women with breech presentation for vaginal delivery, cesarean section can be avoided in the majority of cases without compromising the perinatal outcome.

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Key Words: Term breech, cesarean section, vaginal delivery, nulliparity.

Elective cesarean section (CS) has become the preferred method of delivery for breech presentation, particularly in nulliparous women, even though information on the long-term benefits for infants is still lacking. Lieberman et al.¹ found that the risk for the mother and child in the nulliparous women is high with term singleton breech, and suggests CS as the preferred route of delivery. But other studies show that nulliparity is not a major indication for CS and the concept of elective CS in all primigravid breeches at term should be reconsidered.^{2,3} Many trials have shown an increase in maternal morbidity associated with elective CS compared with planned vaginal delivery.^{4,5} Others have reported an increase in the short-term neonatal morbidity when vaginal delivery was attempted,⁶ but this has been disputed by Danielian et al.⁷ We conducted this study to compare perinatal mortality and morbidity in planned vaginal delivery with elective and emergency CS for breech presentation at term in nulliparous women in a referral teaching hospital in the Eastern Province of Saudi Arabia.

Subjects and Methods

In this retrospective study, the maternal and neonatal records of all singleton term breech babies (≥ 37 completed weeks' gestation) delivered by nulliparous women at King Fahd Hospital of the University, Al-Khobar, between January 1991 and December 2000 were reviewed. Breech delivery was allowed in all nulliparous women unless there was a contraindication for vaginal delivery, such as a large baby (when the clinical and ultrasound estimation of the fetal weight was > 3500 g), antepartum hemorrhage, fetal distress, footling breech, failure to progress in labor, previous uterine scar, severe preeclampsia and long-term infertility.

The criteria for allowing vaginal delivery included adequate pelvis, estimated fetal weight (clinical and sometimes by ultrasound) ≤ 3500 g and no evidence of hyperextension of the fetal head on ultrasound. Adequacy of the pelvis was assessed by vaginal examination at term, and x-ray pelvimetry was rarely done in the series. Induction of labor was performed only for obstetric indications.

Fetal presentation was confirmed by ultrasound at the beginning of labor and electronic fetal heart monitoring was used in labor. Epidural analgesia was available on request. Oxytocin was used for augmentation of labor. All the deliveries were attended by an experienced senior

From the Department of Obstetrics and Gynecology, King Fahd Hospital of the University, Al-Khobar, Saudi Arabia.

Address reprint requests and correspondence to Dr. Abu-Heija: Department of Obstetrics and Gynecology, King Fahd Hospital of the University, P.O. Box 2208, Al-Khobar 31952, Saudi Arabia.

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TABLE 1. Maternal characteristics and neonatal outcome of the study population.

	Vaginal delivery n=67	Emergency cesarean section n=29	Elective cesarean section n=16	P-values
Maternal age (years)	23.6±4.2	24.6±4.2	28.7±4.3	NS* <0.0001** <0.004***
Gestational age (weeks)	39.0±1.32	39.9±1.37	39.2±1.16	NS
Fetal weight (grams)	2825±466	3307±471	3567±804	<0.0001 <0.0001 NS***
5 minute Apgar score <7, n (%)	6 (8.95)	0	0	NS
Admission to special care baby unit	28 (41.8)	(9) 31.0	7 (43.8)	NS
Congenital malformations	3 (4.5)	0	1 (6.3)	NS
Stillbirth	1 (1.5)	0	0	NS
Early neonatal death	2 (3.0)	0	0	0
Uncorrected perinatal mortality	44.8 per 1000	0	0	NS
Corrected perinatal mortality	0	0	0	NS

Values are mean±SD; *vaginal delivery vs. emergency cesarean section; **vaginal delivery vs. elective cesarean section; ***emergency cesarean section vs. elective cesarean section.

TABLE 2. Indications for cesarean sections.

Indication (%)	Emergency cesarean section (n=29)	Elective cesarean section (n=16)
Large baby		9 (56.25)
Failure to progress	22 (75.9)	
Fetal distress	3 (10.3)	
Cord prolapse	2 (6.9)	
Footling breech	1 (3.45)	
Previous myomectomy scar		1 (6.25)
Intrauterine growth retardation		2 (12.5)
Antepartum hemorrhage		1 (6.25)
Preeclampsia and eclampsia	1 (3.45)	
Diabetes mellitus		1 (6.25)
Infertility		2 (12.5)
Total	29 (100)	16 (100)

resident on duty. Assisted breech deliveries were performed using the Mauriceau-Smellie-Veit technique or Piper forceps for the aftercoming head. A pediatrician attended every delivery. Emergency CS was performed when there was fetal distress or failure to progress, and was planned at 38-39 weeks' gestation. Statistical analyses were performed using Mann-Whitney or chi-squared tests, and values were considered significant at $P<0.05$.

Results

During the study period, there were 26,206 deliveries. The total number of breech deliveries in the hospital during this period was 623 (2.37%), of which 112 (18.0%) were in nulliparous women. Ninety-six women (85.7%) were indicated to have vaginal delivery, of which 67 (69.8%) delivered vaginally. Twenty-nine women (30.2%) delivered by emergency CS and 16 (14.3%) by planned CS. Table 1 shows that women who delivered vaginally or by emergency CS were significantly younger than women who delivered by elective CS ($P<0.0001$ and $P<0.004$, respectively). This may be due to the fact that older women tend to have heavier babies, and also tend to have other

obstetric complications, such as preeclampsia, antepartum hemorrhage and diabetes mellitus. Also, babies born to women who delivered vaginally were significantly smaller than those who delivered by either emergency or elective CS ($P<0.0001$). This may be the reason why the most common indication for elective CS was large baby in 56.25% of cases, and failure to progress (mainly due to large baby) was the leading indication for emergency CS (75.9%). There were no significant differences in 5 minute Apgar scores, admission to the special care baby unit, congenital malformation, stillbirths and neonatal deaths between those who delivered either vaginally or by CS, whether it was emergency or elective.

The two neonatal deaths in this study were due to hydrocephalus and were delivered vaginally. Table 2 shows the indications of emergency and elective cesarean section. The most common indications for emergency CS were failure to progress in 75.9% of cases, followed by fetal distress and cord prolapse in 10.3% and 6.9%, respectively. The most common indications for elective CS were large baby in 56.25%, followed by intrauterine growth retardation and infertility in 12.5% of cases each. In this study, there was only one case of birth trauma (fracture femur) delivered vaginally by breech extraction due to fetal distress.

Discussion

Breech presentation in general and in nulliparous women in particular at term has been managed in different ways, such as external cephalic version, elective cesarean section, and a trial of vaginal delivery. Many authors now recommend trial of labor for breech presentation in nulliparous women. Wisestanakorn et al.² reviewed 87 nulliparous women with frank breech presentation at term delivered vaginally with no perinatal deaths. Anderman et al.⁸ reviewed 46 cases of breech presentation at term in nulliparous women and concluded that properly selected

primigravid term breech infants could be delivered vaginally without increase in the perinatal mortality and with immediate outcome comparable to that found with cesarean section. In 1995, Lieberman et al.¹ reviewed 264 nulliparous women with breech presentation at term and found that the 1 and 5 minute Apgar scores were worse in vaginally delivered babies. Also, he found that neonatal mortality was significantly more frequent after vaginal births ($P<0.01$) and that babies born vaginally had higher non-neurological trauma and pathological neurological signs ($P<0.01$).

In our study, 69.8% of women in the planned vaginal delivery group delivered vaginally, which is comparable to those women (nulliparous and multiparous) with breech presentation at term reported in the literature (70% and 74%, respectively).^{9,10} We also found that there were no significant differences in 5 minute Apgar scores, and nor were there any cases of intrapartum or early neonatal deaths in those delivered vaginally compared to those delivered by elective and emergency CS.

There was no record of difficult vaginal delivery in our study, which may be the result of the proper selection of patients for trial of labor.

A limitation of this study is the absence of information on long-term infant and maternal outcomes. One study has compared the long-term outcome of infants delivered in breech presentation at term and found no difference in terms of severe handicap, developmental delay, neurological deficit or psychiatric referral, in those delivered vaginally or abdominally at term.⁷ In a multicenter study, Hannah et al.¹¹ reported that planned CS is better than planned vaginal delivery for all term fetuses with breech presentation, but in a country like ours, where the number of children per family is high, proper patient counselling prior to the planning of mode of delivery would

be appropriate in certain circumstances. This would be desirable in addition to proper patient selection and the presence of highly experienced physicians. Therefore, based on our results, there is no evidence to recommend elective cesarean section for breech delivery at term in nulliparous women. Successful vaginal delivery can be achieved without adversely affecting the perinatal outcome.

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