Breech delivery before and after the term breech trial recommendation

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ABSTRACT

Objective: To compare the outcome of breech delivery at term in women before and after the term breech trial (TBT) recommendation.

Methods: A retrospective study carried out at Abha Maternity Hospital, Abha, Kingdom of Saudi Arabia comprising 796 women with breech presentation at term who delivered at our hospital between May 1997 and February 2005 divided into 2 groups. Group 1 consisted of 394 patients who were delivered 4 years before the recommendation of the TBT, and group 2 comprised 402 patients delivered 4 years after the recommendation.

Results: There were no statistically significant differences between the 2 groups with regards to the mean maternal age and birth weight, $p>0.05$, however, parity, gestational age at delivery, booking status, and cesarean section (CS) rate reached statistically significant levels, $p<0.05$. Assisted vaginal delivery was conducted in 106 (26.9%) of patients in group 1 and 69 (17.1%) in group 2, this also was statistically significant. No statistically significant differences were found between the 2 groups regarding the perinatal mortality, low Apgar score, <7 at 5 minutes and complications during delivery, $p>0.05$.

Conclusion: There was a dramatic increase in the rate of CS without a corresponding improvement in the neonatal outcome in the years following the TBT recommendation in our hospital. We suggest that the policy is formulated to reduce the number of unbooked patients with breech presentation at term in our community to reduce the CS rate in these groups of patients.

Saudi Med J 2007; Vol. 28 (8): 1213-1217

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Received 6th November 2006. Accepted 24th March 2007.

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Vaginal delivery generally has been shown to be associated with lower risks for the mother than cesarean section (CS),[1,2] except breech presentation at term when planned CS is usually recommended.[3] However, the Term Breech Trial, (TBT)[3] a multicenter international randomized controlled trial of 2088 women, found no increased risk of maternal mortality or serious maternal morbidity during the first 6 weeks postpartum after planned CS in comparison with planned vaginal delivery. It also showed a 3-fold increase in perinatal mortality and serious morbidity in the planned vaginal delivery group, which was particularly high (5.7%) in countries with low background national perinatal mortality.[3,4] The authors suggested elective CS for all term fetuses in breech presentation, at least in countries with low national perinatal mortality. After the TBT, other authors have reported an increased incidence of neurological morbidity after planned vaginal delivery compared to elective CS, and came to the same conclusion as the TBT.[5,6] However, many other authors[7-10] vehemently challenged the methodology of the trial, and suggested that the original term breech trial recommendation should be withdrawn, one of the pitfalls being the incompatible variation of standard of care between participating centers. We have shown in previous reports that there was a rising CS rate among patients with breech presentation at our hospital over the years without significant improvement in the short-term for the mother or baby.[11] This study was conducted to compare the maternal and neonatal short-term outcomes in patients delivered in breech presentation at term before and after the recommendation.

Methods. The hospital record files of 796 patients who presented at the Abha Maternity Hospital with singleton breech presentation at term between May 1997 and February 2005

were retrieved from the delivery registry office. These patients were delivered either by planned elective CS, emergency CS, or vaginal breech delivery. At our hospital, there was no specific guideline regarding mode of delivery of the term breech while external cephalic version was not routinely offered. For the booked patients, the decision was taken antenatally with regards to the mode of delivery if the breech was presenting after 37 weeks. They were allowed a trial of vaginal breech delivery if they met the following criteria: 1. Singleton fetus, 2. Estimated fetal weight of less than 3500 gms according to FIGO recommendation, 3. No hyperextension of the head, 4. Breech in frank or complete breech position, 5. No previous CS and, 6. Clinically adequate pelvis. Continuous fetal monitoring during labor was mandatory as well as the presence of an experienced obstetrician. Syntocinon was rarely used for dysfunctional labor. Unbooked patients, including grand multigravidae admitted in labor at term were invariably delivered by CS irrespective of the cervical dilatation at admission. However, since the publication of the recommendation of the TBT, most of the breeches were delivered by elective CS at term. These patients were divided into 2 groups. Group 1 patients (394) were delivered by breech at term between May 1997 and early March 2001, and group 2 patients (402) delivered between late March 2002 and February 2005. The data collected from the files of these patients included booking status, maternal age, parity, abortion, gestational age at diagnosis of breech presentation, and gestational age at delivery. Others included mode of delivery, type of labor, complications during delivery, birth weight, Apgar score, and other post natal maternal and neonatal morbidity.

The data were coded and entered into an IBM compatible computer. Statistical analysis was carried out using the Statistical Package for Social Sciences Version 13. Student's t-test was used for quantitative variables, while the chi-square was used for qualitative data. The level of significance was set at 0.05%.

Results. During the 8-year study period from May 1997 to February 2005, 32429 deliveries were conducted at Abha Maternity Hospital, Abha, Saudi Arabia out of which 796 (2.45%) constituted term breech deliveries. The demographic data as well as other characteristics were shown in **Table 1**. No statistically significant differences were found in the mean maternal age, gestational age at diagnosis of breech presentation, and birth weight $p>0.05$. However,

Table 1 - Demographic and other maternal and fetal characteristics.

Characteristic	Group 1 N=394	Group 2 N=402	Significance
Age (years)	28.62 ± 6.37	28.46 ± 6.56	$p=0.73$
Parity	3.19 ± 3.30	2.67 ± 3.02	$p=0.02$
Gestational age at diagnosis of breech (weeks)	36.92 ± 4.39	37.19 ± 3.93	$p=0.42$
Gestational age at delivery (weeks)	39.02 ± 1.34	38.73 ± 1.12	$p=0.001$
Birth weight (gms)	3007.30 ± 503.1	3017.83 ± 144.8	$p=0.89$
Admission cervical dilatation (cms)	4.38 ± 2.55	3.69 ± 2.48	$p=0.049$

Data were expressed as mean ± SD

Table 2 - Type of delivery and complications during delivery.

Characteristic	Group 1 N=394 n (%)	Group 2 N=402 n (%)	Significance
Mode of delivery			
Cesarean section	288 (73.1)	333 (82.8)	$p=0.000$
Elective cesarean section	167 (42.4)	245 (60.9)	$p=0.000$
Assisted vaginal breech delivery	106 (26.9)	69 (17.2)	$p=0.000$
Problems during delivery			$p>0.05$
Fractures	5	1	
Difficulty with after coming head	11	4	
Iatrogenic	0	1	
Dislocation of hip	12	13	
None	368	381	
Unbooked patients	270 (68.5)	246 (61.1)	$p=0.03$

statistically significant differences were observed in the mean gestation at delivery and cervical dilatation at admission, $p<0.05$. **Table 2** shows the booking status, type of delivery, and complications encountered during delivery. Statistically significant differences were found in the overall rates of CS, elective cesarean, and assisted vaginal breech delivery, between the 2 groups, $p<0.05$. However, no statistically significant difference was found with regards to problems encountered during delivery. No statistically significant difference was found in the perinatal outcome between the groups, $p>0.05$, **Table 3**.

Discussion. This study shows that except for the increased CS rate for breech presentation at term in the period after the recommendation of the TBT in our hospital, no concomitant improvement on the short-term for fetal outcome was visible. There was an increase in the CS rate from 73%, 4 years before the trial in group 1 patients, to 82.8% in group 2 patients for breeches at term in our hospital since the recommendation. It is generally accepted in our profession that evidence based medicine is the way forward. However, it seems that with regards to the TBT, this is difficult to extrapolate to other practice conditions.[12] Prevailing local and cultural circumstances should therefore play a very important role in management options. For example, the fetal weight of less than 4000 gms recommended by the TBT as one of the criteria for assisted vaginal breech delivery will probably increase the risk of vaginal delivery for babies in our community. The plausible reason being that women from developing countries have smaller pelvic diameters compared with, for example, those of Caucasians. Nonetheless, we have shown in this study that by adopting the Fédération Internationale de Gynécologie Obstétrique (FIGO) recommended fetal weight of <3500 gms, the procedure did not adversely affect the baby. In our study, 68.9% of patients in group 1 were unbooked compared with 61.1% in group 2, and as such the mode of delivery could not be planned in advance before labor in most the cases. Although it seems reasonable to deliver these unbooked patients with breech presentation at term by emergency CS, unfortunately, this policy will further increase the CS rate. However, the number of unbooked patients presenting in labor with breech presentation at term can be reduced by patients' education through the media and also by having patient friendly antenatal clinics with reduced waiting time. In this way, more patients will be available for proper assessment for suitability for assisted vaginal breech during the antenatal period and as a result more obstetricians will train in the art of assisted vaginal breech delivery. It is noteworthy that in some centers involved in the TBT, the average number of vaginal breech deliveries during the study period of 3 years was only 6 cases. Therefore, the experience in handling vaginal breech deliveries would appear inadequate in some centers and this possibly might influence the overall results. The effect of repeat CS on future reproduction has been variously and widely discussed. In our environment, multiparity is still the norm especially with the pride that goes with male offspring, which makes some women keep trying sometimes for the tenth time for a male baby. Kumari et al[13] showed in their study that vaginal delivery could be achieved in 85% of grandmultiparous women without any adverse perinatal outcome. Also, as a consequence of multiparity, it is not uncommon to see women having their seventh even eighth cesarean in our environment. It is for this reason that placenta praevia accreta with its accompanying morbidity and mortality is not uncommon in our hospital. To add to this, it was shown that CS is associated with lower subsequent natural fertility.[14] Still referring to the TBT, the subsequent reports showed that after 2 years, mothers in the CS group had more constipation than the vaginal delivery group.[15] Previous observational studies have found a lower risk of urinary and fecal incontinence, but a higher risk of other adverse maternal outcomes after CS.[16-19] It seems therefore that a more liberal attitude towards vaginal breech delivery will be appropriate in our community. No doubt, some of the patients who had emergency CS because they were unbooked and presented in active labor might have had an uneventful vaginal breech delivery if they were booked and properly assessed and found suitable for assisted vaginal breech delivery. Nonetheless, the TBT had in a way reduced the number of patients with breech presentation that would have been useful in the training of obstetricians in the art of vaginal breech delivery. Our study showed that even though there is no departmental policy to adhere to the TBT recommendation, the rates of elective CS for term breech increased while there was also a decrease in the assisted vaginal delivery rate. The fear of litigation may be a possible cause for this. Why congenital malformation was found more commonly in babies who were delivered 4 years after the TBT is difficult

Table 3 - Perinatal outcome

Characteristic	Group 1 N=394 n (%)	Group 2 N=402 n (%)	Significance
Perinatal death	6 (1.5)	13 (3.2)	$p=0.11$
Low Apgar score, <7 at 5 mins	11 (2.7)	12 (2.9)	$p=0.58$
Congenital malformation	27 (6.8)	44 (10.9)	$p=0.042$

to explain, although this is probably an incidental finding. Nonetheless, congenital malformations have been seen to be one of the risk factors for breech presentation.[20] Our study has shown no statistically significant difference in the fetal outcome pre- and post-recommendation of authors of the TBT. However, it is interesting to note that there were more perinatal deaths in the period following the TBT, when more patients were delivered by CS. This may be due to the congenital malformations that were higher in babies born after the TBT recommendation. At the same time, there were more babies who suffered from trauma during breech delivery (vaginal and cesarean) in the years prior to the recommendation, but this did not reach the level of significance. The initial report of the TBT showed a clear advantage for the baby at 6 weeks if delivered by planned CS. However, the same authors[21] followed up these children after 2 years and concluded that planned CS is not associated with a reduction in the risk of death or neuro-developmental delay. In our litigious society, the route that appears to minimize professional liability is usually taken, and therefore the number of vaginal breech deliveries will decrease. As the vaginal breech deliveries become less common, so will the expertise of the obstetrician. In the US survey[22] from 1993, 55% of faculty physicians felt that residency training for vaginal breech delivery was inadequate. In 1996, only 39% of respondents to a questionnaire reported that they had received adequate training in vaginal breech delivery in the United Kingdom.[23] The same decline in vaginal breech delivery training was also reported in 1999 from Australia.[24] This will pose an increased risk to the fetus when an inadequately trained obstetrician is faced with an unavoidable vaginal breech delivery. Where do these conflicting results leave the practicing obstetrician? It is important that centers that still desire to conduct vaginal breech delivery like our community where a good proportion (30%) of obstetric patients are of high parity should adhere strictly to the protocol for vaginal breech delivery. Several reports including those from the Scandinavian countries[25-29] where the tradition of vaginal breech delivery is held very dearly have shown that the procedure can be performed without jeopardizing the health of the fetus as long as the patients are well selected and with expertise at hand.

In conclusion, this study showed that the CS rate for breech delivery at term increased in our hospital after the recommendation of the TBT. However, no improvement in the short-term fetal outcome 4 years after the recommendation was visible. We recommend a more liberal approach towards vaginal delivery in term breech. Patient education and more friendly antenatal clinics are needed to reduce the number of unbooked patients, and therefore the number of CS performed for breech at term.

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Related topics

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