Pregnancy outcome in singleton term breeches from a referral hospital in Saudi Arabia

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Summary

Objective: **To compare the pregnancy outcome in women with singleton breech presentation at term delivered by caesarean section (CS) and vaginal breech delivery.**

Design: **A retrospective study**

Setting: **Abha Maternity hospital, Saudi Arabia.**

Material and Methods: **573 women with singleton breech presentation at term who delivered between January 1994 and December 2000 formed the basis of this study. There were 166 patients (28.9%) who had assisted vaginal breech delivery (AVBD) and 407 patients (71.1%) who were delivered by CS.**

***Results*: There were no statistically significant differences in the mean age and number of abortions between the two groups, (p>0.05) but statistically significant differences were found regarding the birth weight and parity respectively (p<0.05). One hundred and fourteen (19.7%) of patients had a previous CS, and of these 2(1.75%) delivered vaginally. Caesarean section was carried out electively in 161 (39.5%) of the 407 who had caesarean delivery. There were no statistically significant differences in the perinatal mortality rates, congenital malformation rates and Apgar score of less than 7 at 5 minutes in babies born by AVBD and CS, (p>0.05). There was statistically significant difference in birth trauma (p<0.00001).**

***Conclusion*: Vaginal breech delivery is strongly associated with birth trauma in our community. It is recommended that attention should be given to trainee obstetrician in selective external cephalic version at term and also the procedure of AVBD so as to reduce the caesarean section rate and also neonatal morbidity in term breeches in our community.**

Keywords: ***Pregnancy outcome, Singleton breech, Vaginal delivery, Caesarean, External cephalic version.***

Résumé

Résultat de grossesse en matière d'accouchement de singletons par le siège.

Objectif: Comparer le résultat de grossesse chez des femmes avec présentation de singleton par le siége au terme d'accouchement à travers la césarienne (CS) et accouchement vaginal.

Plan: Une étude rétrospective.

Cadre: Maternité d'Abha, Arabie Saoudite.

Matériel et Méthodes: 573 femmes avec présentation de singletons par le siège au terme d'accouchement qui ont accouché entre 1994 et décembre 2000 constitue la base de cet étude. Il y a 166 patientes soit 28,9% qui ont eu accouchement vaginal assisté et présentation par le sièges (AVBD) et 407 patientes soit 71,1% qui ont accouché à travers la césarienne.

Resultats: Il n'y a aucune différence d'importance statistique en matière d'âge moyen et chiffre d'avortements entre les deux groupes, (P>0,05) mais on a remarqué des differences statistiquement importantes en ce qui concerne le poids de naissance et parité respectivement (P<0.05). Cent quatorze soit 19,7% des patientes avaient eu des cas des césariennes précédentes, et entre ces patientes 2 soit 1,75% avaient eu accouchement vaginal. On a effectué, d'une manière facultative, la césarienne chez 161 soit 39,5% entre 407 cas qui ont eu accouchement césarien. Il n'y a aucune différence d'importance statistique pour ce qui est de taux de mortalité périnatale, taux de malformation congénitale et le Score Apgar de moins de 7 en 5 minutes chez des bébés accouchés à travers AVBD et CS, (P>0,05). Il y a un écart de statistique très important en ce qui concerne le traumatisme de naissance (P<0,00001).

Conclusion: Accouchement par le siège vaginal est vigoureusement associé avec traumatisme de naissance dans notre communauté. Nous conseillons qu'on doit prêter attention aux stagiaires d'obstetriciens dans la version à terme céphalique externe sélectif et aussi le protocole de AVBD afin de réduire le taux de la césarienne et aussi la morbidité néonatale en terme des présentations par le siège dans notre communauté.

Introduction

The management of singleton breech presentation at term has experienced changes back and forth in the last decade[1-5]. Recently, several studies have revealed better fetal outcomes when planned CS is carried out for singleton term breech presentation [6-8]. A meta-analysis of randomised trials comparing planned CS for breech presentation with planned vaginal delivery concluded that planned caesarean section greatly reduces both perinatal/neonatal mortality and neonatal morbidity at the expenses of somewhat increased maternal morbidity[9]. However, a recent study by Mohammed *et al*[10] revealed that vaginal delivery can be achieved in about 77% of carefully selected mothers with breech presentation at term, but with a risk of increased neonatal morbidity. However, other studies reported no differences in perinatal complications including birth trauma and low Apgar score between babies born by AVBD and CD[11]. The manoeuvre of external cephalic version (ECV) has been reecommended for all women with an uncomplicated breech pregnancy at term[12] with the aim of achieving a reduction in the incidence of breech presentation in labour and the trauma associated with vaginal breech delivery. We have shown in an earlier study[13] that selective ECV at term could reduce the number of CS done because of breech presentation while allowing continuing experience in the art of vaginal breech delivery. The policy of elective caesarean delivery as proposed by some authors from the developed world[6-10] might not be totally appropriate and ideal in our community where grandmultiparity is the rule rather than exception and it is not uncommon to find

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women undergoing their fifth or sixth caesarean. The aim of this study was to assess the neonatal morbidity and mortality in singleton breeches delivered at term in our hospital and to relate these to the mode of delivery.

Materials and methods

The medical charts of women who delivered at the Abha Maternity Hospital, Saudi Arabia, (AMH) between January 1994 and December 2000 were retrieved and the 573 singleton pregnancies who presented in labour with breech presentation at term were extracted and analysed retrospectively. In those who had antenatal care in the hospital, suitability for AVBD was determined using fetal weight estimation of less than 3500gms and a clinically adequate pelvis. Women with other complications like previous ceasearean section, pre-eclampsia, bad obstetric history, twin pregnancy, and intra-uterine growth retardation had elective CS in most of the cases. The data extracted and analysed included demographic data, mode of delivery, type of labour, complications during delivery, birth weight, Apgar score, evidence of congenital anomalies, neonatal outcome. The data were coded, tabulated and entered into an IBM – compatible computer. Statistical analyses were carried out using the Statistical package for the Social Sciences (SPSS) version 7.5. Number and percentages for qualitative variables and mean and standard deviation for quantitative data were calculated. Student's t-test was used to compare means, while Chi-Square and Fisher's exact test were used where appropriate. All tests used were at 5% level of significance.

Results

There were a total of 22480 deliveries at AMH during the study period. Breech delivery at term accounted for 2.4% of the total deliveries during the study period. Maternal characteristics and birth weights are shown in Table 1. Although there were no statistically significant differences in the mean maternal age and number of abortions between the two groups, ($p>0.05$), there were statistically significant differences in the mean parity and birth weight, ($p<0.05$). Table 2 showed the mode of delivery in relation to birth trauma and neonatal morbidity. Three babies each (1.8% and 0.7%) of mothers delivered by AVBD and CS respectively had Apgar score of less than at 7 at 5 minutes but this differences were not significant statistically, ($p>0.05$). There were statistically significant difference in the birth trauma between the babies born by AVBD and those by CS, ($p<0.05$). Difficulty with delivery of the after-coming head was encountered in one of the babies whose mother had CS. There were no statistically

Table 1 Maternal characteristics and birth weight in relation to mode of delivery

Characteristic	Assisted breech delivery N =166	Caesarean section N = 407	Significance P value
Maternal age (yrs) (X±SD)	28.83± 5.88	28.65± 6.54	P = 0.75
Parity (X±SD)	4.01± 3.10	2.98±3.15	P = 0.000*
Abortion (X±SD)	0.63±1.05	0.70±1.13	P = 0.47
Birth weight (gms) (X±SD)	2837.3±449.8	3096.0±498.8	P = 0.000*

**(p<0.05) Significant statistically*
X±SD (Mean ± Standard deviation)

Table 2 Fetal morbidity/mortality in relation to mode of delivery

Characteristic	Assisted vaginal breech delivery N =166	Caesarean section N = 407	Significance P value
Apgar score <7 at 5 mins. n(%)	3(1.8)	3(0.73)	X^2 1.30 P = 0.363 (NS)
Trauma during delivery			
Fractures (clavicle)	3(1.8)	2(0.49)	X^2 = 2.15
Hip dislocation	1(0.6)	2(0.49)	p=0.000015
Difficulty with delivery of ACH	12(7.2)	1(0.24)	
Perinatal mortality rate	6.0 per thousand	9.8 per thousand	X^2 0.20 P=1.00 (NS)
Congenital anomalies n (%)	11(6.6)	16(3.9)	X^2 = 1.90 P=0.12 (NS)

ACH = after coming head
NS = Not significant statistically
** = Statistically significant.*

significant differences in the perinatal outcome and congenital malformation rates between the two groups of babies delivered either by AVBD or by CS, ($p>0.05$)

Discussion

We have conducted this study to see whether there are added risks to babies born by AVBD as opposed to elective CS and if this is the case, we may need to change our policy regarding the management of breech presentation at term in line with the recommendation from the Royal College of Obstetricians and Gynaecologist ((RCOG) and other authors[6,8,12]. While the majority view in the developed world leans towards elective caesarean section for breeches at term[6,8,12], few have advocated selective vaginal breech delivery at term[14]. our community like any rapidly developing siociety still prides on the family size and as such the decision to elect for abdominal delivery especially in the younger age grouip should be influenced by the practice and culture of our society, without jeopardizing the maternal and fetal well-being.

The perinatal mortality rate in this study was 8.7 per thousand while no statistically significant difference was found in perinatal mortality between babies delivered by the vaginal route and by CS. this finding has been observed by other authors[15-18]. However, other workers[19-20] recorded a significant increase in perinatal mortality rate after AVBD. Roberts *et al* [21]. demonstrated in his view an increase in CS performed for singleton term breech over a 7 year period without a change in perinatal outcome. Our study also revealed no statistical significant difference in the perinatal mortality. Regarding short-term neonatal morbidity, the percentage of babies with low Apgar score (<7 at 5 minutes) was more in the AVBD (1.8%) than those delivered CS (0.73%), but there was no statistically significant difference in this morbidity between the babies in both groups. Reports are however conflicting on the issue of low Apgar score[6,8,11,22]. Our study showed that trauma during delivery was significantly more in babies born by the AVBD route (8.4%) than those born via CS (1.2%). These findings have also been reported by other workers[6-8]. A striking finding was that fractures and difficulty in delivery of the after-coming head was also found in babies delivered through CS. This underlines the fact that CS may not be the panacea for term

breeches after all. The high caesarean section rate overall (71.1%) in our study may be related to the very low. AVBD rate 91.75%) amongst mothers with previous CS scar which in turn may not be unconnected to the medico-legally conscious society in which we work. Ophir *et al*[22] demonstrated in his study that 52.1% of his patients with previous caesarean section and breech presentation were delivered successfully by AVBD without jeopardizing neonatal morbidity.

Despite modern operative techniques and systemic antibiotics regimes, women undergoing caesarean section experience intra-operative complications, blood loss, and infections at a higher rate than those associated with vaginal delivery. Maternal risks of morbidity multiply when the operative complications encountered in subsequent abdominal deliveries are considered[23]. In the meta analysis by Hofmeyr *et al*[9], there was no evaluation of the cost of caesarean section and also the future morbidity due to the caesarean section scar which is very relevant to our population. It would seem therefore that the recommendation of elective CS for all singleton term breeches might not be ideal in our community. However, our retrospective study has its inherent limitation of being ex post hoc.

In order to reduce the neonatal morbidity associated with AVBD in our community, the RCOG recommendation[12] should be considered fully. We have shown in a previous review[13] that 84% cephalic vaginal delivery rate was achievable in patients who had had successful selective ECV thereby reducing the morbidity associated with AVBD. Selective in the sense that only those women who were assessed not to be suitable for AVBD by way of estimated fetal weight of more than 3500gms and a small maternal pelvis clinically were given the option of ECV. This selective ECV would also allow for continuing experience in vaginal breech delivery. A review of trainee log books from one busy district general hospital in the UK (1987 & 1997) showed there has been a ten-fold reduction in AVBD experience for UK registrars. This could in fact lead to an increase in neonatal morbidity. Skill laboratory that is commonly used now for simulated training would complement but not replace practical clinical training.

In conclusion, AVBD was associated with birth trauma in our community but we recommend ECV at term for uncomplicated cases and supervised instructions in the art of assisted vaginal breech delivery. This study highlights the need for a prospective controlled trial in our population.

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