

## *LEAD ARTICLE*

### **Term breech delivery: re-appraisal in a tertiary hospital, Fiji**

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#### **Abstract**

This retrospective study evaluated the outcome of term breech deliveries in Colonial War Memorial Hospital, Fiji. The incidence of breech was 1.87%. There was significantly better neonatal outcome in the elective caesarean group in terms of NICU admission and Apgar score than those delivered vaginally. Women who had caesarean section were more likely to have complications such as postpartum haemorrhage, UTI, infected wound and to stay longer in the hospital than those who had a vaginal delivery. There were no significant predictors of successful attempted vaginal breech delivery.

**Key Words:** Term breech, vaginal delivery, caesarean, neonatal outcome, postpartum complications.

#### **Introduction**

Selection of route of delivery in term breech has been a topic of considerable debate and controversy over many decades until Term Breech Trial (TBT) was published in 2000<sup>1</sup> when it was thought to be finally answered for favour of planned caesarean section. On further analysis, however, the trial did not provide unequivocal evidence. The protocol used was not acceptable to everyone leaving a room for argument in favour of planned vaginal delivery in well selected women. Moreover, successful vaginal breech delivery depends on many factors including obstetrician's skill, which makes evaluation of outcome extremely difficult. Yet, most of the obstetricians are more inclined to elective caesarean section in such women. But there is no policy in Colonial War Memorial (CWM) Hospital, Fiji, that all the

term breeches to be delivered by caesarean section. In the absence of established contraindications to vaginal delivery, women are given the option to choose between an elective caesarean or vaginal delivery. This retrospective study was designed to evaluate this practice of management of singleton term breech pregnancies and the outcome of both the mother and the baby in CWM Hospital to enable us to formulate an evidence based plan of management for such women.

#### **Materials and Methods**

Colonial War Memorial Hospital is a referral tertiary centre associated with Fiji School of Medicine and it caters patients from other regional health centres which are spread over many islands from where patients need to be evacuated for the management of abnormal labours.

The existing practice in our hospital for the management of term breech is to perform elective caesarean section in the presence of any associated features, such as bad obstetric history, pre-eclampsia, IUGR, gestational diabetes, previous caesarean section, big baby, hyperextended head and footling presentation. It is also a practice to offer these women to have an external cephalic version at 36 weeks and onwards provided there are no contraindications. But there are categories of women who are supervised in regional health centres or who are totally unsupervised antenatally. These women are admitted either in labour or with obstetric complications and thus decision for route of delivery is taken on an emergency basis.

This study conforms to the standards established by the NHMRC for ethical quality review<sup>2</sup> hence ethics approval was

not sought. Women who had singleton breech deliveries at  $\geq 37$  weeks during the period from January 2003 to December 2004 were identified from labour ward register and medical records. Case records of these women were retrieved and both maternal and neonatal variables were charted. Maternal variables included age, parity, BMI, obstetrical and medical complications, and indications of caesarean section, postpartum complications like postpartum haemorrhage, UTI, pyrexia, wound infection and length of hospital stay. The neonatal outcome variables included 5-minute Apgar score, birth weight and admission to NICU. They were then divided in three groups as follows. Group I: women who had elective (prelabour) caesarean section; Group II: women who had vaginal birth and Group III: women who underwent emergency (intrapartum) caesarean section.

Both maternal and neonatal variables in all the groups were analysed to find out any difference in neonatal outcome and maternal morbidity. Statistical tools used were analysis of variance (ANOVA) and Chi-square. Associations between dichotomous variables were analysed by calculation of odds ratios with 95% confidence intervals.

### Observations

There were 245 women with singleton breech presentation among 13072 deliveries during two year period of study. Of these, 80 were in Group I, 53 in Group II and 112 in Group III. The basic profiles of the women such as age, gravida and parity were similar in all the three groups. Though not statistically significant BMI was, however, highest in group I (31.1) and lowest in group II (28.7).

The mean birth weights in the three groups, which were 3.33 kg, 3.15 kg and 3.21 kg respectively did not show any statistical difference. There was no peri or neonatal death. But the mean Apgar at 5 min as shown in table 1 was significantly lower in those who had vaginal delivery ( $P = 0.001$ ). Severe neonatal asphyxia (Apgar  $<5$  at 5 min) was observed highest in vaginal group.

None of the neonates required NICU stay in group I but in vaginal group the stay was longer significantly than in group III (2.25 days vs. 0.075 day,  $P = 0.02$ ). Table 2 shows the odds ratios of various variables. The odds of having Apgar  $\leq 7$  at 5 minutes was significantly less in group I as compared to other groups.

Regarding maternal morbidity, women in group I had significantly more postpartum complications ( $P = 0.019$ ) and significantly longer hospital stay ( $P = 0.000$ ) as compared to those in group II.

On analysis of the indications for intrapartum caesarean, it was found that 86 of the 112 women (77%) were candidates for elective CS. These women either came in labour or did not have antenatal assessment prior to admission. Had they come prior to labour they would have had elective CS. Hence the remaining 26 women (23%) actually failed attempted vaginal delivery. The indications for CS in these women are: 16 non-progress of labour, 2 obstructed labour, 8 fetal distress. Again, 6 of 53 women (11%) in group II were candidates for elective CS but they came in advanced stage of labour and delivered vaginally. Therefore, in all 72 (46 in group II and 26 in group III) women were in true sense allowed vaginal delivery of which 64% (46) delivered successfully.

We tried to analyse the maternal factors that were likely to influence the outcome of vaginal delivery. Primigravida were likely to have emergency CS when given a trial for vaginal delivery (table 2). Maximum successful vaginal delivery was observed in third gravidae (83%) whereas in grand multigravidae 45% of them had vaginal delivery. 5 of 9 women who had had previous breech vaginal delivery had repeat vaginal delivery.

## Discussion

Our findings were consistent with those of TBT and many subsequent randomized control trials<sup>3-5</sup> in terms of increased neonatal morbidity, if delivered vaginally in comparison with delivery by an elective caesarean section. But in our system of working, all the vaginal deliveries were not planned and it was accomplished because of being late in diagnosis till advanced labour or being admitted in second stage. All these factors might have influenced the neonatal outcome. In contrast to these findings, many authors reported higher but no significant difference in neonatal outcome among well selected vaginal breech and elective caesarean delivery<sup>6-8</sup>, and vaginal cephalic delivery<sup>9</sup>.

Further, there has been concern about the long-term outcome of the babies born by vaginal breech. We did not conduct the long-term follow up of the neonates in this study. However, two separate studies<sup>10,11</sup> reported no difference in the risk of death or neurodevelopmental delay at  $\geq 2$  years of age in the planned cesarean and the planned vaginal birth groups (RR 1.09; 95% CI, 0.52- 2.30; P = 0.85). Similarly, in a population based study<sup>12</sup> up to school age involving 1645 infants delivered at term by breech, no significant differences between elective caesarean section and planned vaginal delivery in terms of severe handicap, developmental delay, neurological deficit, psychiatric referral were found.

Our findings of increased maternal morbidity were similar to those in other breech trials and these disadvantages of caesarean section need to be addressed seriously because following TBT caesarean section has become increasingly practised for all breech births<sup>3</sup>. We need to see the long-term consequences of caesarean section. An article from Netherland<sup>13</sup> showed that there was an increase of about 8500 elective caesarean sections in four years following TBT that probably prevented 19 perinatal deaths. However, this rise in caesarean section also resulted in four

maternal deaths, nine perinatal deaths as a result of the uterine scar.

In this study a high proportion of women underwent intrapartum caesarean section. This shows that there is some room for improvement in prior assessment so that these women could undergo elective procedure.

## Conclusion

In the management of term breech, the short-term neonatal outcome in terms of Apgar score and NICU stay was significantly better in elective caesarean group than vaginal group. But there was no peri or neonatal death. On the other hand, maternal morbidity was significantly more in caesarean groups than vaginal group. In our system of working, it is difficult to strictly plan vaginal breech delivery because of various factors. Therefore, the existing practice of management of term breech in this centre is satisfactory though we need to exercise careful exclusion of risk factors and inform the patient in detail of both short- and long-term risks of baby and mother.

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**Table 1. Neonatal outcome**

Apgar at 5 min	Group I n = 80	Group II n = 53	Group III n = 112
8 to 10	75	43	84
5 to 7	4	6	25
<5	1	4	3
Mean (SD)	8.7 (0.90)	7.94 (1.67)	8.11 (1.41)

**Table 2. Odds ratio of various variables**

	El CS Vs. Vaginal OR (95% CI)	Em CS Vs. Vaginal OR (95% CI)	El CS Vs. Em CS OR (95% CI)
Apgar $\leq$ 7	0.91(0.82 – 1.01)	1.00 (0.89 – 1.13)	0.20 (0.02-0.91)
NICU Stay	none in El	0.98 (0.89 – 1.07)	none in El
Primi	0.99 (0.63 – 1.57)	1.86 (0.89 – 4.02)	0.53 (0.28-1.01)
Previous Breech	0.70 (0.37 – 1.30)	none in Em CS	