Why Vaginal Breech Delivery Should Still Be Offered

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Since the publication of the Term Breech Trial,[1] Caesarean section (CS) has become the *de facto* standard of care for delivery of the term breech fetus; however, obstetricians still need to know how to conduct an atraumatic breech delivery in situations where vaginal delivery is unavoidable. Some women will insist on a trial of labour and vaginal delivery. For those who do not, we need to consider whether the obstetrician should discuss the option of vaginal breech delivery. If the fetus is in a breech presentation and if there are none of the classic contraindications such as macrosomia, hyperextended head, or footling presentation, should the option of vaginal delivery be discussed, or should the obstetrician tell the woman that CS is unequivocally safer for the baby and carries no additional risk for her?

If an obstetrician continues to offer vaginal breech delivery, this activity is suspect and requires justification. Since the results from the Term Breech Trial are the basis for the possible abandoning of planned vaginal breech delivery, we must examine the evidence presented in that study, restricting the analysis to the countries with a low national perinatal mortality rate.

Evidence from the Term Breech Trial

A. Mortality

The report from the Term Breech Trial identified 511 planned vaginal breech deliveries in countries with a low national perinatal mortality rate, of which 228 (44.7%) delivered vaginally.[1] There were three stillbirths in this group, numbers 1, 2, and 3 in Table 4 of the *Lancet* article.

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Dr Mary Hannah described to me the details of these stillbirths in a telephone conversation in the summer of 2001.

The first stillbirth occurred in a primigravid woman whose labour was induced at 41 weeks and 5 days of gestation. The woman spontaneously delivered the breech to the umbilicus but then could not push the baby out. The obstetrician apparently decided not to continue with the attempt at vaginal delivery, made no attempt at traction, and decided instead to perform a CS with the baby already delivered to the umbilicus. Interestingly, in 2005, in response to a critique of the method of vaginal breech delivery[2] advocated in the Term Breech Trial, it was stated that the "protocol . . . called for minimal intervention after spontaneous delivery to the umbilicus, with avoidance of even gentle traction to the fetal trunk."[3] A similar argument was made in a 2003 review article: "Most authors now recommend no intervention until there has been spontaneous exit of the infant to the umbilicus and minimal assistance without traction thereafter."[4] No traction after delivery to the umbilicus may be a laudable approach as a general rule, but to make no attempt at traction and instead proceed immediately to CS when there is arrest of descent at this stage is controversial. In Table 4, the stillbirth is described as arising from a "difficult attempt at vaginal delivery before Caesarean section"[1]; this does not reflect the actual circumstances of the case.

The second stillbirth in the report involved a woman who was admitted in labour, never having had an ultrasound examination during the pregnancy. The fundal height was assessed as being of term size and a breech presentation was found on pelvic examination. The woman delivered the baby, which was a small preterm macerated stillbirth (1150 g) presenting as a breech; a second twin was born alive after the vaginal breech delivery.

The third stillbirth involved a primigravid woman at 41 weeks' gestation. Labour began spontaneously with the fetus in a frank breech presentation. Intermittent electronic fetal monitoring was used and there were no reported fetal heart rate abnormalities during the first stage of labour. The

patient pushed for 48 minutes in the second stage of labour. At about 20 minutes before delivery, the fetal heart tones could not be heard. The attendants appear to have been uncertain whether fetal heart activity was present, and appear to have felt that the woman would deliver faster vaginally than if she were transferred for CS. No attempt was made to carry out either direct fetal heart rate monitoring or ultrasound assessment. No attempt was made to perform total breech extraction, even though the attendants were not prepared to perform an emergency CS. The attendants allowed the woman to continue pushing in the second stage of labour, with no recording of fetal heart activity and without attempting breech extraction. The baby was stillborn.

The second stillbirth identified in this report occurred before enrolment, and in the other two stillbirths there were arguably errors in management. It is true that medical errors are part of clinical practice,[5] but it is hard to imagine a unit experienced in vaginal breech delivery allowing such errors to occur. Vaginal breech delivery is "a discriminating procedure" where "skill is required in multiple areas."[6] It is certainly arguable whether the management described in these deaths represents the "best . . . chance [for vaginal breech delivery] to be proven a reasonable method of delivery."[1]

B. Morbidity

With respect to long-term outcome, the authors of the Term Breech Trial have provided follow-up of the babies born in participating centres that could trace more than 80% of the participating women.[7] At two years of life, there was no difference between the planned Caesarean group and the planned vaginal delivery group in incidence of death or neurodevelopmental delay. Of the 18 infants with serious neonatal morbidity who were followed up (4 in the planned Caesarean group, 14 in the planned vaginal delivery group), one death occurred because of complications from congenital subglottic stenosis, but the other 17 infants were normal. As the authors point out, most babies with serious neonatal morbidity who survive will subsequently develop normally. This is borne out in other studies of infants with low Apgar scores following breech delivery.[8,9] Other studies have shown no difference in the risk of severe handicap in babies born after elective CS and after planned vaginal delivery.[10–15]

Non-Randomized Studies

In the last decade there have been 32 single centre reports[16–47] from countries with a low perinatal mortality rate, in which the number of intended and actual vaginal breech births is given, and where there is a description of the perinatal deaths (Table). Of 12 191 intended vaginal breech deliveries, 8252 (68%) actually delivered vaginally. There were 25 perinatal deaths, resulting in a perinatal mortality rate of 2 per 1000 attempted vaginal deliveries and 3 per 1000 actual vaginal deliveries; there were also eight cases of cerebral palsy.[16,18,35,45,46] Some perinatal deaths were unrelated to labour and delivery, and others were as likely to have occurred during a normal vaginal delivery. The deaths following cord prolapse, second stage asphyxia, and stuck aftercoming parts (n = 13) are more characteristic of vaginal breech births. How to reduce their numbers, without resorting to routine CS, will be discussed later.

It will be argued that a perinatal mortality rate of 2 or 3 per 1000 for intended vaginal breech birth is not representative of general experience, because individual centres with better outcomes are more likely to report their results. But the results are not so different in several national databases. In Sweden, between 1991 and 2001, the corrected perinatal mortality for breech deliveries at ≥ 38 weeks' gestation was 1 per 1000 for CS before labour and 2.8 per 1000 for vaginal delivery and CS during labour combined.[48] Again in Sweden, from 1987 to 1993, the infant death rate after elective CS was 1.5 per 1000 and after vaginal delivery and emergency CS combined was 2.5 per 1000.[49] In Norway, between 1981 and 1998, there were 25 perinatal deaths and approximately 10 000 vaginal deliveries out of approximately 27 000 singleton breech babies[50]; if all deaths had occurred in the vaginal delivery group, the perinatal mortality rate would be approximately 2.5 per 1000 in this group. In Denmark, from 1982 to 1992, the mortality rate associated with planned vaginal breech delivery was estimated to be between 1.4 and 2.1 per 1000.[51] In Finland, from 1987 to 1989, there was one death arising from 1270 planned vaginal breech births (and 1127 actual vaginal deliveries).[52] In the Netherlands, from 1995 to 1999, the perinatal mortality rate in the planned CS group was 1.5 per 1000, and in the planned vaginal delivery group it was 3.6 per 1000.[53] In France, in a large database for the years 1994 to 2000, there was one perinatal death among 1216 planned (and 787 actual) vaginal breech births.[54] In the three maternity hospitals in Dublin, from 1981 to 1990, 20 singleton babies died as a result of attempted vaginal breech delivery and, there were 4185 actual vaginal breech deliveries.[55]

It is probably fair to say that in individual centres and countries with high quality obstetric care, an attempt at vaginal breech delivery may cause death or permanent damage to three babies out of 1000. An elective CS may contribute to about one perinatal death per 1000, perhaps from persistent pulmonary hypertension. The absolute difference therefore is 2 per 1000. Certainly the claim by the authors of the Term Breech Trial report that, in countries with a low perinatal mortality rate, only seven additional Caesarean sections are needed to prevent one adverse outcome is not tenable. From the above calculations, the figure is more like 400.