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Outcome of breech delivery at term

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Abstract

Objective—To compare neonatal mortality and morbidity in term infants presenting by the breech and delivered vaginally or by caesarean section.

Design—Population based comparison of outcomes. Data derived from the St Mary's maternity information system.

Setting—North West Thames Regional Health Authority, 1988-90.

Subjects—3447 singleton fetuses presenting by the breech at term.

Main outcome measures—Intrapartum and neonatal mortality, low Apgar scores, intubation at birth, and admission to special care baby units.

Results—After the exclusion of babies with congenital anomalies the incidence of intrapartum and neonatal death associated with vaginal birth was 8/961 (0.83%) compared with 1/2486 (0.03%) in babies born by caesarean section (relative risk 20, 95% confidence interval 2.5 to 163). The numbers of low Apgar scores and neonatal intubation were doubled in babies born vaginally or by emergency caesarean section compared with those delivered by elective operation.

Conclusions—The good neonatal outcome associated with elective caesarean delivery of the term breech fetus may influence the decision of women and their obstetricians about mode of delivery.

Introduction

The optimal management of breech presentation at term remains a lively debating issue in graduate examinations, on the labour ward, and in the obstetric literature. The opinions of many have been polarised by their personal experiences, good and bad, and there have been no prospective randomised trials of sufficient size to resolve this issue. In the absence of such information, obstetricians have to rely on data derived from retrospective analysis. We examined the neonatal mortality and early morbidity associated with vaginal delivery of breech fetuses at term in one health region over three years and compared the outcome with those cases managed by caesarean section.

Patients and methods

The St Mary's maternity information system is an on line collection system for obstetric data currently in use in all maternity units within the North West Thames Health region. Data are collected prospectively from booking until 28 days after delivery. At the end of each year patient identifiers are removed and the total data set is pooled for analysis. The data for this study were derived from 117 000 consecutive deliveries occurring between January 1988 and December 1990. The

present analysis was confined to those pregnancies in which a singleton fetus in a breech presentation was delivered after 37 completed weeks of pregnancy. Studied outcome measures included intrapartum stillbirth, neonatal death, low (<7) Apgar scores at 5 minutes, the need for neonatal ventilation, and admission to special care baby units. Relative risks were calculated with CIA software.¹

Results

A total of 3447 women delivered mature singleton infants presenting by the breech. This represented nearly 3% of the total births in the study period. Of these, 1457 (42%) were delivered by elective caesarean section before the onset of labour, 1029 (30%) by emergency caesarean section in labour, and 961 (28%) vaginally. After we excluded antepartum stillbirths (11) and deaths associated with congenital anomalies (4) there were four intrapartum and four neonatal deaths in the group managed by vaginal delivery, an incidence of 0.83%. In the 2486 cases delivered by caesarean section there was only one neonatal death of a normally formed infant, an incidence of 0.03% (relative risk 20, 95% confidence interval 2.5 to 163), and three further perinatal deaths associated with congenital abnormality. In the same period, after antepartum stillbirths and those fetuses with congenital abnormalities were excluded, there were 77 intrapartum and neonatal deaths of mature singleton fetuses presenting cephalically and delivered vaginally, an incidence of 0.08% (77 of 93 602).

The mean birth weights of the breech fetuses delivered vaginally, by emergency caesarean section, and by elective caesarean section were 3169 g, 3294 g, and 3290 g respectively. The table gives details of Apgar scores, resuscitations, and admissions to the special care baby units.

Discussion

Ways of managing breech presentations at term include attempted external cephalic version, planned caesarean section, and trial of vaginal delivery. Although many authors now recommend a trial of vaginal delivery, individual series do not contain sufficient numbers of patients to gain a true estimate of the neonatal risks.^{2,4} By pooling data from recent publications Bingham and Lilford calculated that the excess risk of neonatal death attributable to vaginal delivery of the term breech was about 4 per 1000.⁵ The same figure was reached after analyses of two large obstetric databases^{6,7} and agrees with our own findings. These database studies, however, excluded stillbirths and so may have underestimated the risks of vaginal breech delivery. Our data suggest that the total risk of intrapartum and neonatal loss in normally formed

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	Vaginal delivery (n=961)	Emergency lower segment caesarean section (n=1029)	Elective lower segment caesarean section (n=1457)	Relative risk* (95% confidence interval)
Low Apgar score	44 (4.6)	44 (4.3)	32 (2.2)	2.0 (1.3 to 2.9)
Intubation	86 (8.9)	98 (9.5)	61 (4.2)	2.2 (1.6 to 2.9)
Special care baby unit	54 (5.6)	72 (7.0)	75 (5.1)	1.2 (0.9 to 1.6)

*Relative risk for vaginal delivery and emergency v elective caesarean section

mature infants approaches 1%. Although several authors have proposed management protocols to select cases for "safe" vaginal breech delivery, if the perinatal mortality attributable to vaginal breech delivery is truly 1% no adverse outcomes may be reported in a study of one or two hundred cases. This might lead to the conclusion that the suggested strategies had eliminated the potential for obstetric disaster.

A policy of wholesale elective caesarean section for the term breech fetus has been criticised because of its likely effects on maternal morbidity and mortality and the training of obstetric staff. Using decision analysis Bingham and Lilford concluded that planned abdominal delivery might be a safer option for the mother even if only 17% of trials of vaginal breech delivery were unsuccessful.⁵ Feldman and Freiman calculated that routine elective caesarean might be safer when the incidence of failed trial of labour was greater than 26%.⁸ As 40% of trials of vaginal breech delivery result in emergency surgery,⁹ the maternal benefits of such a policy may be more imagined than real. Whether enough vaginal breech deliveries are taking place to allow resident obstetric staff reasonable experience is questionable. In our region only one quarter of term breeches are being delivered vaginally. If a 3% incidence of breech presentation at term is assumed, in a unit delivering 3000 women a year there will be only about 20 vaginal breech deliveries annually. When this number is further divided between the resident staff of the department, clearly an individual's experience in managing vaginal breech birth will be limited.

Some clinicians argue that subsequent maternal obstetric performance may be compromised after a caesarean section. Over 70% of women who have had one previous caesarean section, however, and are allowed a trial of vaginal delivery in a following pregnancy will be successful,¹⁰ and up to 85% if the previous caesarean section was performed for breech presentation.¹¹

The fetus presenting by the breech may already be

damaged,¹² and this may deter some from advocating a policy of routine abdominal delivery. We were therefore encouraged that in our region there were only three neonatal deaths associated with congenital abnormality in the 2486 mature breeches delivered by caesarean section. This low figure may be related to the widespread use of fetal anomaly scanning.

We recognise the potential limitations of this analysis, but randomised prospective studies of adequate size are unlikely to be undertaken to resolve these questions. Issues that need to be raised when counselling pregnant women before an attempted vaginal breech delivery at term include the potential fetal risks of x ray pelvimetry,^{13,14} the relatively high incidence of failed trial of labour and emergency caesarean section, and the increased likelihood of neonatal mortality or chronic neurological damage.⁵ That the perinatal mortality in a population of seemingly healthy mature infants should approach 1% is disturbing, and we believe that most mothers would opt for an elective caesarean section if informed of these statistics before delivery.

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ONE HUNDRED YEARS AGO

SIR,—As an old public schoolboy I take the liberty of addressing you on a subject which is at present being ventilated in your valuable columns. My own recollection of public school fare is very far from appetising. The food, I daresay, was wholesome enough of its kind, but vegetables and fruit were conspicuous by their absence. The chief fault, however, was that the dinner of every day of the week was the same, or nearly the same, throughout the year. The same applied to breakfast, while at tea there was simply bread and butter. A little housekeeping ingenuity, and a very small additional expenditure, would have produced a diet more nearly fulfilling physiological indications. No doubt, however, now that this question has been touched upon, other and abler pens will keep the ball rolling until reform has been forced upon those whose interest it may not always be to effect it.

My object in addressing you is rather to call attention to

a grievance of an even more serious character which formerly existed, and, I think, still exists, in many public schools. In my day there was a lesson hour before breakfast, and, to the best of my recollection, no food of any kind was obtainable before that meal. Surely this is a most serious matter for the health of growing boys. I do not myself profess to be an expert on school hygiene, but common sense—not to speak of scientific medicine, of which they can have no knowledge—should induce schoolmasters to alter the ridiculous system of having an hour's work on an empty stomach, and not uncommonly in a chilly atmosphere. I may mention that the colder the morning, the less artificial warmth did we usually find provided, probably because those in the stoking department found bed warm and cosy in cold weather.—I am, etc.,

Oct 10th. ANOTHER PATERFAMILIAS. (*BMJ* 1892;ii:922.)