Breech presentation after 34 weeks: a meta-analysis of corrected perinatal mortality/morbidity according to the method of delivery

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Authors' objectives
To conduct a meta-analysis dealing with the mortality and morbidity of breech presentation according to the method of delivery.

Searching
MEDLINE was searched from 1978 to 1995 for articles published in English or French, using the term ‘breech’. The search was supplemented with a review of the reference lists of key articles.

Study selection
Study designs of evaluations included in the review
The authors do not appear to have used study design as an inclusion criterion. Articles published prior to 1978 were not considered in order to have an homogeneous sample of studies, taking into account the important progress made in perinatology over the past 30 years. To be included in the meta-analysis, each study had to be conducted in the same obstetric department; this avoided changes in the medical care of the women, which could occur in a multicentre study.

Specific interventions included in the review
Breech delivery, i.e. Caesarean or vaginal birth. Studies of breech deliveries in which there was no prior assessment with a view to vaginal birth, were excluded.

Participants included in the review
Breech presentation after 34 weeks. Studies were excluded if they dealt with multiple pregnancies, with single pregnancies of less than 34 weeks, or with neonates weighing less than 2 kg, or included mixed premature and full-term breech presentations.

Outcomes assessed in the review
Perinatal mortality or morbidity. Perinatal mortality included still-births and neonatal mortality within the first 7 days of life. This was corrected for foetal malformation and stillbirths before the mother entered labour, as the choice of delivery did not play a part in the mortality.

Studies that did not give adequate information about perinatal morbidity and mortality were excluded. Also excluded were those studies that quoted perinatal morbidity and mortality figures for a whole region and not for a hospital department.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
The authors do not state that they assessed validity.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the reviewers performed the data extraction.

The following data were tabulated for each study: the publication detail, the percentages of vaginal deliveries and
Caesareans, and the findings, which were included in the meta-analyses. In addition, information on the circumstances of death was tabulated for some studies.

**Methods of synthesis**

How were the studies combined?
The weighted pooled odds ratios (ORs), along with 95% confidence intervals (CIs), were calculated using the Mantel-Haenszel method (fixed-effect model). Two meta-analyses of the corrected perinatal mortality were also conducted. The first meta-analysis compared the results of the vaginal route with those of Caesarean section. The second compared the results of the two methods of delivery attempted; the first group included vaginal deliveries, but also emergency Caesareans during labour, whilst the second group included prophylactic elective abdominal delivery. Three meta-analyses were undertaken for neonatal morbidity using the following criteria: the Apgar score at 1 minute, the Apgar score at 5 minutes, and the criteria of ‘perinatal morbidity’.

How were differences between studies investigated?
Differences between the studies were not analysed statistically but were discussed briefly in the text.

**Results of the review**

Twenty-two studies involving 7,239 breech deliveries, with an average of 329 breech deliveries per study (range: 109 to 899). The majority of the studies were retrospective; only 2 prospective and randomised studies, and 3 prospective and non-randomised studies, were included.

The average proportion of vaginal deliveries performed was 48% (range: 24 to 81). Vaginal delivery was attempted in 62% of the patients (range: 33 to 86), and was finally achieved in 46% (range: 29 to 81). The great variability of the rate of vaginal delivery attempted, or finally achieved, was linked to the heterogeneity of the methodology and criteria used in all of those studies.

Perinatal mortality.

The meta-analyses of perinatal mortality did not reveal a significant increased risk. When comparing the vaginal route with that of Caesarean section (7,239 breech deliveries), the pooled OR was 1.90 (95% CI: 0.59, 8.22). When comparing the number of vaginal deliveries attempted with the number of planned Caesareans (4,120 breech deliveries), the pooled OR was 4.95 (95% CI: 0.44, 80.06).

Neonatal morbidity.

The neonatal morbidity showed an increased risk with vaginal delivery. When comparing vaginal and Caesarean delivery, the pooled OR was 2.42 (95% CI: 1.86, 3.42) for Apgar scores less than 7 at 1 minute (1,696 breech deliveries), and 2.25 (95% CI: 1.12, 4.49) for Apgar scores less than 7, at 5 minutes (2,484 breech deliveries). When comparing the neonatal morbidity (as defined by each author) for vaginal delivery and Caesarean section (3,689 breech deliveries), the pooled OR was 3.67 (95% CI: 2.10, 5.82).

The Apgar scores at 1 and 5 minutes were defined identically in most studies. However, several studies differed in the definition of perinatal morbidity.

**Authors’ conclusions**

It was concluded that the practice of resorting to Caesarean section for every breech presentation at term does not seem defensible.

**CRD commentary**

This was a poor-quality review and the results should be interpreted with caution. Although the review included a clear objective, the literature search that was undertaken was limited. Only one database (MEDLINE) was searched using only a single search term. In addition, the search strategy was restricted to only those studies published in English or...
French. This means that important information might be missing. No attempt was made to look for unpublished data, and the possibility of publication bias cannot be ruled out. No data were presented regarding the methodology of the review process, e.g. how many reviewers were involved in deciding which studies should be included, and how the data were extracted. In addition, no attempt was made to assess the validity of the included studies.

The information presented on the included studies was limited, although some important data were presented in the text and the results of individual studies were tabulated. However, there was a slight typing error in one of the results presented. When comparing neonatal morbidity by vaginal delivery with that for Caesarean section, the pooled OR was reported in the text as 3.67 and in the summary table as 3.76. The heterogeneity between the included studies was not formally evaluated; thus, pooling the data using a fixed-effect model may have been inappropriate.

The authors’ conclusions appear to follow from the results.

**Implications of the review for practice and research**

Practice: The authors state that the practice of resorting to Caesarean section for every breech presentation of at least 34 weeks does not seem defensible today.

Research: The authors state that research should be carried out in order to present a more valid argument in favour of the criteria for choosing the method of delivery.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.