Midwifery 55 (2017) 96–102

Contents lists available at ScienceDirect

Midwifery

journal homepage: www.elsevier.com/locate/midw

The influence of counseling on the mode of breech birth: A single-center observational prospective study in The Netherlands

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ARTICLE INFO

Keywords:
Counseling technique
Mode of delivery
Breech presentation
Morbidity
Vaginal breech birth
Cesarean section

ABSTRACT

Objective: women in the Netherlands, with a fetus in breech presentation, are thoroughly counseled to make an informed choice for the mode of delivery. The aim of this study was to assess the influence of counseling techniques on women's choices for the mode of delivery and subsequently to compare fetal and maternal outcomes of vaginal breech birth versus planned caesarean section.

Study design: we performed an observational prospective study. Data on breech deliveries were prospectively collected. We used ANOVA to identify variables influencing women's choice for the mode of delivery.

Setting: the obstetric department of the Red Cross Hospital in Beverwijk, the Netherlands.

Participants: women with a singleton gestation (> 37 + 0 weeks) and a fetus in breech presentation were included.

Measurements and findings: between January 2007 and December 2015 364 women were included. Counseling technique ($p = < 0.001$) and maternal education ($p = 0.046$) were significantly associated with the choice of mode of delivery. Of all included women 33% ($N = 119$) opted for a vaginal breech delivery and 52% ($N = 190$) opted for a planned cesarean section. 15% ($N = 55$) were unexpected breeches. Of the planned vaginal delivery group 66% ($N = 79$) delivered vaginal, whereas 99.5% ($N = 189$) of the women in the planned cesarean section group underwent a planned cesarean section. There were no significant differences in maternal and neonatal outcomes.

Key conclusions: women's choice on the mode of delivery and the eventual modus partus of fetuses in breech presentation is strongly influenced by the counseling technique. Vaginal breech birth in low-risk women is a safe option without long term morbidity in neonates.

Implications for practice: counselors should be aware of their influence on women's choice for mode of delivery in breech presentation. Counseling should be done using evidence based information.

Introduction

In 2000, the Term Breech Trial concluded that vaginal delivery of a single fetus in breech presentation was associated with an increased risk of neonatal morbidity and mortality compared to the neonatal outcomes after planned cesarean section (CS) (1.6% vs 5.0%; relative risk 0.33 [95% CI 0.19–0.56]; p < 0.0001) (Hannah et al., 2000). Also, CS is associated with increased risk of perinatal and maternal mortality and morbidity in a subsequent pregnancy, with complications such as major hemorrhage, abnormal placentation, uterine scar rupture and obstetric hysterectomy (Grivell et al., 2011; Miller et al., 2013). An elective CS did not show a significant reduction in risk of death or neurodevelopmental delay in children at 2 years of age (Whyte et al., 2004). Nevertheless, the rate of elective CS of women with a fetus in breech presentation rose within three months after the publication from 24% to 60% in the Netherlands, possibly due to a change in information given during counseling (Stichting Perinatale zorg, 2014a, 2014b; Rietberg et al., 2005). This resulted in a decrease of knowledge and expertise to attend a vaginal breech delivery (de Leeuwen and Verhoeven, 2006; van Roosmalen and Meguid, 2014). However, in the Netherlands still a large group of women with a fetus in breech presentation opt for a vaginal breech delivery (Vlemmix et al., 2014).

Abbreviations: CS, cesarean section; ECV, external cephalic version

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http://dx.doi.org/10.1016/j.midw.2017.09.012
Received 4 December 2016; Received in revised form 31 August 2017; Accepted 17 September 2017

In contrast to this change of policy, the Red Cross Hospital (RCH, in Dutch: Rode Kruis Ziekenhuis) has continued to offer and perform vaginal deliveries in carefully selected women. The aim of this study was to assess the influence of counseling techniques in women's choices towards the mode of delivery and subsequently to compare maternal and neonatal outcomes in – thoroughly selected and closely monitored - term vaginal breech deliveries versus elective CS for breech presentations. Next to this aim we analyzed the unexpected breeches separately as they are part of both included groups.

Methods

Data collection

Data on breech deliveries at the RCH in Beverwijk, the Netherlands, were prospectively collected in a separate database in which we also register all ECV attempts. Missing data on delivery outcomes were requested from referring community midwives.

We registered maternal age, BMI, parity, ethnicity, education, number of ECV attempts, counseling technique, women's choice and final mode of delivery, gestational age at birth, presentation at birth, birth weight, fetal sex, maternal adverse events and fetal adverse events. Medical files of neonates admitted to the neonatal care unit were reviewed to assess whether they suffered long-term morbidity related to mode of delivery. We also registered baseline characteristics of unexpected breeches as they are part of the included groups.

Setting and subjects

The RCH is a general hospital with an obstetric department that carries out 1250 births annually. All women with a singleton fetus in breech presentation at 37 weeks onwards without contraindications for ECV were offered an ECV attempt before counseling on the mode of delivery. For the scope of this study, we selected only women who had a live born singleton fetus in breech presentation after 37.0 weeks and an Apgarscore > 0 after 5 minutes. Fetal ante partum death was excluded in our data-analysis.

In our clinic, all women, presenting with a breech presentation and eligible for an ECV attempt, are offered an ECV before counseling on the mode of delivery. Exclusion criteria for ECV are multiple pregnancies, repeat CS (≧2) in the obstetric history, placenta previa, a footling and maternal diseases which contraindicate active labor.

ECV is done by two teams, existing out of a certified midwife and an obstetrician. Both teams guarantee availability of ECV 365 days a year. The teams mostly form a fixed composition. Only in case of severe illness or holidays, the composition of the teams changes.

In case of failed ECV, we first offer a second attempt. Thereafter, if a breech presentation is still present, women are counselled about a planned CS or a vaginal breech birth if no contraindication for a vaginal breech birth is present.

Regarding the counseling on mode of delivery, we had three groups within our collaboration using different strategies. The third group consisted of a couple obstetricians offering counselling which was less structured than the counselling provided by the teams nowadays. Counselling in the third group depended on the obstetricians' preferences towards the mode of delivery. These group fade out by natural retirement of these obstetricians from 2012 and onwards. The remaining teams that are still active nowadays differ as follow:

Team 1: counselling is done by both the obstetrician and the midwife. Pregnant women are referred to the midwife first. She starts with asking their preferences towards the mode of delivery. Then she informs them about the type of breech presentation and the possibilities and safety of a vaginal breech birth regarding to the options of a cesarean birth. Both professionals make a difference between low and high risks breech presentations. Low risk breech presentations are defined as a fetus in an incomplete breech presentation with a normal estimated fetal weight, an amniotic fluid index between 8–18, normal fetal hearth rate, no detectable fetal or uterine abnormalities and an uncomplicated pregnancy. All other cases are defined as high risk breech presentations. Thereafter women receive a personal obstetric well founded argue and explanation on the chances of success when attempting a vaginal breech birth followed by reaction time. In case a vaginal breech birth is declined, the midwife explores feelings like fear, anxiety, influences of others to see if these feelings are based on misinterpretations. Then she hands over the counselling to the obstetrician. He summarizes again the options and safety of a vaginal breech birth and a cesarean birth and answers any outstanding questions. Finally, the woman decides together with the obstetrician and midwife about the mode of delivery.

Team 2: counselling is mostly done by the obstetrician who performed the ECV with assistance of a certified midwife. During counselling the focus is on the Hannah trial. Women receive an explanation of the outcomes of the Hannah trial, indicating that a caesarean birth is safer than a vaginal breech birth followed by the question what the pregnant woman's preferences are regarding a breech birth. Thereafter, a decision is made by the woman herself.

In our clinic, women with a breech presentation are not really allocated to one of the two counselling techniques. The received counselling depends on the moment (day of the week) she had an ECV attempt or the moment she is diagnosed with a breech presentation and not eligible for ECV or a decline of ECV. Our clinic have fixed obstetrics consultation hours during a week. In case of diagnosing a breech presentation, mostly done by one of our midwives working in secondary care, agendas of the consultation hours determine who will counsel on ECV and finally perform an ECV attempt hence followed by counseling on the mode of delivery in case of a persisting breech presentation. Over the years and after fading away the third counselling technique, this resulted in an almost equal distribution across the two counselling techniques.

If women opt for a vaginal breech birth, we induce labor at 39 weeks pregnancy if she is not in labor before and the breech presentation is incomplete. In case of a cesarean birth (CS), women will undergo a CS around 39 weeks of pregnancy. Towards the CS, in the beginning of the registration, we performed a planned CS around 37 weeks but we changed over time towards 39 weeks pregnancy as research indicated that a planned CS before 39 weeks was associated with more adverse neonatal outcomes and more often an admission to a neonatal unit due to respiratory problems.

In case of a vaginal breech birth, our clinic follows the guidelines of the Dutch Society of Obstetricians and Gynecologists (NVOG). This guideline advocates a thoroughly observation of the progress of the dilatation and at full dilatation, a thoroughly observation of the descent of the breech. If the dilatation of descent is not progressing, the guideline advices to perform a CS as this can be an indication for a disproportion and to be reluctant with augmentation.

Outcome measures

Our primary outcomes were the influence of applied counseling techniques towards women's choices on the mode of delivery and perinatal mortality. To identify the offered counselling method, we registered from every pregnant woman the name of the professional who counselled her, which decision was made on an ECV attempt as well on the mode of delivery, name of the professionals who applied the ECV attempts, moment of diagnosing breech presentation (antenatal, during labor), reasons to deny an ECV attempt and women's preferences towards mode of delivery after counselling. With these variables, we were able to allocate women in retrospect to a team and hence a counseling technique.

Perinatal mortality was defined as intrapartum death or death within 30 days after birth. Secondary outcomes were adverse maternal events and poor neonatal outcome. Adverse maternal events were defined as postpartum hemorrhage (> 1000 ml), manual removal of the