Labour Outcomes After Successful External Cephalic Version Compared With Spontaneous Cephalic Version

Samantha Krueger, BSc;[1] Julia Simioni, MSc;[1] Lauren E. Griffith, PhD;[2] Eileen K. Hutton, PhD;[3] for the Early External Cephalic Version 2 Trial Collaborative Group

[1]Midwifery Education Program, McMaster University, Hamilton, ON

[2]Department of Clinical Epidemiology and Biostatistics, McMaster University, Hamilton, ON

[3]Department of Obstetrics and Gynecology, McMaster University, Hamilton, ON

Abstract

Objective: This study sought to compare obstetrical outcomes for women with a cephalic presentation at birth resulting from successful external cephalic version (ECV) compared to those resulting from spontaneous cephalic version (SCV).

Methods: Secondary analysis was performed on Early External Cephalic Version Trial data. A total of 931 study participants had breech presentations between 34 and 36 weeks' gestation and cephalic presentations at birth. The incidence of intrapartum interventions was compared between patients with successful ECV (557) and those with SCV (374). A generalized linear mixed model was used to determine ORs for our primary outcomes. Parity, maternal BMI, previous CS, and enrolment centre were controlled for in the analysis.

Results: No differences were found after ECV compared with SCV in the incidence of CS (96 of 557 and 76 of 374, respectively; adjusted OR [aOR] 0.89; 95% CI 0.63–1.26), instrumental birth (68 of 557 and 29 of 373, respectively; aOR 1.55; 95% CI 0.96–2.50), or normal vaginal birth (393 of 557 and 268 of 373, respectively; aOR 0.92; 95% CI 0.68–1.24). Multiparous women with successful ECV were half as likely to require a CS compared with those with SCV and no ECV (28 of 313 and 42 of 258, respectively; aOR 0.45; 95% CI 0.26–0.80).

Conclusion: This is the first study to compare birth outcomes of breech pregnancies that convert to cephalic presentation by means of SCV with birth outcomes of breech pregnancies that have ECV. Women with a cephalic-presenting fetus at birth as a result of successful ECV are not at greater risk of obstetrical interventions at birth when compared with women with fetuses who spontaneously turn to a cephalic presentation in the third trimester.

Key Words: External cephalic version, spontaneous cephalic version, Caesarean delivery, instrumental vaginal birth

Corresponding Author: Dr Eileen Hutton, Michael G. DeGroote Centre for Learning and Discovery, McMaster University, Hamilton, ON. huttone@mcmaster.ca

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Résumé

Objectif : Cette étude avait pour but de comparer les issues obstétricales d'accouchements où la présentation céphalique du fœtus a été obtenue à la suite d'une version par manœuvre externe (VME) ou d'une version spontanée (VS).

Méthodologie : Nous avons effectué une analyse secondaire des données recueillies lors de l'essai Early External Cephalic Version Trial, qui portait sur les versions précoces par manœuvres externes. Au total, 931 femmes dont le fœtus se présentait par le siège entre la 34e et la 36e semaine de gestation et par la tête à l'accouchement ont été retenues. Nous avons comparé l'incidence des interventions intrapartum pratiquées chez les patientes ayant subi une VME efficace (557) à celle des interventions pratiquées chez les patientes pour lesquelles une VS a eu lieu (374). Les RC de nos critères d'évaluation principaux ont été déterminés selon un modèle linéaire mixte généralisé. L'étude a pris en compte la variabilité attribuable à la parité, à l'IMC de la mère, aux antécédents de césarienne et au centre de recrutement.

Résultats : La comparaison des issues obstétricales à la suite d'une VME et des issues à la suite d'une VS n'a pas montré de différence dans l'incidence des césariennes (96 sur 557 et 76 sur 374, respectivement; RC ajusté [RCA] : 0,89; IC à 95 % : 0,63–1,26), des accouchements instrumentaux (68 sur 557 et 29 sur 373, respectivement; RCA : 1,55; IC à 95 % : 0,96–2,50) et des accouchements vaginaux sans particularité (393 sur 557 et 268 sur 373, respectivement; RCA : 0,92; IC à 95 % : 0,68–1,24). Les femmes multipares chez qui la VME a été efficace étaient deux fois moins susceptibles d'avoir besoin d'une césarienne que les femmes ayant eu une VS et qui n'ont subi aucune VME (28 sur 313 et 42 sur 258, respectivement; RCA : 0,45; IC à 95 % : 0,26–0,80).

Conclusion : Il s'agit ici de la première étude comparant les issues obstétricales où la présentation céphalique du fœtus découlait d'une VS à celles où cette présentation est attribuable à une VME efficace. Le risque d'intervention obstétricale durant l'accouchement n'est pas plus grand chez les mères ayant subi une VME efficace que chez celles où une VS du fœtus a eu lieu au cours du troisième trimestre.

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INTRODUCTION

The incidence of breech presentation at term has been reported to be between 3% and 4%.[1] The Term Breech Trial concluded that planned CS is the safest mode of birth for the breech fetus, with no increased risk of mortality or morbidity for the mother compared with vaginal breech birth.[1,2] The findings of the Term Breech Trial led to an increased incidence of CS performed for breech presentation.[1,2] A history of CS is associated with an increased incidence of maternal and fetal morbidities in future pregnancies.[3] External cephalic version is considered a safe maneuver to turn the breech fetus manually through the maternal abdomen into a cephalic presentation in the latter part of pregnancy and before labour. The procedure results in a cephalic presentation approximately 60% of the time and has the potential to reduce the number of CSs performed for breech presentation.[4–6]

Pooled data in meta-analyses of studies evaluating the mode of birth among women with a cephalic presentation following successful ECV compared with women with cephalic presentations and no ECV (Table S1) have established a positive association between successful ECV and CS (Chan et al.,[7] risk ratio 2.04; 95% CI 1.43–2.91; and de Hundt et al.,[4] OR 2.19; 95% CI 1.73–2.76). Despite investigators' conclusions to the contrary, these results tend to cast doubt on the utility of performing ECV. However, no prior studies compared outcomes for women with successful ECV with outcomes in pregnancies in which the fetus was known to be breech in the last trimester but turned spontaneously into a cephalic presentation before birth. This raises questions about the comparability of the pregnancies and the clinical relevance of the findings. Fetuses that have remained in a breech presentation until the later gestational periods are likely different from those that are cephalic from mid-pregnancy. For example, there is a disproportionately large number of breech pregnancies with fetal anomalies, uterine abnormalities, and placentation abnormalities when compared with the general population.[8] To analyze birth outcomes after the ECV procedure itself, a more appropriate comparison group for successful ECV consists of those pregnancies in which the fetus is known to be breech in the third trimester and turns spontaneously to a cephalic presentation. The Early External Cephalic Version Trial data afforded the opportunity to study this population. The purpose of this secondary analysis was to evaluate the difference in mode of birth between breech pregnancies after 33 weeks' gestation that had a successful ECV at 34 or more weeks' gestation and were cephalic at birth compared with breech pregnancies after 33 weeks' gestation that experienced spontaneous cephalic version to cephalic presentation at birth.

ABBREVIATIONS

aOR	adjusted odds ratio
ECV	external cephalic version
EECV	Early External Cephalic Version [Trial]
RR	risk ratio
SCV	spontaneous cephalic version

METHODS

Data were collected from the Early External Cephalic Version Pilot and EECV2 Trial, including a total of 1775 women who gave informed consent and were randomized to either the early ECV group (ECV performed before term between 34+0 and 36+0) or the delayed ECV group (ECV performed at term, at or after term 37+0).[5,9] Ethical approval was obtained for both the pilot trial (University of Toronto Office of Research Services) and the EECV2 trial (University of British Columbia Clinical Research Ethics Board, reference number: C04-0348; and the Research Ethics Board of Hamilton Health Sciences Research Ethics Board, reference number: 07-122). Ethical approval was also obtained from each participating centre. Women were recruited from 83 centres in 22 countries between July 1999 and February 2002 for the EECV study and between December 2004 and June 2008 for the EECV2 trial.[5,9] To be included in the trials, women had to have a singleton pregnancy in breech presentation between 34+0 and 36+0 for the pilot trial and between 33+0 and 35+6 for the EECV2 trial with no contraindications to ECV, labour, or vaginal birth and no increased risk of unstable lie.[5,9] Breech presentation was confirmed by ultrasound assessment before study enrolment.[5,9] Women were not included if their mode of birth was already planned.[5,9] The study was approved by the research ethics boards at the coordinating sites and at all participating centres.[5,9]

The cohort for this secondary analysis was constructed using data from all participants from both EECV Trials who had not withdrawn or been lost to follow-up and had a cephalic-presenting fetus at birth. The cohort was then divided into a successful ECV group and an SCV group. We defined successful ECV as an ECV attempt that resulted in a cephalic presentation immediately following the procedure and a cephalic presentation at birth.[10] Participants with a cephalic presentation at birth because of successful ECV comprised the ECV group. The SCV group was composed of participants with a breech presentation at enrolment and a cephalic presentation at birth that was not the result of ECV. Most of the participants in

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