Maternity - External Cephalic Version

Summary This Guideline describes the procedure for external cephalic version (ECV) and clinical care required when a woman presents at or near term with a singleton breech presentation.

Document type Guideline

Document number GL2017_007

Publication date 04 May 2017

Author branch Healthy Families and Communities

Branch contact 02 9391 9000

Review date 05 May 2023

Policy manual Not applicable

File number H16/102631

Status Active

Functional group Clinical/Patient Services - Maternity

Applies to Board Governed Statutory Health Corporations, Community Health Centres, Local Health Districts, Public Health Units, Public Hospitals, Specialty Network Governed Statutory Health Corporations

Distributed to Divisions of General Practice, Government Medical Officers, Ministry of Health, Private Hospitals and Day Procedure Centres, Public Health System, Tertiary Education Institutes

Audience All clinical staff in NSW Health Maternity Services

NSW GOVERNMENT Health

GUIDELINE SUMMARY

MATERNITY – EXTERNAL CEPHALIC VERSION

PURPOSE

This Guideline describes the procedure for external cephalic version (ECV) and clinical care required when a woman presents at or near term with a singleton breech presentation.

KEY PRINCIPLES

ECV should be an option for women who have a baby that is in a breech presentation and meet criteria for the procedure to be undertaken safely.

USE OF THE GUIDELINE

This Guideline recommends consistent, evidence-based information regarding the option of ECV be provided to the woman by experienced clinicians.

ECV should be offered as noted in GL2016_018 NSW Maternity and Neonatal Service Capability Framework. Each Tiered Maternity Network in NSW should have consultation, referral and transfer processes in place to ensure all women are provided with the option of ECV in the presence of a term singleton breech presentation. The woman's management plan should be documented in her medical record.

REVISION HISTORY

Version	Approved by	Amendment notes
May 2017 (GL2017_007)	Deputy Secretary Strategy and Resources	Replaces GL2016_024 Revision to consent advice Consumer brochure removed
September 2016 (GL2016_024)	Deputy Secretary Strategy and Resources	New guideline

ATTACHMENT

1. Maternity – External Cephalic Version: Guideline

Maternity - External Cephalic Version

NSW GOVERNMENT Health

GUIDELINE

Issue date: May-2017

GL2017_007

CONTENTS

1 BACKGROUND 1
1.1 About this document 1
1.2 Key abbreviations 1
1.3 Related documents 1
2 PROVISION OF ECV 2
2.1 Clinical skills 2
2.2 Access and service availability 2
3 SUITABILITY FOR ECV 3
3.1 ECV exclusion criteria 3
4 PRE ECV DISCUSSION 3
4.1 Gaining consent 5
4.2 Factors associated with ECV success 5
4.3 Complications of ECV 6
5 PREPARATION PROCESS FOR ECV 6
5.1 ECV Procedure 7
5.2 Performing an ECV 7
5.3 Immediately following an ECV attempt 8
5.4 Post ECV antenatal care 8
6 REVIEW AND AUDIT 9
7 REFERENCES 10
8 APPENDICES 12
8.1 Appendix 1: Scoring System to predict success when attempting ECV procedure 12

1 BACKGROUND

1.1 About this document

This Guideline describes the procedure for external cephalic version (ECV) and clinical care required when a woman presents at or near term with a singleton breech presentation.

Included in the Guideline is the following information for ECV:

- Identification of suitability criteria
- Information for counselling
- Clinical procedure
- Consumer information.

The use of complementary therapies to turn a breech baby to a cephalic presentation is not discussed in this Guideline. Information addressing the use of complementary therapies (e.g. Moxibustion) is provided in the consumer information brochure *External Cephalic Version for Breech Presentation* available from the NSW Health website.

1.2 Key abbreviations

AFI	=	Amniotic Fluid Index
CTG	=	Cardiotocograph
ECV	=	External Cephalic Version
FHR	=	Fetal Heart Rate
LMP	=	Last Menstrual Period
U/S	=	Ultrasound
EFM	=	Electronic Fetal Monitoring

1.3 Related documents

This document should be read in conjunction with the following most recent revision of:

- *NSW Health Midwifery Continuity of Carer Model Toolkit 2012*
- *NSW State Health Plan*: Towards 2021
- PD2010_045 *Maternity - Towards Normal Birth in NSW*
- PD2010_022 *Maternity - National Midwifery guidelines for Consultation and Referral*
- PD2005_406 *Consent to Medical Treatment- Patient information*
- GL2016_001 *Maternity - Fetal Heart Rate Monitoring*

- PD2009_003 *Maternity - Clinical Risk Management Guideline*
- GL2016_018 *NSW Maternity and Neonatal Service Capability Framework*
- *NSW Health Guide to Role Delineation of Clinical Services 2016*
- PD2014_036 *Clinical Procedure Safety*

2 PROVISION OF ECV

2.1 Clinical skills

The provision of an ECV should entail a co-ordinated team approach to care. The ECV must be performed by a clinician with the appropriate experience and skills, working within their professional scope of practice. For support there should be a clinician present who is able to perform an urgent caesarean section (CS).

Women should be supported with one to one midwifery care throughout the procedure.

For the purposes of education and training, clinicians developing competency in ECV should be supported and supervised by experienced clinicians to perform an ECV.

2.2 Access and service availability

The Australian National Antenatal Care Guidelines 2014 Module 2[1] recommend all women without exclusion criteria, with a singleton breech pregnancy after 36^{+0} weeks of gestation be offered ECV. There may be a select group of women where the decision to perform an ECV occurs later in a woman's pregnancy. This must remain a decision of the individual clinician taking into account the clinical situation. The safety surrounding ECV is enhanced when the procedure is performed in a setting where there is access to a timely CS.

Guidelines from the United Kingdom[2], the United States[3] and the Royal Australian and New Zealand College of Obstetricians and Gynaecologists[4] support offering ECV when clinically appropriate.

Each Tiered Maternity Network in NSW should have consultation, referral and transfer processes in place to ensure all women are provided with the option of ECV in the presence of a term singleton breech presentation. As noted in the GL2016_018 *NSW Maternity and Neonatal Service Capability Framework* an ECV service should be available in Level 5 maternity services and above. In Level 4 maternity services, clinicians should offer ECV or facilitate referral to a service that provides ECV. Level 3 maternity services may consider offering ECV as a consistent service following a robust risk assessment process, or should facilitate referral to a service that provides ECV. The woman's management plan should be documented in her medical record.

3 SUITABILITY FOR ECV

ECV is an option for women who have a baby that is in a breech presentation and who meet criteria for the procedure to be undertaken safely. Women should be offered an ECV but may not always choose to undergo this procedure.[5]

3.1 ECV exclusion criteria

The following exclusion criteria[2,6] may apply:

- Gestation less than 36+0 weeks
- Ruptured membranes
- Severe hypertension (current pregnancy)
- Multiple pregnancy
- Uterine scar other than a single previous lower segment CS
- Uterine abnormality (excluding resected uterine septum)
- History of placental abruption (current pregnancy)
- Vaginal bleeding in third trimester (current pregnancy)
- Amniotic Fluid Index (AFI < 5 for current pregnancy)
- Non-reassuring fetal welfare e.g. growth restriction, oligohydramnios, increasing Doppler flow, non-reassuring / abnormal antenatal fetal heart rate (FHR) pattern in line with GL2016_001 *Maternity - Fetal Heart Rate Monitoring*
- Fetal abnormalities of the heart, brain and/or spinal column
- Hyperextension of the fetal head
- The following maternal conditions and the woman's birth plan should be considered prior to offering ECV:
    - Significant cardiac disease
    - Uncontrolled hyperthyroidism
    - Poorly controlled diabetes mellitus.

4 PRE ECV DISCUSSION

Consistent, evidence-based information should be provided to the woman by experienced clinicians, ideally working in a unit that supports the option of ECV. Preferably, women should be seen and counselled before 36^{+0} weeks gestation, however in some instances this may happen on the day of the procedure.

Throughout this early discussion, women may ask about alternative therapies or treatments that could be used to turn their baby. To ensure women are provided with consistent advice, a consumer information brochure *External Cephalic Version for Breech Presentation* is available from the NSW Health website.

For women not fluent in English, and for those who are deaf or have impaired hearing, a professional interpreter should be engaged to ensure effective participation in communication and decision making in line with PD 2006_053 *Interpreters - Standard Procedures for Working with Health Care Interpreters*.

Women should be informed of the following at the time of being offered the procedure:

- A description of the ECV procedure
- The rare complications associated with ECV see Section 4.3
- Successful ECV turns the baby into the head-first or cephalic presentation, increasing the likelihood of vaginal cephalic birth and therefore reducing the rate of CS and vaginal breech birth.[7] The Australian National Antenatal Care Guidelines 2014 Module 2[1] suggest the success rate for vaginal birth following ECV is 71 – 84%. This is slightly lower than the rate of vaginal birth for babies that have been in a cephalic presentation throughout pregnancy[8]
- A recent Cochrane review suggests 40-50% of ECV procedures are able to turn the baby from a breech to a cephalic presentation.[7] Module 2 of the National Antenatal Care Guidelines suggests the range may be 36–72%. A study by Burgos et al, (2012)[9] provides a predictive index for the outcome of ECV and a success based scoring index for ECV at term in line with Appendix 1, which may aid the clinical decision making process.
- The incidence of spontaneous version when a baby remains breech following ECV is small and the chance of this occurring diminishes further with increasing gestation[10]
- A spontaneous reversion rate of 3–14% has been reported after 36 weeks gestation.[1] A uterus with a septum will account for a number of these instances. The reversion to breech is lower with increasing gestation
- An ECV procedure only takes a few minutes, but the entire pre and post ECV assessment process can take up to 2 hours
- The possible need for insertion of IV cannula and collections of bloods
- Tocolytics *may be* administered to relax the uterus and women should be informed of the medication to be used and the associated side effects
- The need for electronic fetal monitoring (EFM) for fetal welfare assessment

- Only moderate abdominal pressure is required to perform an ECV and there should be no more than mild to moderate pain or discomfort during the procedure. Most women reportedly tolerate ECV well because of the short duration and rate the procedure as a satisfactory experience, regardless of outcome.[1] Options for pain relief should also be discussed
- That they have the right to suspend the procedure at any time should the pain become more than they are able to tolerate
- To assess fetal welfare prior to and following the procedure electronic FHR monitoring is essential in line with GL2016_001 *Maternity - Fetal Heart Rate Monitoring*.[11]

The role of regional anaesthesia in ECV is unclear, with no level 1 evidence to support its routine use.

4.1 Gaining consent

Consistent evidence-based information should be provided to the woman by experienced clinicians prior to consent being obtained for the procedure in line with PD2005_406 *Consent to Medical Treatment- Patient information*.

4.2 Factors associated with ECV success

According to most studies, successful ECV is more likely with:

- A clinician skilled in performing the procedure[12]
- Tocolysis[13,14]
- A posterior placenta[12,15]
- Multiparous women[1,12]
- Liquor volume AFI >10 [1,12]
- Greater than 36 weeks gestation[2,16,17]
- Complete breech position [2]
- Non-engagement of the presenting part [1, 7]
- Head easily felt [7]
- Soft abdomen[16]
- Normal BMI[1]
- Fetal spine is lateral or antero-lateral rather than directly anterior or directly posterior.

4.3 Complications of ECV

Complications of ECV are very rare.[18-21] One of the key challenges facing women and their clinicians regarding ECV is the need to be able to counter the differences between evidence-based information about ECV and some commonly held misbeliefs and fears in the community.

A 2015 Cochrane review notes the following complication rates after ECV[7]:

- Vaginal bleeding 0.47%
- Emergency CS 0.43%
- Cord compression with cardiotocograph (CTG) changes 0.05%
- Abruption 0.12%
- Perinatal mortality (most were delayed / unexplained) 0.16%
- Persistent abnormal CTG 0.37%
- Transient abnormal CTG 5.7%
- Feto-maternal haemorrhage 0.5%

There were no cases of cord entanglement or maternal death.

5 PREPARATION PROCESS FOR ECV

Following confirmation of the woman's breech presentation at 36 weeks or beyond:

- Confirm gestation – review LMP and/or early U/S scans
- Check previously performed ultrasound for exclusion to ECV
- Assess suitability for ECV – refer to Section 3.1
- Provide written information regarding ECV which is available in the consumer information brochure *External Cephalic Version for Breech Presentation* accessible from the NSW Health website and undertake pre ECV counselling in line with Section 4
- Gain consent in line with PD2005_406 *Consent to Medical Treatment- Patient information* and organise a date and time for the procedure
- Prior to the ECV, confirm the correct procedure is being performed on the correct woman and that the procedure corresponds to the treatment documentation in line with PD2014_036 *Clinical Procedure Safety*[22,]
- Check the woman's blood group and administer Rh (D) Immunoglobulin (Anti-D) in line with GL2015_011 *Maternity - Rh (D) Immunoglobulin (Anti D)* post ECV for all Rh negative women

- Complete the Between the Flags Antenatal Short Stay Observation Chart (ASSOC)
- The room should be comfortable and quiet, with appropriate equipment available[1]. Ensure the woman's privacy is maintained during the procedure
- It is recommended the woman is accompanied by a support person/people and a midwife is also present for support throughout the procedure.

5.1 ECV Procedure

- Prepare the woman for the procedure ensuring privacy and comfort
- Palpate the woman's abdomen and confirm fetal presentation, position, level of engagement
- Perform a bedside U/S to more accurately confirm presentation, attitude of the fetal head, liquor volume and confirm placental location
- Document the U/S and palpation findings and the decision to proceed
- Assess and document fetal wellbeing with a CTG - there should be a reactive antenatal FHR pattern with reassuring features
- Consider need for tocolysis on an individualised basis e.g. Terbutaline
- Consider options for pain relief during the procedure
- Adjust bed to a height comfortable for the clinician performing the procedure
- Assist the woman into this position:
    - Supine
    - Left lateral tilt
    - Lower head of bed at a slight angle that is comfortable for the woman
    - Knees slightly bent.

5.2 Performing an ECV

- Ensure the woman understands the procedure
- With firm pressure, elevate the lower fetal pole out of the maternal pelvis. This may require sustained pressure to obtain elevation of the breech
- Perform version by encouraging the baby to do a forward somersault. Where the head does not cross the midline, a backward roll may be more effective. Some clinicians prefer to attempt to roll in the direction of least distance between head to pelvis. i.e. if the head is to the maternal right of midline, an anticlockwise roll

- During the ECV, monitor the fetal heart with a Doppler or ultrasound every 30 seconds
- If a fetal bradycardia occurs, stop the procedure, position the woman in the left lateral and wait 3-4 minutes for FHR to return to a normal pattern before continuing. Fetal bradycardia is a physiological response of a healthy fetus to cord compression. It is nearly always temporary and rarely requires further intervention. If the FHR does not recover, consider reversing the version. If bradycardia persists, expedite operative delivery
- Monitor maternal comfort and stop if the woman feels sharp pain or does not want to proceed
- If there is no success after 10-15 minutes discontinue the procedure
- Confirm fetal presentation with ultrasound at the end of the procedure.

5.3 Immediately following an ECV attempt

- The care of Rh negative women should be provided in line with GL2015_011 *Maternity - Rh (D) Immunoglobulin (Anti D).* For Rh negative women, a Kleihauer test should be performed following the procedure
- Perform post-procedure FHR monitoring for at least 30 minutes. Do not remove the CTG until all antenatal FHR features are reassuring. Escalate the FHR findings as necessary according to the antenatal algorithm in line with GL 2016_001 *Maternity - Fetal Heart Rate Monitoring*
- The woman should not be discharged home until the CTG is normal. Investigate reasons for persistently abnormal or non-reassuring FHR pattern and action appropriately
- Document clinical assessments on the ASSOC and the procedure details in the woman's medical record.

5.4 Post ECV antenatal care

Post ECV antenatal care planning needs to be determined locally, with consideration being given to the woman's individual needs:

- After the procedure ensure the woman has received post ECV information about what to expect in regard to fetal movement, and how to contact the hospital if the following should arise: abdominal pain, vaginal bleeding or fluid loss. Information detailed in the consumer information brochure *External Cephalic Version for Breech Presentation* (available from the NSW Health website) should be provided to women post ECV

- Discuss options for women whose baby remains in the breech position - see NSW Health Guideline -*Maternity-Supporting women planning a vaginal breech birth* and provide the consumer information brochure *Breech Baby at Term*, available from the NSW Health website
- Document the woman's wishes for further care and preferred birth plan. Consider each woman's individualised needs and preferences, also consideration of planning a repeat ECV
- Repeat ECV can be offered on an individualised basis taking into account the woman's gestation, parity and willingness to have the procedure repeated.

6 REVIEW AND AUDIT

There are a number of relevant data items that are worthy of collection on an ongoing basis as part of service audit and review:

- ECV attended:
  - Not done
  - Successful
  - Unsuccessful
- ECV available:
  - Declined
  - Not offered
- ECV contraindicated
- ECV not available

7 REFERENCES

1. Australian Health Ministers' Advisory Council 2014. Clinical Practice Guidelines: Antenatal Care – Module II. Australian Government Department of Health; Canberra.
2. RCOG. External Cephalic Version and Reducing the Incidence of Breech Presentation Guideline no. 20a. London: *Royal College of Obstetricians and Gynaecologists; 2010.*
3. Americal Congress of Obstetricians and Gynaecologists. Mode of term singleton breech delivery. *Obstetrics & Gynecology* 2006;108(1):235-237.
4. RANZCOG. Management of breech presentation at term (C-obs 11). Melbourne RANZCOG; 2009. Updated July 2016.
5. Advanced Maternal & Reproductive Education. Becoming a Breech Expert (BABE) Course Manual (5rd Edition). Sydney, Australia; 2015.
6. Moster D, Lie RT, Markested T. Long term medical and social consequences of preterm birth. *New England Journal of Medicine.*2008. 359 262-273.
7. Hutton EK, Hofmeyer G, Dowswell T. External cephalic version for breech presentation before term (Review) *The Cochrane Collaboration* 2015
8. de Hundt M, Velzel J, de Groot CJ, Mol BW, Kok M. Mode of delivery after successful external cephalic version: a systematic review and meta-analysis. *Obstetrics & Gynecology.* 2014 Jun;123(6):1327-1334.
9. Burgos J, Cobos P, Rodriguez L, Pijoan JI, Fernamsez-Liebrez L, Martinez-Astorquiza T, Melchor JC. Clinical score for the outcome of external cephalic version: A two-phase prospective study. *Australian and New Zealand Journal of Obstetrics and Gynaecology.* 2012;52(59-61).
10. Ben-Meir A, Elram T, Tsafrir A, Elchalal U, Ezra Y. The incidence of spontaneous version after failed external cephalic version. *American Journal of Obstetrics & Gynecology.* 2007 Feb;196 (2):157.e151-153.
11. NSW Health GL2016_001 Maternity - Fetal Heart Rate Monitoring. North Sydney: NSW Health; 2016
12. Bogner G, Xu F, Simbrunner C, Bacherer A, Reisenberger K. Single-institute experience, management, success rate and outcome after external cephalic version. *International Journal of Gynecology & Obstetrics.* 2012; 116:134-137.
13. Cluver C, Hofmeyer GJ, Gyte GM, Sinclair M, Interventions for helping to turn term breech babies to head first presentation when using external cephalic version. *Cochrane Database Systematic Review.* 2012;1: p.CD000184.
14. Nor Azlin MI, Haliza H, Mahdy ZA, Anson I, Fahya MN, Jamil MA. Tocolysis in term breech external cephalic version. *International Journal of Gynecology & Obstetrics.* 2005;88:5-8.

15. Kok M, van der Steeq JW, van der Post JA, Mol BW. Prediction of success of external cephalic version after 36 weeks. *American Journal of Perinatology.* Feb 2011;28(2):103-110.

16. Hutton E, Reitsma A. A comprehensive review of the research literature on external cephalic version (ECV). *Canadian Journal of Midwifery Research and Practice.* 2008;7 (1):4-16.

17. Hofmeyr GJ, Kulier R. External cephalic version for breech presentation at term (Review).*The Cochrane Collaboration.* 2011.

18. Boucher M, Bujold E, Marquette GP, Vezina Y. The relationship between amniotic fluid index and successful external cephalic version: a 14-year experience. *American Journal of Obstetrics and Gynecology* 2003;189(751-4).

19. Impey L, Lisoni D. Outcome of external cephalic version after 36 weeks' gestation without tocolysis *Journal of Maternal-Fetal Medicine.* 1999;8(5):203-207.

20. Impey L, Pandit M, Tocolysis for repeat external cephalic version in breech presentation at term: a randomised, double-blinded, placebo-controlled trial. *BJOG.* 2005;112(5):627-631.

21. Tong Leung VK, Suen S, Singh Sahota D, Lau TK, Yeung, Leung T. External cephalic version does not increase the risk of intra-uterine death: a 17-year experience and literature review. *Journal of Maternal-Fetal & Neonatal Medicine* 2012;25(9):1774-1778.

22. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards. Sydney: ACSQHC; 2012.

8 APPENDICES

8.1 Appendix 1: Scoring System to predict success when attempting ECV procedure

Table 1 Predictive index for the outcome of external cephalic version at term[9]

Element	1	2	3	4	
Parity	Primiparous		Biparous	Triparous or more	
Placental location	Anterior	Fundal lateral	Posterior		
Type of breech	Frank incomplete	Complete	Double footling		
Amount of amniotic fluid	Low	Normal		Abundant	
TOTAL Score					

Table 1 needs to be completed before attempting to predict success as outlined in Table 2.

Table 2 Prediction of success based on score of external cephalic version (ECV) index

Score of ECV Index	n = 1000 (%)	Success rate (%)	Fisher's 95% CI
4–6	346 (34.6)	30.9	26.1–36.1
7–8	451 (45.1)	56.5	51.8–61.2
9–14	203 (20.3)	76.8	70.4–82.5