

## External cephalic version

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**The management of breech presentation at term is variable. This article presents the options, and reviews the current evidence for, and success rate of, external cephalic version. The work of the breech clinic at the Liverpool Women's Hospital is also discussed.**

**B**reech presentation at term occurs in 3–5% of deliveries and is associated with increased maternal and neonatal morbidity. In a recent review of long-term outcome (up to school age) of neonates undergoing breech delivery at term there was a 19.4% overall morbidity, irrespective of mode of delivery (Danielian et al, 1996). The range of handicap varied from severe, to problems such as speech delay, auditory and visual delay, and growth delay. In an attempt to minimize these risks obstetricians are revisiting interventions such as external cephalic version (ECV) and elective caesarean section.

We believe that a woman presenting with a fetus in breech presentation at term should be offered the choice of ECV, elective caesarean section, or vaginal breech delivery provided adequately skilled staff are available to objectively counsel the woman so an informed choice can be reached. The ongoing international randomized trial of vaginal vs caesarean delivery for the term breech being carried out at the University of Toronto Maternal, Infant and Reproductive Health Research Unit, Canada will help to clarify the safety aspects of the two modes of delivery and this information, when available, will be invaluable in the counselling of these women.

### **EXTERNAL CEPHALIC VERSION: THE EVIDENCE**

ECV has been practised for centuries and involves the lifting of the fetal breech from the maternal pelvis and gently manoeuvring the fetus through 180° in its long axis by a forwards or backwards roll. The art of ECV has most recently been described by Myerscough (1998).

Hofmeyer (1998a) identified six randomized trials comparing ECV with expectant management at term. The pooled data showed ECV to be associated with a significant reduction in non-cephalic births (relative risk 0.42, 95% confidence interval (CI) 0.35–0.5) and caesarean section (relative risk 0.52, 95% CI 0.39–0.71). Put another way, one less caesarean section will be performed for every seven ECVs attempted (95% CI 5–12). ECV before term, at less than 37 weeks, has not been shown to be effective. Indeed, if fetal distress were to occur during preterm ECV and delivery became necessary, then this could result in an increased perinatal morbidity and mortality.

Despite the evidence in favour of ECV, there is marked variation in the practice of consultants offering this service, with only about half of consultants offering the service themselves or willing to refer the woman to a colleague providing the service. There is also marked variation in the investigations undertaken before and after the procedure, the use of tocolytics, and the management of the failed ECV.

A survey of obstetricians' personal choices for themselves or their partners (Al Mufti et al, 1997) revealed that only 27% opted for ECV while 57% chose an elective caesarean section for the uncomplicated breech at term.

### **SUCCESS RATE**

The reported success rate is usually between 50 and 80%. Lau et al (1997) specifically looked for predictors of outcome of ECV at term in a prospective observational study that included 243 women (69.5% success rate). Eight factors were found to be significantly associated with the outcome of ECV, but only three were identified as important following regression analysis:

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- Difficulty in palpation of the fetal head
- Engagement of the breech
- Nulliparity.

In the absence of any of these factors the success rate of ECV was more than 90%, falling to less than 20% if two or more factors were present.

Attempts have been made to improve on the success of ECV by introducing other techniques such as amnioinfusion, epidural anaesthesia, and fetal acoustic stimulation. Tocolysis has been shown to improve the success rate of ECV performed at term when used both routinely and selectively (Hofmeyr, 1998b).

### RISKS

Absence of contraindications listed in *Table 1* will minimize the risks of failure and complications for mother and fetus.

ECV after previous caesarean section has been shown to be safe and effective with no reports of scar dehiscence in selected cases.

The complications following ECV at term are rare (*Table 2*).

Rhesus-negative women should be screened for fetomaternal haemorrhage to detect those for whom the routine dose of anti-D (500 IU/ml) would be inadequate.

Transient fetal bradycardia has been described after ECV and monitoring the fetus following ECV is important. Cases of fetal asystole of up to 3 minutes have occurred.

Hofmeyer and Sonnedecker (1983) studied cardiocotographic recordings pre- and post-ECV in 53 consecutive attempts at ECV in 52 patients. Baseline bradycardia was noted in five fetuses after ECV with a duration of between 1 and 12 minutes. All reverted to a reactive pattern. The proposed mechanism for the bradycardia is temporary hypoxia resulting from a relative reduction in utero-placental flow on the basis of increased intrauterine pressure, which, although less than a uterine contraction, is maintained for longer. This is supported by the fact that no bradycardia in excess of 5 minutes occurred when the duration of the manipulation was less than 3 minutes. The duration and amount of force applied should be limited in all manipulations.

Although some fetuses may revert back to breech presentation spontaneously, repeated attempts at ECV are acceptable provided the same criteria are used.

Compound presentation is a rare complication of ECV but the incidence of compound lower extremity/head presentation is higher after ECV than in the spontaneously cephalic presentation.

### THE LIVERPOOL EXPERIENCE

In March 1997 a breech clinic was set up at the Liverpool Women's Hospital. This is a consultant-led service, its purpose to coordinate the care of all women at term with the fetus in breech presentation. The clinic is held once weekly on the labour ward with a dedicated midwife in administrative charge.

The women are referred from the hospital or community antenatal clinics from 37 weeks. On arrival all women have the presentation confirmed by ultrasound and provided no contraindications exist they are offered ECV. Tocolysis is routinely used (ritodrine 10 mg intramuscularly). Ultrasound scanning and a cardiotocographic recording are conducted to ensure fetal wellbeing and to exclude oligohydramnios and hyperextension of the fetal head. Full counselling is provided and facilities for immediate caesarean section are on hand.

In a 12-month period (January–December 1998) 85 women were seen with confirmed breech presentation after 37 weeks (*Figure 1*). The outcomes after a successful ECV showed a 75% normal delivery rate, a 10% instrumental delivery rate and a 16% caesarean section rate.

**TABLE 1.**  
**Contraindications to external cephalic version at term**

Absolute	Multiple pregnancy
	Antepartum haemorrhage
	Severe fetal abnormality
	Hyper extended head
	Indication for caesarean section
	Non-reactive cardiotocograph
	Relative
Moderate/severe hypertension	
Fetal growth restriction	
Oligohydramnios	
Marked maternal obesity	

**TABLE 2.**  
**Complications following external cephalic version at term**

Complications	Estimated incidence
Fetomaternal haemorrhage	1–2%
Cardiotocographic changes	36%
Reversion to breech	1%
Compound presentation	0.5%
Fetal injury	Isolated reports
Umbilical cord prolapse/entanglement	1%

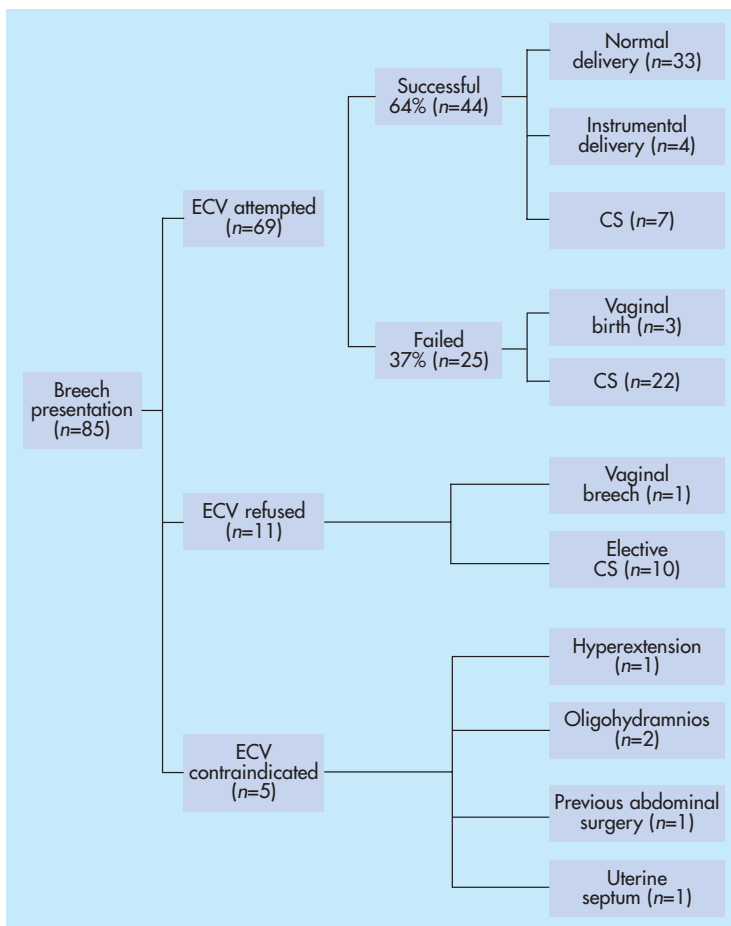


Figure 1. Management of cases presenting to the Liverpool Women's Hospital — Breech Clinic (January–December 1998). CS = caesarean section; ECV = external cephalic version.

The caesarean section rate after failed ECV was 88%. Four women opted for the term breech trial. Two adverse effects had occurred (antepartum haemorrhage and fetal bradycardia >3 minutes), but neither complication required any further action.

### ALTERNATIVES

Over the years there have been other methods described to encourage the cephalic version of the breech presentation. Hofmeyr (1998c) analysed three studies of cephalic version by

### KEY POINTS

- External cephalic version is safe and effective in a well-selected population.
- All women at term with an uncomplicated breech presentation should be offered the choice of external cephalic version.
- Tocolysis increases the success rate.

postural management and concluded that there was a non-significant trend towards fewer non-cephalic births, but that further studies were needed with large numbers of patients in order to reach statistical significance. However, it remains a simple technique with wide potential application.

Hypnosis has also been suggested as a means to convert the breech to vertex, with psychophysiological factors thought to be influencing the conversion rate. Traditional Chinese medicine techniques have also been investigated using moxibustion (burning herbs to stimulate acupuncture points). This is thought to work by increasing fetal activity. Traditional methods, however, are not necessarily without problems. Becroft and Gunn (1989) reported on cranial haemorrhages associated with trauma during traditional methods of attempting cephalic version of the breech in 47 Pacific Islanders.

### CONCLUSION

ECV is the method of choice if version to cephalic presentation is planned at term. It reduces the caesarean section rate among breech presentations and decreases the risk related to breech delivery. The evidence in favour of ECV is good enough for the Royal College of Obstetricians and Gynaecologists (1993) to recommend that all women with an uncomplicated breech presentation at term be offered an ECV.

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A full list of references is available from the authors on request.

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