Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

INSTITUTE OF OBSTETRICIANS & GYNAECOLOGISTS
ROYAL COLLEGE OF PHYSICIANS OF IRELAND

NATIONAL CLINICAL GUIDELINE

The Management of Breech Presentation

Institute of Obstetricians and Gynaecologists,
Royal College of Physicians of Ireland
and the
Clinical Strategy and Programmes Division,
Health Service Executive

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Contents

1. Revision History

Version No.	Date	Modified By	Description
1.0	December 2016	Dr. Mark Hehir	Version 1.0, Draft for Review

2. Key Recommendations

1. If a breech presentation is suspected clinically at term, an ultrasound examination should be performed to confirm the presentation and perform a biophysical profile.

2. If the presentation of a breech presentation is confirmed at term, a Departmental ultrasound by a trained sonographer should be performed to check for a fetal malformation, to check for placental localisation and to estimate fetal weight.

3. If a fetal malformation is diagnosed, genetic testing should be considered as this may influence decision-making about the mode of delivery.

4. If a breech presentation is confirmed, a senior obstetrician should discuss with the women the mode of delivery, including the risks and benefits to the woman and her baby both short-term and long-term. This discussion should take place as soon as possible and be documented in the clinical records. It should also be explained that the planned course of action may have to be changed if clinical circumstances change. For example, the baby may turn spontaneously into a cephalic presentation.

5. Consideration should be given to offering the woman with a breech presentation an external cephalic version (ECV). Ideally, this should be undertaken by an experienced obstetrician under ultrasound control. The

woman should be advised that even if the ECV is successful, the baby may revert spontaneously to a breech presentation.

6. If a breech presentation is diagnosed before labour at term, it is reasonable to offer the woman an elective Caesarean section (CS). The woman should also be advised that even though a CS is planned, she could labour quickly before there is time to carry out the CS. This is more likely to occur if she has had a previous vaginal delivery or if she goes into preterm labour.

7. If the woman has had a previous vaginal delivery and the baby is normally grown at term with a normal ultrasound examination, it is reasonable to deliver the baby vaginally in the absence of intrapartum complications.

8. Oxytocic agents to induce or augment labour should be avoided in the presence of a breech presentation because they may disguise fetopelvic disproportion. Oxytocin, however, may be used for the delivery of the aftercoming head.

9. If the presentation is breech and delivery is imminent preterm, consideration may be given to a vaginal delivery in the absence of intrapartum complications.

10. A vaginal breech delivery should be conducted by a senior obstetrician. All obstetricians and midwives involved in intrapartum care should be trained as to how to conduct a vaginal breech delivery using, if necessary, simulators because all pregnancies where there is a breech presentation may be complicated by a precipitous labour and delivery.

11. In a twin pregnancy where the first baby is delivered vaginally, the second baby with a breech presentation can be delivered in the absence of intrapartum complications as a vaginal delivery by an experienced obstetrician.

12. If there is a footling presentation diagnosed intrapartum, strong consideration should be given to delivery by CS irrespective of gestation. A footling presentation may be associated with a cord presentation and therefore an amniotomy is best deferred to avoid cord prolapse. If the membranes rupture spontaneously in the present of a footling presentation, a vaginal examination should be perform to exclude a cord prolapse.

13. If a woman has a breech presentation at term and a single previous CS, it is reasonable to offer her a repeat elective CS ideally at 39 weeks gestation.

14. A paediatrician should be asked to attend all vaginal breech deliveries.

3. Purpose and Scope

The purpose of this guideline is to outline the role of vaginal breech delivery in contemporary practice and to review the evidence on the safety and hazards associated with differing modes of delivery. The guideline examines evidence for and against vaginal breech delivery and also offers guidance regarding consideration of vaginal delivery.

These guidelines are intended for healthcare professionals, particularly those in training, who are working in HSE-funded obstetric and gynaecological services. They are designed to guide clinical judgment but not replace it. In individual cases a healthcare professional may, after careful consideration, decide not to follow a guideline if it is deemed to be in the best interests of the woman.

4. Background and Introduction

Breech presentation occurs frequently among preterm babies in utero, however, most babies will spontaneously revert to a cephalic presentation. As a result approximately 3% of babies are in the breech position at term (Hickok DE et al, 1992). In clinical practice this presents challenges regarding mode of delivery and has provoked debate involving clinicians and patients which have been both complex and polarising (Turner and Maguire, 2015).

Persistent breech presentation at term has been linked to a number of structural obstacles, which prevent the baby achieving cephalic presentation such as fetal or uterine structural anomalies, increased or decreased liquor volume or abnormal placental location such as placenta praevia. There is also an element of chance in having a persistent breech presentation. Breech presentation is associated with increased rates of perinatal morbidity and mortality due to the increased likelihood of prematurity, congenital malformations and the potential for traumatic birth and hypoxia (Cheng M et al, 1993; Berhan Y et al, 2016).

Internationally rates of vaginal breech delivery have decreased dramatically since the early 1990's and, as a result, planned vaginal breeches at term are now unusual (Vidaeff AC et al, 2006). Rates of vaginal breech delivery in the Irish obstetric population similarly showed a decrease during the 1990s and this trend was cemented by the publication of the Term Breech Trial in 2000 (Hehir MP et al, 2014; Hannah ME et al, 2000). Following this landmark publication, the American College of Obstetricians and Gynecologists (ACOG) and the Royal College of Obstetricians and Gynaecologists (RCOG, UK) 2001 guidelines recommended elective caesarean delivery for all term breech-presenting babies (ACOG Committee Opinion No. 265, RCOG Green Top No 20). In 2006, however, both ACOG and RCOG opted to recommend that a trial of labour is justified in certain circumstances (ACOG Committee Opinion No. 340, RCOG Guideline no 20b). In 1993, the International Federation of Gynecology and Obstetrics (FIGO) also recommended widespread use of caesarean section as the preferred mode of delivery for breech presentation at term in developed countries (Kunzel W et al, 1994).

Following downward trends of vaginal breech delivery and the resultant impact on the overall rate of cesarean delivery there have been renewed calls to allow women the option of at least attempting vaginal breech delivery (van Roosmalen J et al, 2014).

5. Methodology

Medline, EMBASE and the Cochrane Database of Systematic Reviews were searched using terms relating to breech, vaginal breech delivery, term breech delivery, preterm breech delivery and second twin breech delivery. In addition a search was conducted of current international guidelines in the UK, USA, Canada, Australia and New Zealand.

Where available, relevant meta-analyses and systematic reviews were obtained and examined.

The principal guideline developers were Dr Mark Hehir, SpR and Professor Michael Turner (HSE Clinical Programme).

The guideline was reviewed by Dr Ronan Gleeson (Obstetrician, Rotunda), Dr Sharon Sheehan (Master, CWIUH), Dr Michael Robson (Obstetrician, NMH), Professor Richard Greene (Obstetrician, Cork), Dr Maire Milner (Obstetrician, OLOL), Dr Michael Gannon (Obstetrician, Mullingar), Dr Michael Brassil (Obstetrician, Portiuncula), Dr Ulrich Bartels (Obstetrician, Mayo), Dr Heather Langan (Obstetrician, Sligo), Dr Amanda Cotter (Obstetrician, Limerick), Dr Paul Hughes (Obstetrician, Kerry), Dr Eddie O'Donnell (Obstetrician, Waterford), Dr Trevor Hayes (Obstetrician, Kilkenny), Dr Miriam Doyle (Obstetrician, Portlaoise), Dr Vicky O'Dwyer (JOGS).

6. Discussion with the woman about the options for a vaginal presentation at term.

6.1 Risk of Neonatal Morbidity and Mortality

If a breech presentation is suspected clinically at term, an ultrasound

examination should be performed to confirm the presentation and perform a biophysical profile.

If the presentation of a breech presentation is confirmed at term, Departmental ultrasound by a trained sonographer should be performed to check for a fetal malformation, to check for placental localisation and to estimate fetal weight.

If a fetal malformation is diagnosed, genetic testing should be considered as this may influence decision-making about the mode of delivery.

If a breech presentation is confirmed, a senior obstetrician should discuss with the women the mode of delivery, including the risks and benefits to the woman and her baby both short-term and long-term. This discussion should take place as soon as possible and be documented in the clinical records. It should also be explained that the planned course of action may have to be changed if clinical circumstances change. For example, the baby may turn spontaneously into a cephalic presentation.

Consideration should be given to offering the woman with a breech presentation an external cephalic version (ECV). Ideally, this should be undertaken by an experienced obstetrician under ultrasound control. The woman should be advised that even if the ECV is successful, the baby may revert spontaneously to a breech presentation.

Planned caesarean delivery carries a reduced risk of early neonatal morbidity for breech-presenting babies at term compared with vaginal birth. It may be associated with a reduced risk of perinatal mortality. The question of the most appropriate mode of delivery for a breech presentation was investigated by the Term Breech Trial, a large randomised international study which took place in 121 centres across 26 countries (Hannah ME et al, 2000). The results of the trial proved to be controversial and divisive, reported cases of mortality specifically associated with traumatic breech delivery were extremely rare and also influenced by care received in countries with a high background perinatal mortality rate. In national retrospective analyses the rate of mortality associated with breech delivery is much lower than that quoted in the Term Breech Trial,

although a higher rate of mortality in vaginal compared with caesarean delivery is suggested (Rietberg CC et al, 2003; Zsirai L, 2016).

The rate of neonatal morbidity, particularly hypoxia and other adverse neurologic outcomes, associated with vaginal breech delivery was higher than that seen with cesarean delivery in the Term Breech Trial (Hannah ME et al, 2000). Furthermore a large contemporary retrospective study in Canada, examining the outcomes of 52,000 breech deliveries post-publication of the Term Breech Trial between 2003 – 2011 found that, while there were now more vaginal breech deliveries happening than at the beginning the study period, morbidity associated with vaginal breech delivery remained increased over planned caesarean or caesarean in labour (Lyons J et al, 2015).

The PREMODA study, a large scale prospective observational study conducted across France and Belgium consisting of approximately 8000 term breech deliveries, found that where vaginal breech delivery was a common practice that high rates of vaginal delivery could be achieved and that morbidity and mortality was not increased when compared with elective cesarean section (Goffinet F et al, 2006). On further analysis of this study cohort it was found that those most likely to suffer morbidity secondary to a vaginal breech delivery were less than 39 weeks gestation, with a birthweight <10th centile and delivered in a unit which delivered <1500 women per year (Azria E et al, 2012). Use of selection criteria has been suggested as a method of allowing safe vaginal breech delivery, findings from an Irish cohort of vaginal breech deliveries suggested that multiparity, birthweight <3800g and consultant presence would improve rates and safety of vaginal breech delivery (Alarab M et al, 2004). While these criteria are useful and were chosen from an Irish population they have not been validated in a prospective study.

If a breech presentation is diagnosed before labour at term, it is reasonable to offer the woman an elective Caesarean section (CS). The woman should also be advised that even though a CS is planned, she could labour quickly before there is time to carry out the CS. This is more likely to occur if she has had a previous vaginal delivery.

If the woman has had a previous vaginal delivery and the baby is normally grown at term with a normal ultrasound examination, it is reasonable to deliver the baby vaginally in the absence of intrapartum complications.

Oxytocic agents to induce or augment labour should be avoided in the presence of a breech presentation because they may disguise fetopelvic disproportion. Oxytocin, however, may be used for the delivery of the aftercoming head.

If the presentation is breech and delivery is imminent preterm, consideration may be given to a vaginal delivery in the absence of intrapartum complications.

A vaginal breech delivery should be conducted by a senior obstetrician. All obstetricians and midwives involved in intrapartum care should be trained as to how to conduct a vaginal breech delivery using, if necessary, simulators because all pregnancies where there is a breech presentation may be complicated by a precipitous labour and delivery.

In a twin pregnancy where the first baby is delivered vaginally, the second baby with a breech presentation can be delivered in the absence of intrapartum complications as a vaginal delivery by an experienced obstetrician.

If there is a footling presentation diagnosed intrapartum, strong consideration should be given to delivery by CS irrespective of gestation. A footling presentation may be associated with a cord presentation and therefore an amniotomy is best deferred to avoid cord prolapse. If the membranes rupture spontaneously in the present of a footling presentation, a vaginal examination should be perform to exclude a cord prolapse.

If a woman has a breech presentation at term and a single previous CS, it is reasonable to offer her a repeat elective CS, ideally at 39 weeks gestation.

A paediatrician should be asked to attend all vaginal breech deliveries.

When caring for a woman with a breech presentation in labour a low threshold for caesarean delivery should be maintained. Continuous electronic fetal

monitoring is indicated. Persistent decelerations in the fetal heart rate or evidence of umbilical cord prolapse should prompt immediate caesarean delivery when vaginal delivery is not imminent. Signs of fetopelvic disproportion such as lack of labour progress or a lack of descent in the second stage may also make a caesarean delivery necessary. The need for labour augmentation may be an indication of fetopelvic disproportion and hence oxytocin should only be commenced with consultant input. Fetal blood sampling from the buttocks should not be used as a method of assessing fetal well-being.

There is no evidence that the long-term health of babies with a breech presentation at term is influenced by mode of delivery. Follow-up of those babies enrolled in the Term Breech Trial showed there was no improvement in medium (3-month follow-up) (Hannah ME et al, 2002) or long term (2-year follow-up) (Hannah ME et al, 2004) outcomes among those babies that were delivered vaginally versus those born by caesarean section. Retrospective analysis of term breech deliveries at a single UK centre also found no increase in rates of cerebral palsy, requiring long term pediatric input or special educational needs among children who had a vaginal breech delivery versus an elective pre-labour cesarean section. Women should thus be counselled that after an uncomplicated vaginal breech delivery their baby is at no increased risk of further adverse outcomes.

6.2 Risk of Maternal Morbidity

Short-term maternal morbidity is extremely low regardless of mode of delivery. Caesarean delivery may result in problems in future pregnancies such as abnormal placentation with subsequent haemorrhage and the need for hysterectomy.

Elective caesarean delivery for breech presentation is a safe procedure for the woman. It is associated with very low rates of operative complication or transfusion. The causal relationship between mode of delivery and maternal mortality shows that death is more likely among those delivered by cesarean section (Clark SL, 2008). The term breech trial found no difference in the rates

of post-partum haemorrhage, genital tract trauma, wound breakdown or infection between mothers who had a caesarean section or a vaginal breech delivery (Hannah ME, 2000).

As the rate of caesarean delivery for breech presentation has increased, there has been much debate regarding the more widespread effect of contemporary attitudes to breech delivery on future pregnancies (van Roosmalen J, 2014; Hehir MP, 2014). By almost eliminating vaginal breech delivery as a management option, leading to an extremely high rate of caesarean delivery of breech babies, risks of complications in future pregnancies may become apparent. The long-term risks of caesarean section for the mother, such as scar dehiscence in a subsequent pregnancy, increased risk of repeat caesarean section, placenta accreta, massive haemorrhage and potential hysterectomy need to be taken into account when considering the risks and benefits of planned caesarean delivery (Marshall NE, 2011; Landon MB, 2004).

7. Preterm Breech

There is no definitive evidence to recommend caesarean section versus vaginal delivery for delivery of preterm breech babies. Decisions regarding appropriate mode of delivery should be made on an individual case-by-case basis.

The optimal mode of delivery of a preterm breech infant is controversial and despite concentrated research efforts the evidence is incomplete. At least one randomised controlled trial to determine the most beneficial mode of delivery in preterm breech presenting babies, has been attempted and abandoned due to insufficient enrolment (Penn ZJ, 1996). Retrospective cohort studies have suggested an increased risk of neonatal mortality in vaginal breech deliveries when compared to cesarean delivery (Reddy Um, 2012; Grravenhorst JB, 1993). This, however, has been disputed by subsequent publications (Kayem G, 2008). Retrospective national population based studies have found no evidence that caesarean section is protective for preterm neonates, especially babies with a birthweight less than 1500g (Malloy MH, 1991). The same author published further evidence that, for intermediate or late low-risk preterm neonates (32 to

36 weeks), primary caesarean section may in fact increase risk of neonatal mortality and morbidity, such as pulmonary hypoplasia, necrotising enterocolitis or sepsis (Malloy MH, 2009).

Cochrane review of vaginal versus caesarean delivery for women with a preterm breech infant who present in labour found only four studies suitable for inclusion in an analysis (Penn ZJ, 1996; Viegas OAC, 1985; Wallace RL, 1984, Zlatnik FJ, 1993). These studies combined had 116 women and the analysis concluded that there is not enough evidence to evaluate the use of a policy of planned immediate caesarean delivery for preterm babies (Alfirevic Z, 2013). Recruitment for any potential randomised trial will prove difficult. Due to a lack of solid evidence regarding optimal mode of delivery, each decision should be individualised and made together with the woman.

8. Delivery of a breech presenting second twin

Routine caesarean section for a breech-presenting second twin is not evidence-based. A senior obstetrician should be present for the vaginal delivery of a non-vertex second twin. The second twin is non-vertex in about 40% of cases, however, the presentation of the second twin at delivery is not always predictable and as many as 20% of vertex presenting second twins will change presentation spontaneously after the first twin is born (Houlihan C, 1996).

It has been demonstrated on retrospective analysis that rates of vaginal delivery in non-vertex second twins are as high, if not higher, than that in those with a vertex presentation (Easter SR, 2016). Differences in second-twin outcomes among those who delivered vaginally, according to presentation, have also not been shown to be different (Easter SR, 2016; Hehir MP, 2015; Caukwell S, 2002; Laros RK Jr, 1988). A randomised trial of caesarean versus vaginal deliveries where the second twin's presentation was nonvertex showed no difference in 5-minute Apgar scores or in any other indices in neonatal morbidity between the two groups although the study included only 60 twins (Rabinovici J, 1987).

The skills necessary for the delivery of a non-vertex second twin have been shown to be in decline in recent decades (Jonsdottir F, 2015). In order for favorable outcomes to be achieved at vaginal delivery of breech second twins standards in areas such as fetal monitoring, regional anesthesia, immediate availability of an operating room for emergent caesarean delivery, and attendance of a senior obstetrician skilled in the requisite manoeuvers needed for the delivery of a non-vertex or unengaged second twin must be maintained (D'Alton ME, 2010).

9. Prevention of breech presentation

External Cephalic Version (ECV) is a safe procedure, which can decrease the incidence of breech presentation at term. Obstetric trainees should be capable of counseling about and performing an ECV.

ECV can decrease the incidence of breech presentation at term and rates of caesarean delivery among those who have an ECV are lower than those who do not attempt the procedure (Mahomed K, 1991). Both the RCOG and ACOG endorse the use of ECV as an option to decrease the caesarean delivery rate associated with breech presentation (Obstetrics & Gynaecology Practice Bulletin 161, 2016; RCOG Green Top Guideline 20a).

ECV is safe and is rarely associated with complications (Grootscholten K, 2008). Case reports, however, do exist of complications such as placental abruption, uterine rupture and feto-maternal haemorrhage. Randomised controlled trials have reported no evidence of an increase in neonatal morbidity and mortality but are underpowered for these rare outcomes (Hutton EK, 2015). Systematic reviews report a very low complication rate (Collaris RJ, 2004; Nassar N, 2006) but are subject to the limitations of reporting bias. Large consecutive series suggest a 0.5% immediate emergency caesarean section rate and no excess perinatal morbidity and perinatal mortality (Impey L, 1999; Ben-Arie A, 1995). ECV success rates have been shown to be dependent of the obstetrician's skill level (Bogner G, 2012). Published rates of practice in Ireland have been low (Higgins M, 2006). Hospitals should encourage the use of ECV. Obstetric

trainees should receive teaching and practical experience in order to become capable of performing of the procedure.

10. Training in the management of breech presentation

Vaginal breech delivery is an inevitable part of obstetric practice. A woman who presents in the second stage of labour with a breech presentation should not inevitably prompt a crash caesarean delivery.

Deskilling of practicing obstetricians due to the infrequency with which vaginal breech delivery is performed is a concern. Obstetric trainees should receive simulation and practical training in vaginal breech delivery.

Vaginal breech delivery will be a persistent and inevitable part of obstetric practice in the future regardless of attitudes to caesarean delivery. Patients with a breech presentation who present late in the first or in the second stage of labour, particularly those with previous vaginal deliveries, should not prompt an emergency category 1 caesarean delivery. Emergency cesarean section in the second stage of labour is associated with significant morbidity (Alexander JM, 2007; Asıcıoglu O, 2014; McDonnell S, 2015) and may place both mother and fetus at more risk than a vaginal breech delivery, particularly if the labour is progressing quickly and fetal heart monitoring is reassuring. Any decision to perform a caesarean delivery when a vaginal delivery may be imminent should be made with consultant input.

There has been concern regarding the deskilling of practicing obstetricians at vaginal breech delivery due to the infrequency with which the procedure is performed (Turner and Maguire, 2015; Hehir MP, 2015). Published work on obstetrician's attitudes suggest that, among older and more experienced clinicians, there is still an appetite to perform vaginal breech deliveries. But this attitude is less fervent among younger practitioners (Devarajan K, 2011). Task lists outlining the pertinent skills involved in performing a safe and successful breech delivery have been developed (Secter MB, 2015) and should form part of simulation training which can take place on models or during elective caesarean

delivery for breech. Obstetric trainees should receive training in the management of a vaginal breech delivery and a prerequisite number of vaginal breeches should be recorded in their training log-book.

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12. Implementation Strategy

- Dissemination of guideline to all members of the Institute and to all maternity units.
- Dissemination to the Directorate of the Acute Hospitals for dissemination through line management in all maternity hospitals.
- Implementation through HSE Obstetrics and Gynaecology Programme local implementation boards.
- Dissemination to other interested parties and professional bodies.

13. Qualifying Statement

These guidelines have been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. Clinical material offered in this guideline does not replace or remove clinical judgment or the professional care and duty necessary for each pregnant woman. Clinical care carried out in accordance with this guideline should be provided within the context of locally available resources and expertise.
This guideline does not address all elements of standard practice and assumes that individual clinicians are responsible for:

- Discussing care with women in an environment that is appropriate and which enables respectful confidential discussion.
- Advising women of their choices and ensure informed consent is obtained.
- Meeting all legislative requirements and maintaining standards of professional conduct.
- Applying standard precautions and additional precautions, as necessary, when delivering care.
- Documenting all care in accordance with local and mandatory requirements.

14. Appendix

Vaginal breech delivery videos:

https://m.youtube.com/watch?ipadtype=3&sts=17149&v=G5c4GAxmEgE&oref=https%3A%2F%2Fm.youtube.com%2Fwatch%3Fv%3DG5c4GAxmEgE%26itct%3DCC8QpDAiEwjw%252Bv%252Beg4HRAhWGsFUKHbKdCL8yCWM0LWZlZWQtdVoYVUNmWWkzTU42LVNJektsVE5pb1k4azRB&has_verified=1&layout=tablet&client=mv-google

Breech extraction:

https://vimeo.com/152723400

External Cephalic Version:

https://www.youtube.com/watch?v=fKaNZfUno50&feature=share&list=PL68EE6D503647EA2F

Vaginal breech birth:

https://m.youtube.com/watch?v=EPklRwlMV1Y

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