Breech presentation (Antenatal, External Cephalic Version and Intrapartum Management)

NHS University Hospitals of Leicester NHS Trust

Trust ref: C11/2007

1. Introduction and Who Guideline applies to

This guideline is intended for use the use of obstetric, midwifery, anaesthetic, pharmacy and ultrasonography staff involved in the antenatal care of women with a breech presentation.

The recommendations contained in the guideline for the management of intrapartum breech presentation is intended for use at the Leicester Royal Infirmary and Leicester General Hospital, St Mary's Birth Centre, the alongside Birth Centres and Home Birth settings.

Related UHL documents:

- Consent to Examination or Treatment UHL Policy A16/2002
- Fetal Monitoring in Labour UHL Obstetric Guideline C23/2021
- Community Midwifery Home Birth Team UHL Obstetric Guideline C31/2017

Key points & What's new?

- Augmentation of labour should be a Consultant decision
- Induction of labour is not recommended
- CTG in labour recommended
- New section providing guidance when breech is diagnosed at a homebirth or SMBC
- Breech delivery assessment, preparation, basic principles, manoeuvres, management of head entrapment and post procedure tasks added

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2. Antenatal assessment and management

2.1 Breech presentation on assessment:

- Presentation of the fetus should be recorded on each antenatal assessment from 28 weeks gestation onwards.
- There is no benefit from presentation scan before 36 weeks gestation.
- If the fetus is found to be persistently presenting by the breech at the 36 week assessment, then the midwife or doctor should refer the woman immediately for an ultrasound scan. This can be requested via the breech clinic but if this isn't possible refer directly for presentation USS.
- There is no evidence that postural management alone promotes spontaneous version from breech.[4]
- The NHS doesn't currently fund complimentary therapies such as moxibustion to promote spontaneous version but women may wish to consider the use of moxibustion for breech presentation at 33–35 weeks of gestation, under the guidance of a trained practitioner.

2.2 Confirmed breech at 36 week USS assessment;

- When the presentation scan is performed and breech presentation is confirmed the following should be checked: placental site, liquor volume, and the nature of the breech presentation (extension / flexion of the fetal head).
- Fetal posture is dynamic. The diagnosis of a footling breech antenatally does not necessarily reflect the subsequent presentation in labour. With contractions, it may easily convert to a flexed breech. Similarly, the finding of an extended fetal neck on one antenatal ultrasound does not exclude vaginal delivery. However, persistent star-gazing would be concerning.
- Estimated fetal weights should be interpreted in light of the woman's size and past obstetric history.
- In the absence of contraindications, all women with a breech presentation at 36wks and above should be offered the option of external cephalic version (ECV) (see appendix 1- ECV).

2.3 Management of unsuccessful, contraindicated or declined ECV:

- Where external cephalic version is declined, contraindicated or unsuccessful then the woman and her partner should be counselled in an informed and unbiased manner regarding vaginal delivery and caesarean section

- Women should be informed that planned caesarean section leads to a small reduction in perinatal mortality compared with planned vaginal breech delivery. Any decision to perform a caesarean section needs to be balanced against the potential adverse consequences that may result from this.

- Women should be informed that the reduced risk is due to three factors: the avoidance of stillbirth after 39 weeks of gestation, the avoidance of intrapartum risks and the risks of vaginal breech birth, and that only the last is unique to a breech baby.

- If a couple opt for elective caesarean section, this should not be performed before 39 completed weeks of gestation[4]. This ensures minimal risk of respiratory dysfunction post- delivery and also allows for spontaneous version to occur.

- Women should be informed that when planning delivery for a breech baby, the risk of perinatal mortality is approximately 0.5/1000 with caesarean section after 39+0 weeks of gestation; and approximately 2.0/1000 with planned vaginal breech birth. This compares to approximately 1.0/1000 with planned cephalic birth[4].

    - In the Canadian trial of the management of breech presentation at term, an elective caesarean section reduced the risk of neonatal harm or death by two-thirds overall. Even when the Canadian Trial investigators attempted to optimise the conditions for attempted vaginal breech delivery, a two-fold increase in neonatal morbidity and mortality remained[1].

    - The PREMODA study followed much stricter case selection than the term breech trial and their findings where no significant difference for the combined outcome of fetal mortality and serious morbidity. Only a 5min Apgar score of <4 was significantly more in the planned vaginal group.[2]

    - Strict selection of appropriate pregnancies and skilled intrapartum care may help reduced some of the risks of a planned vaginal breech birth. Women also need to be aware that vaginal breech birth increases the risk of low Apgar scores but has shown no increased risk of long term morbidity.

    - The Term Breech Trial was flawed by case selection, bigger babies in the vaginal birth group, recruitment occurring in labour, clinician experience and misclassification of neonatal morbidity.

    - Vlemmix et al suggested that there was a shift towards elective caesarean section. However, 40% women attempted vaginal birth. To prevent one perinatal death, 338 caesarean sections would need to be done. The

relative safety of an elective caesarean should be weighed against the consequences of a scarred uterus in future pregnancies.

Women should be advised that a planned vaginal breech delivery is not advised if:

- Hyperextended neck on ultrasound.
- High estimated fetal weight (more than 3.8 kg).
- Low estimated weight (less than tenth centile).
- Footling presentation.
- Evidence of antenatal fetal compromise[4]

An ultrasound will be performed after admission by the obstetric specialist registrar prior to the caesarean section.

- The woman should be made aware of the reason for this scan and that if the fetus has turned to a cephalic presentation, there may no longer be an indication for a caesarean section. The clinician at booking should discuss and document the subsequent plans for delivery if this is the case.

2.4 Preterm breech 24 weeks – 36 weeks:

- 25% of preterm breech deliveries are iatrogenic and due to maternal or fetal complications. In women who need planned delivery due to maternal or fetal compromise, elective caesarean section is recommended in a viable fetus of breech presentation.

- The routine performance of a caesarean section for preterm breech should not be recommended. The decision about mode of delivery, of a spontaneous, preterm labour in breech presentation, should be made after clinical evaluation and discussion with the woman. The stage of labour, the type of breech, fetal wellbeing and the operator skill is key in this decision-making process.

- A Cochrane review comparing the effects of caesarean section versus vaginal breech delivery, found no significant difference in immediate outcomes and follow-up to childhood. However data was very limited[7]

2.5 Intrauterine death and breech presentation:

- Discuss with the registrar and consultant so an individualised care plan can be made taking into account the clinical history.

3. Intrapartum management of breech presentation

3.1 Breech presentation in labour:

- If a woman with a breech presentation presents on labour ward in inform the registrar and consultant on call.
- Site IV cannula and take blood for Full Blood Count and Group & Save.

3.2 Clinical Assessment:

- If no documented intrapartum management plan; one should be compiled by the registrar who has assessed the pelvis, after consultation with the consultant. This plan should include advice regarding the timing of amniotomy.
- VE should be performed as soon as spontaneous rupture of membranes (SRM) occurs to exclude cord prolapse.
- If there is SRM without contractions in a woman who has planned vaginal delivery, she should be reviewed by the consultant on the next labour ward round.
- Should a woman booked for an elective caesarean section be admitted in spontaneous labour, then the mode of delivery should be reassessed in light of the clinical information available and parental wishes. With the exception of precipitate delivery, any changes to the original delivery plan should be discussed with the consultant on call.

3.3 Consider appropriate pain relief[4]

- An epidural allows the woman to remain comfortable, particularly if manipulations or instrumental assistance is required. It also allows an emergency caesarean section to be performed with greater speed. [3]Therefore epidural analgesia is recommended, but there is no evidence that it is essential.

3.4 Fetal monitoring:

- Continuous fetal monitoring is recommended in labour
- Significance of meconium – it cannot be assumed that this is benign or "normal". Meconium is not usually passed until the active second stage. Before then, meconium should be given the same significance as in cephalic deliveries.

3.5 Augmentation:

- Augmentation of labour should be a CONSULTANT DECISION, should only be considered if infrequent contractions in the presence of epidural analgesia.

- Induction of labour not recommended. If women request induction of labour, this should be discussed at Consultant level and an individualised plan of care made.

3.6 Second Stage:

- Second stage of labour must be confirmed by vaginal examination.
- Position of woman: Delivery should be undertaken in a position that is accepting by the women and the person conducting the delivery. However recent evidence suggests using semi recumbent or all fours position. If there is difficulty with delivery or manoeuvres are required alternative positions may be considered. (Most obstetricians will require that the delivery be conducted in a dorsal position.)
- If the on-call specialist registrar does not have this level of experience, then the on-call consultant should be present[4]
- Allow for descent of the breech, the woman may involuntarily push but should not be actively encouraged until the breech is visible at the introitus[4]
- If delivery does not appear imminent after a maximum of one hour of pushing, consider caesarean section.
- Delivery from buttocks (intertrochanteric diameter) to head should be approximately 6 mins (delivery from umbilicus to head typically 3mins)[4]
- Evaluate the need for an episiotomy to facilitate delivery of the head. This should be done when the fetal buttocks are distending the perineum and the anus becomes visible.
- A paediatrician must be available at delivery and the anaesthetist must be present on labour ward.
- Umbilical artery and vein pH should be performed on all breech deliveries.
- Prior to discharge a hip scan should be arranged for the baby.

3.7 Undiagnosed breech in labour:

- Although much emphasis is placed on adequate case selection prior to labour, assessment of the undiagnosed breech in labour by experienced medical staff can allow safe vaginal delivery[5]
- Incidence of presentation of breech babies being undiagnosed in labour is 25%[4]
- Greater chance of vaginal delivery than breech diagnosed before labour.

- When deciding on mode of delivery, the following should be considered:
  - Parity
  - Gestation
  - Past obstetric history
  - Absence of footling presentation (can only be determined by vaginal examination)
  - Clinical estimate of fetal weight
  - Wishes of the woman and her partner

3.8 If diagnosed at home or SMBC:

- Immediately call an ambulance via 999 with a view to transferring the woman to LGH or LRI unless delivery is imminent (Scoop and run).

- Avoid rupturing the membranes but if ruptured a vaginal examination should be performed to assess:
  - Cervical dilatation
  - Position and type of breech presentation. Exclude Cord prolapse
  - Determine station of the breech

- Must be accompanied by midwife with delivery equipment in case emergency delivery of the breech occurs enroute

- Alert appropriate staff in the receiving unit. This would be the delivery suite co-ordinator who in turn would inform the obstetric, anaesthetic and neonatal team.

- Record all observations and actions taken, in the labour notes with the copy of ambulance record

- In the event of spontaneous delivery, the basic principle is to avoid unnecessary intervention. "Hands off the breech"

- Midwife should discourage maternal expulsive efforts

3.9 Vaginal breech delivery (MEOWS, ALSO):

Assessment:

- Exclude contraindications for vaginal breech delivery
- Fetal wellbeing (CTG)
- Uterine contractions
- Type of breech
- Dilatation of cervix
- Descent during contractions

Preparation:

- Communication
- Equipment (Standard delivery pack with forceps and operative vaginal delivery trolley)
- Counselling and support

- IV access
- Bladder care if necessary
- Appointed scribe in the room for clear documentation
- **NOTE: Most babies with breech presentation delivered spontaneously from bi-trochanteric diameter distending of introitus to the delivery of head within 7 minutes. Hands off approach wherever breech is anticipated to be delivered spontaneously**

3.10 Basic principles of Assisted vaginal breech delivery:

- Women are encouraged to deliver in whatever position they want to adapt (upright or lithotomy) but should be made aware that if manoeuvres are required, most obstetricians would prefer lithotomy position.

- Obstetricians experienced and confident in the application of these manoeuvres will assess the suitability of maternal positions other than lithotomy on their ability to effectively assist the delivery. This will be decided on an individual basis.

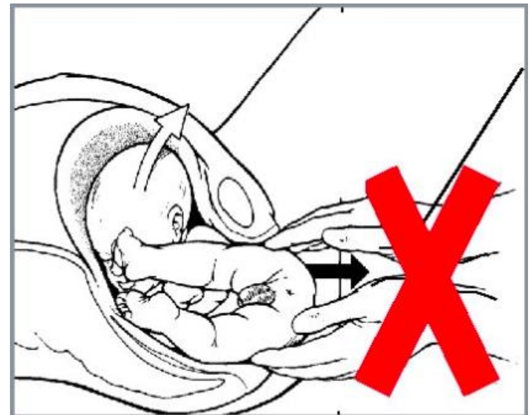
- Ensure adequate uterine activity and good maternal effort

- Delay active pushing until the breech has descended to the pelvic floor or urge to push.

- Keep the sacrum anterior

- Avoid handling the umbilical cord

- Avoid traction at all times to avoid hyperextension of neck.



- Allow the baby to hang by its own body weight to facilitate descent and flexion of the head, until the nape of the neck appears under the pubic arch

3.11 Types of breech presentation.

Complete (flexed or full breech)
Incidence: 10% of term and preterm breeches (Frye, 2004)

The baby sits cross-legged with flexed knees and hips: feet are tucked up against its bottom

This position is most common in multigravidae

Extended (incomplete or frank breech)
Incidence: 45–50% (AAFP, 2004) or 60–70% (Frye, 2004) of term breeches

The baby's legs are flexed at the hip but with straight knees: the legs lie alongside the trunk

This position is most common in primigravidae near term as knee flexion is restricted by firm uterine and abdominal muscles

Footling
Incidence: 20–25% of preterm breeches and 10–20% (Frye, 2004) or 35–45% (AAFP, 2004) of term breeches

One or both knees and/or hips are extended with one or more feet below the buttocks

Knee/kneeling
Incidence: <5% of term breeches (Frye, 2004)

One or both hips are extended and the knees are flexed: the knees are at the height of or below the buttocks

This is the rarest presentation

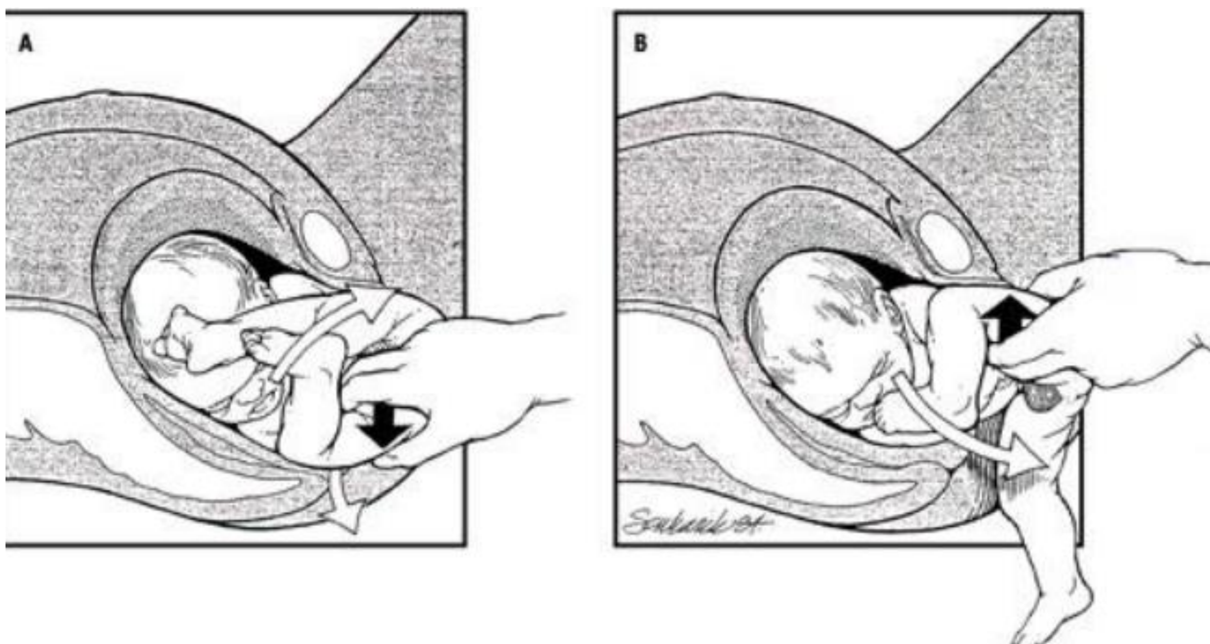
Others
Occasionally a presentation may be compound, e.g. one leg footling, the other extended

3.12 Assisted breech delivery procedures

CAUTION: DIFFERENT MANOUEVRES LISTED BELOW ARE NOT FOR UPRIGHT BREECH DELIVERY

DELIVERY OF BUTTOCKS AND LEGS:

- Delay active pushing until breech is distending the introitus
.
- Start timer when bi-trochanteric diameter of breech is at introitus
- Allow descent of breech without traction and allow to rotate spontaneously to sacro-anterior position.
- Assess need for episiotomy at the time of crowning
- If there is good progress **HANDS OFF** until manoeuvres needed.
- If legs do not come out spontaneously, do **PINARD Manoeuvre** by applying pressure with two fingers in the popliteal fossa to flex the legs at the knee joint



DELIVERY OF ARMS AND SHOULDERS:

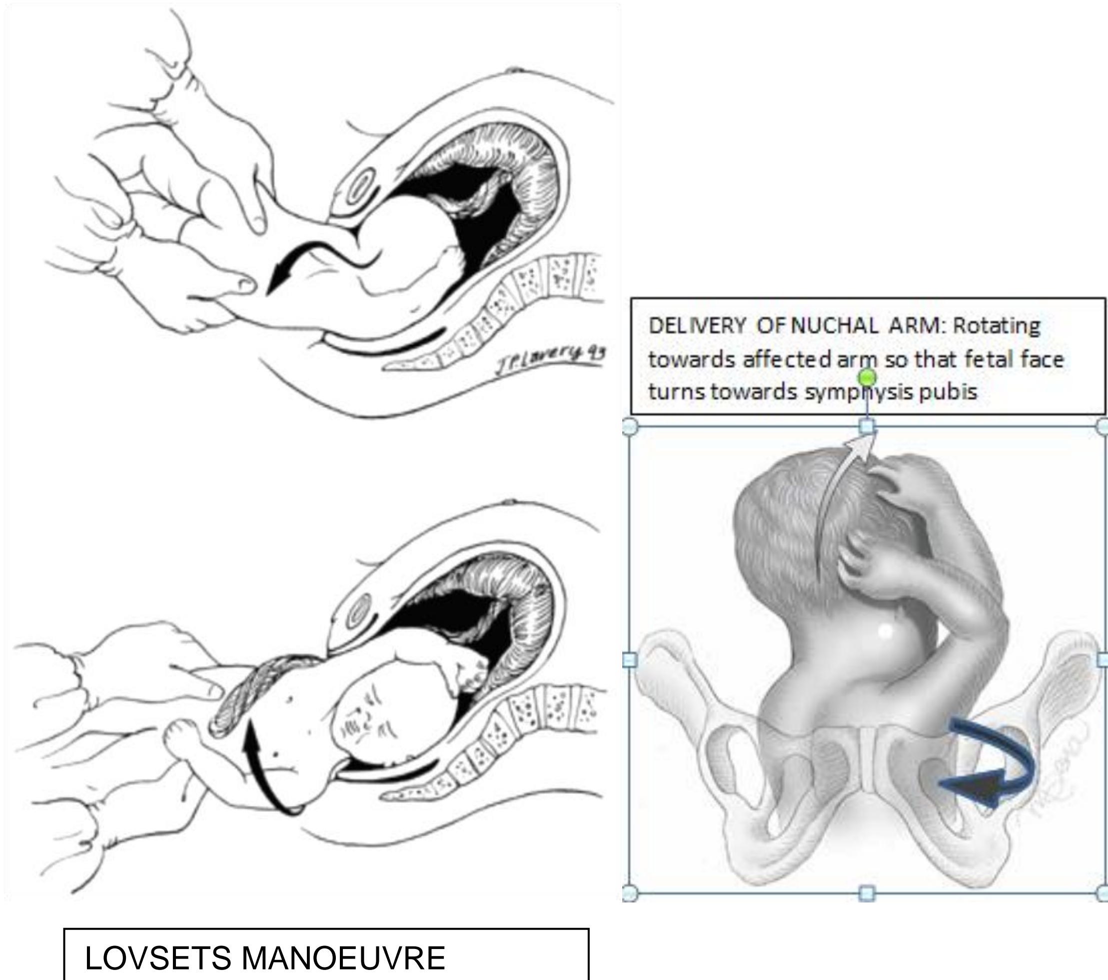
a. Flexed arms across chest:

1. Lift the buttocks towards the mother's abdomen and delivery of 2nd arm.
2. If not delivered spontaneously, place one or two fingers in the elbow splinting the humerus between two fingers to bring it down.

b. Extended or nuchal arms:

LOVSET'S MANOEUVER:

- Hold the baby firmly but gently around the pelvis
- Keep the baby's BACK ANTERIOR.
- Rotate the body to 90° and deliver the shoulder that is under symphysis pubis maintaining sacrum anterior to symphysis pubis
- Flex the elbow and deliver the arm across the body.
- Rotate the baby back through 180° KEEPING THE BACK ANTERIOR
- The second arm can be delivered in the same way
- If there is any resistance in performing Lovset's manoeuvre **STOP**
- If Lovset's cannot be done deliver the posterior arm directly by passing the fingers behind the posterior arm and holding the arm in between the fingers while holding and lifting up the newborn by ankles keeping baby's chest towards woman's inner leg.
- For nuchal arm behind the neck, rotate towards the affected arm so that fetal face turns towards maternal symphysis pubis.



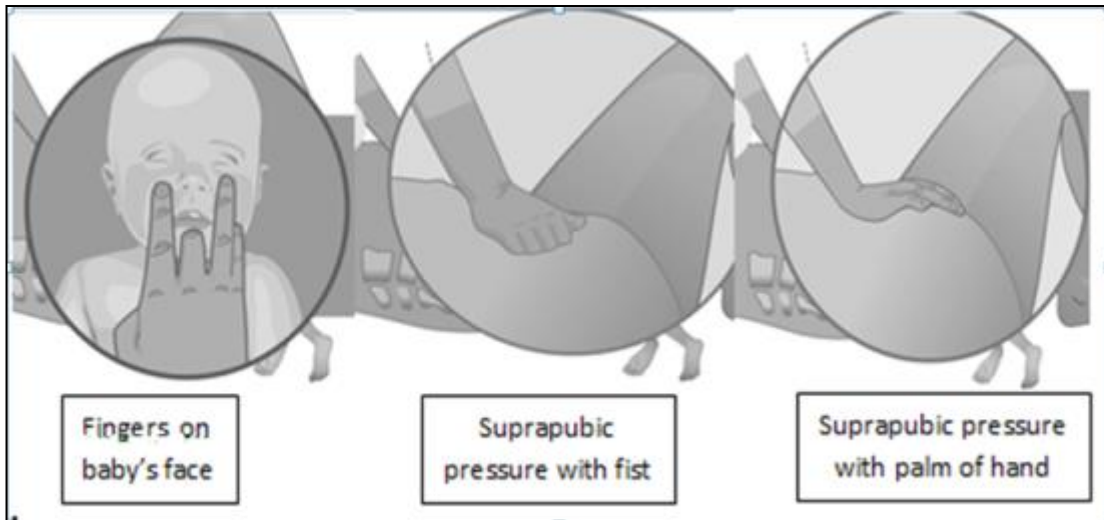
LOVSETS MANOEUVRE

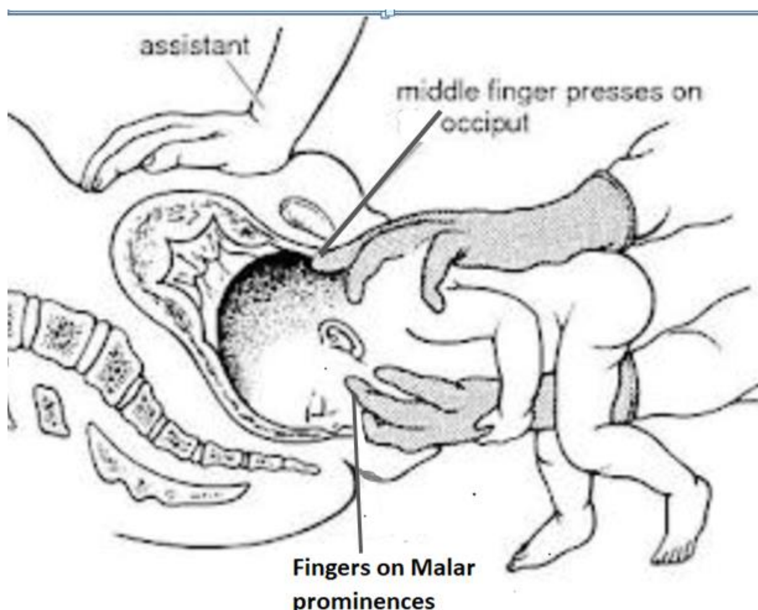
DELIVERY OF THE HEAD

CAUTION: Slow controlled delivery of head to avoid neonatal cerebral tentorial tear.
Only delivery of head should be considered when the when the nape of neck is visible

MAURICEAU-SMELLIE-VIET (MSV) manoeuvre:

- Encourages flexion of the fetal head. The fetus is placed in a horse-riding position on the inner aspect of the non-dominant forearm. Two fingers of that hand should be placed over the malar prominences.
- The dominant hand should be placed over the fetal back with middle finger on the fetal occiput to promote flexion and the index and ring fingers on each of the fetal shoulders to promote traction.
- Both hands are used to promote flexion of the head. The fetal body is raised upward in an arc completing delivery. An assistant may apply suprapubic pressure to further promote flexion (either the heel of hand may be used or by making fist). The whole of the fetus is delivered in a controlled manner with maternal contraction.

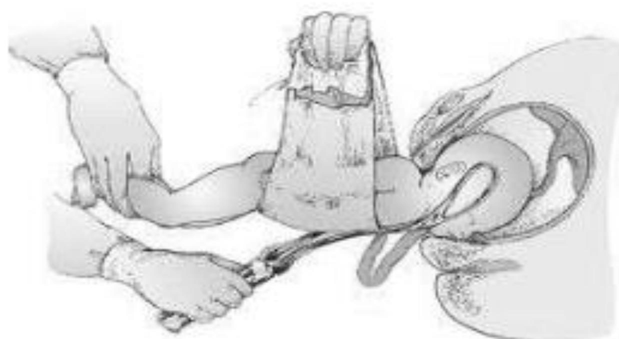


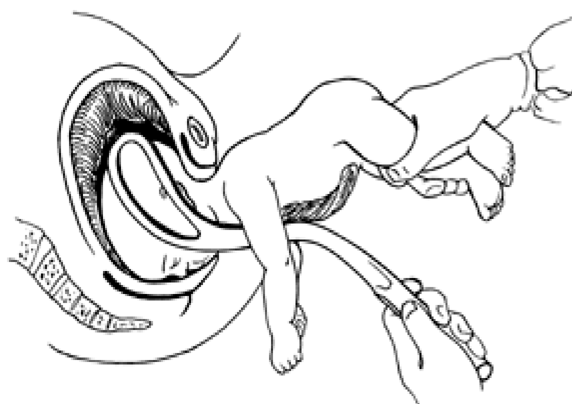


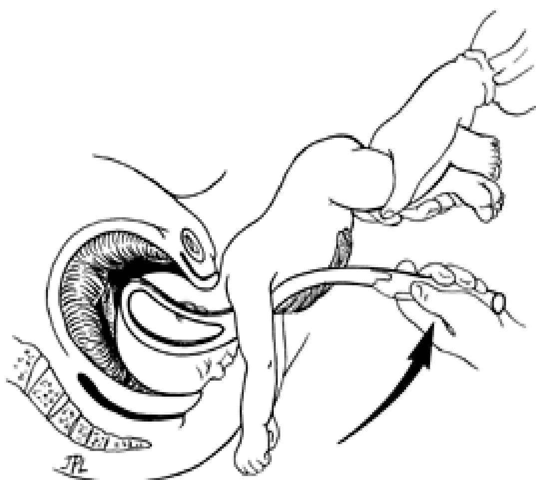
Mauriceau-Smellie-Veit manouvre

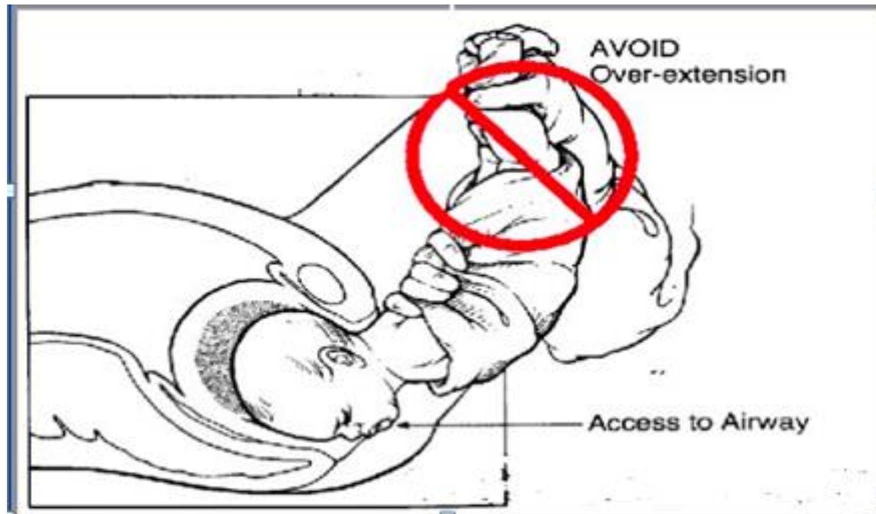
Application of forceps:

- Forceps should be considered if the head has not delivered within 2–3 minutes of attempting the MSV manoeuvre.
- An assistant should gently lift and support the baby without undue traction. The baby can be wrapped in a towel to keep it warm.
- Any type of midcavity obstetric forceps can be used. Wrigley's obstetric forceps should not be used for vaginal breech delivery.
- The forceps should be applied in the same manner as is used for cephalic presentation. Delivery of the fetal head should be controlled and slow.
- Burn Marshall Method: may be used ONLY with **EXTREME CAUTION** to avoid overextension of baby's neck (because of risk of cervical spinal injury).









Management of fetal head entrapment:

- **Call for help** – inform anaesthetist, consultant obstetrician, paediatric staff, senior midwife and maternity operating theatre staff
- **Consider transfer to theatre**
- Administer **tocolysis**; consider intravenous/sublingual glyceryl trinitrate (GTN) or Terbutaline.
- Adequate analgesia/anaesthesia.
- **Consider second attempt of the following manoeuvres**
- Apply **suprapubic pressure** as per shoulder dystocia
- **MSV manoeuvre** should be reattempted in conjunction with suprapubic pressure
- Attempt forceps delivery

Extreme Procedures:

Cervical incisions (Duhrssen's incisions):
- **Technique:** made at 2 o'clock and 10 o'clock between the pairs of ring forceps, to avoid lateral extension of the incision involving the descending cervical vessels. An additional incision at 6 o'clock position is rarely needed.
- **Difficulties**: adequate analgesia and exposure with risk of haemorrhage and extension upwards within the broad ligament causing broad ligament haematoma.

Symphysiotomy: rarely performed in extreme situations
Caesarean section (Zavanelli manoeuver)

3.13 Post Procedure Tasks

Anticipate, Evaluate and manage:

- PPH
- Genital tract injury
- Cord blood for PH, Base excess and lactate
- Check baby for Birth injuries, possible cause of breech, congenital hip dysplasia (hip scan) and neurological disability.

Explain and document:

- Debriefing and support of parents and staff
- Accurate documentation of manoeuvres used with timings (including which arm/leg is manoeuvred).
- Incident Reporting/ Duty of Candour
- Inform parents to be alert for early signs of neurological disability.

4. Education and Training:

All staff who work within the maternity setting will attend an annual (12 months) skills drills day incorporating theory and practice in the management of vaginal breech birth as a minimum (MOT).

5.Supporting References:

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6. Key Words

Breech, ECV, Lovset's manoeuver, Pinard manoeuvre, Mauriceau-smellie-viet (msv) manoeuvre

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The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.
As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

CONTACT AND REVIEW DETAILS			
Guideline Lead (Name and Title) N Archer, Consultant Obstetrician			**Executive Lead** Chief Medical Officer
Details of Changes made during review:			
Date	**Issue Number**	**Reviewed By**	**Description Of Changes (If Any)**
January 2022		Bushra Shaheen (Clinical trust Fellow OBGYN), N. Archer (Consultant Obstetrician), U.Huntings (Midwife)	General update, vaginal Breech delivery added with manoeuvres. Unexpected diagnosis of breech in labour at community level added. CTG in labour recommended. Removed statement saying not for use in the low risk birth settings as there needs to be instruction on referral and emergency procedures to follow. Added reference to complimentary therapies not offered by NHS for version. Augmentation should be Consultant decision Added individualised care plan if women choose IOL. Added Terbutaline as second choice tocolysis in the event of head entrapment

Appendix 1:

External Cephalic Version of Breech Presentation of Term

In the absence of contraindications, ECV should be offered to all women with a breech presentation at term

- Breech presentation at term is associated with an increased risk to both the fetus and the mother compared to a cephalic presentation. The aim of external cephalic version is to reduce the number of fetuses presenting as a breech at term, and therefore to reduce the number of operative deliveries. The benefits are maternal (reduced operative morbidity and greater informed choice), and to the Trust (reduced costs from caesarean sections)
- Women with a breech baby should be informed that attempting ECV lowers their chances of having a caesarean section by 38%.[4]
- The success rate covered nationally is 50%, 40% in primiparas and as high as 60% in multiparas[4]

<u>Consider ECV when:</u>

- Singleton pregnancy
- Breech presentation
- ≥36wks in nulliparous
- 37wks in multiparous

<u>Exclude (Contraindications)</u>

- Contraindication to vaginal delivery
- Multiple pregnancy(except for delivery of second twin)
- Antepartum haemorrhage within the last 7 days
- Placenta praevia
- Abnormal cardiotocography/dopplers
- Major uterine anomaly

<u>Circumstances necessitating further consideration, and discussion with the Consultant</u>

- Severe fetal abnormality
- Small for gestational age fetus with normal Doppler parameters (ECV would not be considered if dopplers are abnormal)
- Significant oligo or polyhydramnios
- Uterine malformation
- Previous caesarean section (women with 1 previous caesarean birth who would be suitable for VBAC should be offered ECV)

- **The woman should give written consent for the procedure (please refer to UHL Consent Policy)** [15]

Maternal and fetal wellbeing should be assessed immediately before and after the ECV

- Baseline maternal observations should be undertaken
- A CTG using Dawes Redman criteria should be undertaken to confirm a normal fetal heart rate pattern before and after the ECV, regardless of success or failure of the procedure. Where a CTG using Dawes Redman criteria is not available a CTG should be done for 30 mins.
- Any CTG abnormality must be reviewed by an obstetric registrar or consultant.
- The risk of an emergency caesarean section immediately following the procedure of ECV is 0.3-0.5% with no excessive perinatal morbidity or mortality. [4]

Other monitoring

- Observation for uterine irritability, contractions or vaginal bleeding.
- Kleihauer test should be taken 15 minutes after the procedure for all Rhesus negative women.
- Ensure all women who are Rhesus negative receive Anti-D.
- The woman can be discharged home once stable. There is no support for routine practice of immediate induction of labour.
- If ECV is unsuccessful, a plan for subsequent care should be made on an individual basis. Women who opt for caesarean section after unsuccessful ECV should be consented and booked for caesarean section.

ECV should be carried out in suitably designated room

Designated rooms should have equipment for monitoring and facilities for immediate delivery are close. A room equipped with an ultrasound scanner, cardiotocograph and resuscitation equipment should be reserved for each woman undergoing the procedure.

A meta-analysis by Grootscholten et al looked out the risk of complications with external cephalic version. They pooled the results of 84 studies which involved 12,955 women[3]. Complications: Overall complication rate 6.1%

- Vaginal bleeding 0.34%
- Transient CTG abnormalities 4.7%
- Cord prolapse 0.18%
- Ruptured membranes 0.2%
- Fetomaternal haemorrhage 0.9%

Routinely, women are referred to the Breech clinic and ECV's are performed there as the complication rate is low and there is easy recourse for caesarean birth if required. The standard pre-operative preparations (like fasting, IV access) for caesarean section are not recommended.

- See Appendix 2 for emergency pathway.

RCOG suggest that the use of tocolysis with beta-sympathomimetics may be offered to women undergoing ECV as it has been shown to increase the success rate.

- Tocolysis has been to improve the success rate of external cephalic version and to reduce the complication rate associated with the procedure[4].
- Terbutaline is the drug of choice for tocolysis. It can be used routinely or where an initial attempt at ECV without tocolysis has failed.
- The use of tocolysis should be considered where an initial attempt at ECV without tocolysis has failed[4]
- Women should be advised of the adverse effects of tocolysis with beta-2 agonist. These include: palpitation, tachycardia, allergic reaction, hypotension, fine tremor, nervous tension, headache, arrhythmias, myocardial infarction and peripheral dilatation.

RECOMMENDED TOCOLYTIC REGIME:

- Terbutaline 250 micrograms subcutaneously.[4]

There is not enough data or evidence to support the routine use of regional analgesia in all women undergoing ECV.

Babies from women with a successful ECV require a postnatal hip scan.

- Babies who have been in breech presentation >/= 36 weeks are at increased risk of congenital dislocation of the hip.
- Therefore as well as for any baby born at term breech presentation babies born after a successful ECV need to have a hip ultrasound.
- This should be documented in the notes by the person who performed the ECV and a Paediatric alert sent.

Stabilising Induction

- There is limited data on stabilising induction; however ECV followed by a stabilising induction is a reasonable course of action in unstable lie where delivery is warranted.
- The patient should be made aware of the risk of cord prolapse, transverse lie in labour and fetal heart rate abnormalities.

Appendix 2: Pathway for emergency crash bleep when RCV's are performed in clinic

Pathway for Emeregncy Crash Bleep when ECV's are done in clinic at the LRI