Breech Presentation and Delivery

Incidence
- 3% to 4% of all term pregnancies
- 10,500 – 14,000 Breech deliveries occur in Canada every year
- Increases with decreasing gestational age
  - 24% at 28 wks

Types of Breech
- Complete
- Incomplete or Footling
- Frank

Morbidity and Mortality
- Increased frequency of perinatal mortality and morbidity due to:
  - prematurity
  - congenital anomalies (6.3% vs. 2.4%)
  - birth trauma/asphyxia
  - cord prolapse
  - cerebral palsy

Etiology
- Factors that favour breech presentation:
  - prematurity
  - oligohydramnios
  - uterine anomalies
  - low lying or placenta previa
  - fetal anomalies
- Previous breech delivery
- If pregnant woman or father of fetus were breech themselves (> 2x increases likelihood)

Identification of Non-Cephalic Presentation
- Screen with Leopold’s manoeuvre and/or vaginal exam in the third trimester
- Confirm by 36 wks if uncertain by Leopold’s
  - ultrasound usually
  - abdominal X-ray if U/S unavailable
Term Breech Management Options are
1. External Cephalic (ECV)
2. CS
3. Assisted Vaginal Breech Delivery

External Cephalic Version (ECV) – Definition
- A procedure whereby a fetus is turned in utero from a non-cephalic to a cephalic presentation by manipulation of the maternal abdomen
- Meta-analysis comparing ECV at term to no attempt at ECV showed a significant reduction in:
  - non-cephalic births
  - CS
- No significant effect on perinatal mortality or other measures of perinatal outcome

External Cephalic Version (ECV) – Timing
- Not before 34 weeks
  - likely unnecessary as most turn spontaneously by term
  - if emergency delivery indicated, ↑NN morbidity
- 34-36 weeks vs > 37 weeks
  - fewer fetuses remain breech at delivery (51% vs 59%)
  - 4% ↑ in delivery by CS
  - 2% ↑ in PTB < 37 weeks
  - no difference in NN morbidity
  - no perinatal deaths related to ECV
  - waiting allows spontaneous version to occur more often (25% vs 14%)

Prerequisites for ECV
- Singleton pregnancy
- > 34 wks gestation
- No contraindication to labour
- Fetal well-being established prior to procedure
- Amniotic fluid volume adequate
- Ultrasound available
- Position of fetus confirmed
- Facilities and personnel available for timely C/S

ECV Contraindications – Absolute
- Any contraindications to labour
- APH
- Some major anomalies
- Multiple gestation (except delivery of second twin)
- Rupture membranes
ECV Contraindications – Relative
- Oligohydramnios
- Hyperextension of the fetal head
- ≥ 2 previous CS
- Morbid obesity
- Active labour
- Uterine malformation
- Fetal anomaly

Risks of ECV
- Abruption (0.4% – 1%)
- Rupture of membranes with possible cord prolapse
- Labour
- FHR abnormalities; transient bradycardia (1.1% – 47%)
- Alloimmunization/fetomaternal hemorrhage (0%-5%)

ECV Procedure
- Informed consent
- Facility must have capability of performing immediate CS
- U/S to confirm position and to monitor FHR throughout procedure
- May lubricate abdomen with gel or powder

ECV – Possible Helpful Tools
- Tocolytics
  – evidence limited
- Epidural or spinal analgesia
  – insufficient trials but some evidence to show increased success (60% vs 35%)
- Moxibustion
  – conflicting evidence – some small trials support its use
- Postural management (knee-chest)
  – not shown to be effective
Caesarean Section

Planned CS vs planned vaginal birth for breech presentation at term:
- Lower risk of perinatal and neonatal mortality and neonatal morbidity with planned LSCS vs planned vaginal birth
- e.g. 70% reduction in perinatal/neonatal death (RR 0.29, 95% CI 0.10 – 0.86)

Planned CS for Breech – In Developed Countries

<table>
<thead>
<tr>
<th></th>
<th>Planned LSCS</th>
<th>Planned vaginal birth</th>
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</thead>
<tbody>
<tr>
<td>Perinatal or neonatal death (excludes fetal anomalies)</td>
<td>0/641</td>
<td>4/694 (0.6%)</td>
</tr>
<tr>
<td>Serious short term neonatal morbidity</td>
<td>2/514 (0.4%)</td>
<td>29/511 (5.7%)</td>
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Term Breech Trial Revisited

- Did not address the breech with anomalies or growth restrictions
- Among survivors, there was no significant differences in outcomes at age 2
- The reduction in perinatal mortality was found mostly in developing countries with a baseline perinatal mortality > 20/1000
- No significant difference in perinatal or neonatal mortality in developed countries with low baseline perinatal mortality rates

Term Breech Trial Revisited

- Inadequate case selection and intrapartum management
- Different skill levels amongst caregivers
- Short term morbidity used as a surrogate marker for long-term neurological impairment

PREMODA Study

- 4x larger than Term Breech Trial
- No difference in
  - perinatal mortality (0.08% vs 0.15%)
  - serious NN morbidity (1.6% vs 1.45%)
- 5 min Apgar < 4 higher in TOL vs C/S group (0.16% vs 0.02%)

Vaginal Breech Delivery – SOGC 2009

- Vaginal breech birth can be associated with increased perinatal mortality and short term NN morbidity
  - short term NN morbidity nearly always resolves
  - increase in perinatal mortality is small
- Careful case selection and labour management may achieve a level of safety similar to elective CS
- Long-term neurological outcomes do not differ by planned mode of delivery
Vaginal Breech Delivery – Contraindications

- Cord presentation
- Macrosomia
- Presentation other than frank or complete breech with flexed or neutral head
- Clinically inadequate maternal pelvis
- Fetal anomaly incompatible with vaginal delivery
- Fetal growth restriction

Labour Management

- Offered if EFW 2500-4000g
  - clinical pelvic examination
  - pre or early labour ultrasound
  - continuous EFM
  - immediate vaginal exam with ROM
    - delay AROM
    - oxytocin
    - induction not recommended

Management of Second Stage

- Up to 90 minutes passive second stage
- CS after 60 minutes of active pushing if delivery not imminent
- Active second stage to take place in or near OR
- Health care provider for a planned vaginal breech delivery needs to possess the requisite skill and experience
- NRP trained personnel in attendance for delivery

Risks/Complications with Vaginal Breech Delivery

- Low 1 minute Apgar scores
- Entrapment of the fetal head
- Nuchal arms (0%-5%)
- Cervical spine injury with hyperextended head
- Cord prolapse (5%)
Breech Presentation and Delivery

Spontaneous Expulsion
- Spontaneous expulsion to the umbilicus
- The sacrum should be gently guided anteriorly
- Singleton breech extraction is contraindicated
- CS is indicated for failure of descent or expulsion

Hurry up & Wait!
- DON'T PULL!
- Traction deflexes the fetal head
- May cause nuchal arm

Deliver Legs by Pinard's Manoeuvre; insert 2 fingers along one leg to the knee, then pushed away from midline (abducted) while flexing at hip

Delivery of Arms
- Good maternal pushing
- Deliver when scapulae visible
- Rotate to shoulder anterior
- Sweep humerus across the chest and deliver
- Rotate to other shoulder anterior and sweep second arm to deliver

Avoid Over-Extension

Delivery of the Head
- Mauriceau Manoeuvre
- Flexion maintained with suprapubic pressure
- Pressure on maxilla
**Delivery of the Head with Forceps**
- Assistant supporting baby
- Direct pelvic application

**Care After Breech Delivery**
- Active third stage management
- Cord blood gas analysis
- Examination for maternal trauma
- Examination for neonatal trauma
  - examine the hips with care
  - repeat the examination prior to discharge
- Review birth with the family
- DOCUMENTATION

**Conclusion**
- Consider ECV
- Vaginal breech delivery acceptable with appropriate patient selection, consent and management
- CS if criteria are not met