Obstetric interventions

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Plan
- External cephalic version
- 3rd and 4th degree tears
- Instrumental delivery
- Vaginal birth after caesarean section
- Mood disorders associated with pregnancy

Breech presentation
- 3-4% of all term deliveries
- Term breech trial: Mortality and markers of intermediate term morbidity reduced by elective caesarean section
- ECV reduces the caesarean section rate by lowering the incidence of breech presentation (RR 0.55, 95% CI 0.33–0.91, risk difference 17%, NNT 6)
- There is a two-fold increase in intrapartum caesarean sections for successfully turned babies when compared with babies that were not breech at term. A small increase in instrumental delivery is also seen.

Success rates
- Nulliparous – 30-40%
- Multiparous – 60%
- Race, parity, uterine tone, liquor volume, tocolysis
- Not maternal weight, placental position, gestation, fetal size, position of the fetal legs

Contraindications

Absolute
- Where caesarean delivery is required
- Antepartum haemorrhage within the last 7 days
- Abnormal cardiotocography
- Major uterine anomaly
- Ruptured membranes
- Multiple pregnancy (except delivery of second twin).

Relative
- Small-for-gestational-age fetus with abnormal Doppler parameters
- Proteinuric pre-eclampsia
- Oligohydramnios
- Major fetal anomalies
- Scarred uterus
- Unstable lie.

Potential complications
- Placental abruption
- Uterine rupture
- Fetomaternal haemorrhage (Anti D)
- 0.5% immediate caesarean section rate (no increase in perinatal morbidity or mortality)
- Transient CTG changes
ECV in practice
- From 36 weeks (earlier may be better and does not increase the prematurity rate)
- Ultrasound, CTG
- Facility for caesarean section
- Terbutaline 500 micrograms subcutaneously
- ECV may be painful
- ECV may be offered again
- Moxibustion is not effective

Third and fourth-degree tears
- Anal incontinence is defined as any involuntary loss of faeces, flatus or urge incontinence that is adversely affecting a woman’s quality of life.
- Overall risk of obstetric anal sphincter injury is 1% of all vaginal deliveries
- Third-degree tear – partial or complete disruption of the external anal sphincter and/or the internal anal sphincter
- Fourth-degree tear is a disruption of the sphincter and a breach of the rectal mucosa

Risk factors
- birth weight over 4 kg (up to 2%)
- persistent occipitoposterior position (up to 3%)
- nulliparity (up to 4%)
- induction of labour (up to 2%)
- epidural analgesia (up to 2%)
- second stage longer than 1 hour (up to 4%)
- shoulder dystocia (up to 4%)
- midline episiotomy (up to 3%)
- forceps delivery (up to 7%)

Episiotomy
- Median or mediolateral?
- For every 6 degrees from the median, the relative risk reduction was 50%

Repair of the external anal sphincter
- Either an overlapping or end-to-end (approximation) method can be used, with equivalent outcome. Where the IAS can be identified, it is advisable to repair separately with interrupted sutures.

Materials
- EAS muscle: either monofilament sutures such as polydioxanone (PDS) or modern braided sutures such as polyglactin (Vicryl®) can be used with equivalent outcome.
- IAS muscle: fine suture size such as 3-0 PDS and 2-0 Vicryl may cause less irritation and discomfort.
- Bury your knots
Training

- Obstetric anal sphincter repair should be performed by appropriately trained practitioners.
- Formal training in anal sphincter repair techniques is an essential component of obstetric training.

After anal sphincter repair

- Broad-spectrum antibiotics reduce the incidence of postoperative infections and wound dehiscence.
- Postoperative laxatives reduce the incidence of postoperative wound dehiscence.
- Offer physiotherapy and pelvic-floor exercises for 6–12 weeks.

Follow up

- Postnatal review is critical.
- Incontinence or pain may warrant ultrasound and referral to a colorectal surgeon for consideration of secondary sphincter repair.
- Prognosis following EAS repair is good, with 60–80% asymptomatic at 12 months. Most women who remain symptomatic describe incontinence of flatus or faecal urgency.

Subsequent delivery

- Risk of developing anal incontinence or worsening symptoms.
- No evidence to support the role of prophylactic episiotomy in subsequent pregnancies.
- Consider elective caesarean section in women who are symptomatic or have abnormal endoanal ultrasonography and/or manometry.

Instrumental delivery

- Continuous support for women during childbirth can reduce the incidence of operative vaginal delivery (14 trials; \(n = 12\,757\)); RR 0.89; 95% CI 0.83–0.96), particularly when the carer was not a member of staff.
- Use of any upright or lateral position, compared with supine or lithotomy positions was associated with a reduction in assisted deliveries (18 trials; \(n = 5506\)); RR 0.84; 95% CI 0.73–0.98).

Epidural analgesia

- Increased incidence of operative vaginal deliveries (12 trials; \(n = 3653\)); OR = 2.08; 95% CI 1.48–2.93) but provides higher rates of maternal satisfaction with analgesia (6 trials; \(n = 1919\)); OR = 0.27; 95% CI 0.19–0.38).
- There is insufficient evidence to support the hypothesis that discontinuing epidural analgesia reduces the incidence of operative vaginal delivery (23% versus 28%; RR 0.84; 95% CI 0.61–1.15).
- but there is evidence that it increases women’s pain (22% versus 6%; RR 3.68; 95% CI 1.99–6.80).

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**Classification for operative vaginal delivery (ACOG 2000)**
- Gestation: Feitally visible
- Fetal neck has reached pubic floor
- Uterine, breech or transverse lie
- Uterine rupture or significant maternal or fetal compromise
- Female genitalia does not exceed 40 cm

**Indications for operative vaginal delivery**
- Presumed fetal compromise
- Medical indications to avoid Valsalva (e.g. cardiac disease Class III or IV, a hypertensive crisis, cerebral vascular disease, particularly uncorrected cerebral vascular malformations, myasthenia gravis, spinal cord injury)
- Nulliparous women: lack of continuing progress for three hours (total of active and passive second stage labour) progress with regional anaesthesia, or two hours without regional anaesthesia
- Multiparous women: lack of continuing progress for two hours (total of active and passive second stage labour) with regional anaesthesia, or one hour without regional anaesthesia
- Maternal fatigue/exhaustion

**Prerequisites for operative vaginal delivery**
- Full abdominal palpation ≤ 1/5 palpable per abdomen, cervix is fully dilated and the membranes ruptured
- Exact position of the head can be determined, at spine or lower, pelvis is adequate
- Appropriate analgesia is in place
- Maternal bladder has been emptied recently
- Adequate facilities and back-up personnel are available
- Anticipation of complications that may arise (e.g. shoulder dystocia, postpartum haemorrhage)
- Personnel present who are trained in neonatal resuscitation

**Higher rates of failure**
- Maternal body mass index greater than 30
- Estimated fetal weight greater than 4000 g or clinically big baby
- Occipito-posterior position
- Mid-cavity delivery or when 1/5 head palpable per abdomen.

**Ventouse compared with forceps**
- More likely to fail at achieving vaginal delivery OR 1.7; 95% CI 1.3–2.2
- More likely to be associated with cephalhaematoma OR 2.4; 95% CI 1.7–3.4
- More likely to be associated with retinal haemorrhage OR 2.0; 95% CI 1.3–3.0
- More likely to be associated with maternal worries about baby OR 2.2; 95% CI 1.1–4.3
- Less likely to be associated with significant maternal pelvic and vaginal trauma OR 0.4; 95% CI 0.3–0.6
- No more likely to be associated with delivery by caesarean section OR 0.6; 95% CI 0.3–1.0
- No more likely to be associated with low 5-minute Apgar scores OR 1.7; 95% CI 1.0–2.8
- No more likely to be associated with the need for phototherapy OR 1.1; 95% CI 0.7–1.6

**Risks of neonatal intracranial or subgaleal haemorrhage**
- Risk increased by sequential instruments
- By excessive force
- By more than three pulls or prolonged traction
Sequential use of instruments
- Not absolutely contraindicated
- May be safer than a caesarean section with a deeply impacted head
- (risk of intracranial haemorrhage is one in 256 deliveries for two instruments as against one in 334 for failed forceps proceeding to caesarean section).

Episiotomy and antibiotics
- Episiotomy
- Antibiotics
- Analgesia
- Bladder care
- Next delivery

VBAC or ERCS
- Women considering their options for birth after a single previous caesarean should be informed that overall, the chances of successful planned VBAC are 72–76%.

Predicting success
- Previous vaginal birth, particularly previous VBAC, is the single best predictor for successful VBAC and is associated with an approximately 87–90% planned VBAC success rate.
- Less likely:
  - induced labour; no previous vaginal birth
  - body mass index greater than 30
  - previous caesarean section for dystocia
  - VBAC ≥ 40 weeks of gestation
  - birth weight greater than 4000 g
  - no epidural anaesthesia
  - previous preterm caesarean birth
  - cervical dilatation at admission less than 3 cm
  - <2 years from previous caesarean birth
  - Older, non-white ethnicity
  - short stature and a male infant

Risk of rupture
- previous uterine rupture - risk of recurrent rupture is unknown
- previous high vertical classical caesarean section (200–900/10,000 risk of uterine rupture) where the uterine incision has involved the whole length of the uterine corpus.
- three or more previous caesarean deliveries
- (history of 2 previous caesareans, risk of rupture the same. Blood transfusion risk increased)

Risks VBAC versus ERCS
- Blood transfusion 170:10/10,000
- Endometritis 289:180/10,000
- Hysterectomy 23:30/10,000 (not sig)
- TED 4:6/10,000 (not sig)
- Maternal death 17:44/10,000 (not sig, mainly due to medical conditions)
Unsuccessful VBAC versus successful VBAC
- The increased risk is amongst women who attempt VBAC and are unsuccessful
- Uterine rupture 231:11 (/10,000)
- Uterine dehiscence 210:14.5
- Hysterectomy 46:14.5
- Transfusion 319:116
- Endometritis 767:116

Perinatal mortality
- Overall 32:13/10,100 (RR 2.40, 95% CI 1.43-4.01)
- Risk of antepartum stillbirth beyond 37 weeks 19.6:8.0/10,000 (RR 2.45, 95% CI 1.27-4.72)
- 43% of stillbirths were in the planned VBAC group delivering at or after 39 weeks
- After 39 weeks, stillbirth 10/10,000, death 4/10,000

Other morbidities
- Hypoxic ischaemic encephalopathy 7.8:0
- Difference in TTN and RDS probably negated by waiting to do caesarean at 39 weeks
- Anaesthetic complications are low

Future complications
- Placenta accreta 0.24%, 0.31%, 0.57%, 2.13%, 2.33% and 6.74%
- Hysterectomy 0.65%, 0.42%, 0.90%, 2.41%, 3.49% and 8.99%

Signs of rupture
- abnormal CTG
- severe abdominal pain, especially if persisting between contractions
- chest pain or shoulder tip pain, sudden onset of shortness of breath
- acute onset scar tenderness
- abnormal vaginal bleeding or haematuria
- cessation of previously efficient uterine activity
- maternal tachycardia, hypotension or shock
- loss of station of the presenting part

Conditions for VBAC
- Not in a small unit
- Adequate medical, surgical and anaesthetic backup
- IV line, Group and Hold, Continuous CTG
- Epidural is OK
- Induction - brave