Normal Pregnancy, Caesarean Section and Breech Presentation

Test yourself
During recent exams, students were asked the following questions about normal pregnancy and c-section. Test your existing knowledge by answering as many of the questions as you can and then check your responses against the answers (p3-4).
Next read the material on breech presentation (p4-5) and answer the questions (p6-7).
This should take about an hour to complete: you'll get much more out of the course if you do this before attending.

1) What ways are there to determine gestational age?

2) What bloods tests are performed at booking?

3) What are the options for screening women for Down's syndrome?

4) What are the indications for amniocentesis and at what gestation is it performed?

5) When are ultrasound scans performed during a normal pregnancy and what is their purpose?

6) What are the implications of discovering group B streptococcus on a vaginal swab?
7) What are the pros and cons of home delivery?

8) What are the options for analgesia during labour?

9) What are the indications for an elective c-section?

10) What are the pros and cons of elective c-section?

11) What are the delivery options for a woman who had an emergency c-section during her last pregnancy?

12) What are the options for delivery in a 28 year old primagravida who has a persisting breech in late pregnancy?
Answers to the questions

1) What ways are there to determine gestational age?
   Last Menstrual Period
   Naegele’s rule – to LMP add 1 year subtract 3 months and add 1 week
   (LMP and Naegele’s rule valid for a 28 day cycle only)
   Dating scan – crown rump length measured at 7-12 weeks (most reliable method)

2) What bloods tests are performed at booking?
   Full Blood Count
   Blood Group and Antibody Screen
   HIV / Hepatitis B and C / Syphilis / Rubella serology
   Haemoglobin electrophoresis if at risk of sickle cell / thalassaemia

3) What are the options for screening women for Down’s syndrome?
   Combined test – (Nuchal fold thickness + serum ßHCG and PAPP-A) at 11-14 weeks (most accurate)
   Quadruple test - serum screening (ßHCG, AFP, unconjugated estriol and inhibin A) for those who book later; usually performed at 16 weeks

4) What are the indications for amniocentesis and at what gestation is it performed?
   High risk chromosomal abnormality (e.g. >1:100 risk at screening), or family history of known single gene defect. Performed from 15 weeks

5) When are ultrasound scans performed during a normal pregnancy and what is their purpose?
   7-12 weeks – Dating scan
   11-14 weeks – Nuchal scan – measurement of nuchal thickness forms part of combined test for Down’s screening. Often performed at same time as dating scan at 11 weeks.
   ≈20 weeks – Anomaly scan – detailed look at fetal anatomy

6) What are the implications of discovering group B streptococcus on a vaginal swab?
   This is a vaginal commensal and therefore unlikely to cause maternal infection so no immediate treatment given. Risk of transmission to fetus at birth and infection (pneumonia / meningitis) – carries high morbidity / mortality therefore antibiotic (Benzylpenicillin) prophylaxis at delivery recommended and neonatal observation postnatally.

7) What are the pros and cons of home delivery?
   Home delivery- Pros –
   Relaxing environment
   More comfortable
   No transport concerns
   1:1 care guaranteed
   Medical intervention less likely
   Cons –
   Long transfer time into hospital in case of maternal / Neonatal emergency
   Fewer options re. analgesia
   Expert medical care less readily available

8) What are the options for analgesia during labour?
   Bath / Water, TENs, Gas and Air, Pethidine, Epidural

9) What are the indications for an elective c-section?
   Breech
   Twins (Especially if 1st twin is breech)
   Placenta praevia
   Transverse / oblique lie
   Previous Caesarean section – controversial – only routinely recommended if ≥2 previous CS
10) What are the pros and cons of elective c-section?

**Pros-**
- Timing of delivery known
- Reduced rates of perineal pain after delivery
- Reduced rates of uterovaginal prolapse and urinary incontinence later

**Cons-**
- Increased risk of visceral injury
- Increased risk of requiring hysterectomy
- Increased risk of Transient Tachopnoea of Newborn (TTN)
- Increased abdominal pain post delivery
- Increased risk of post-op venous thromboembolism
- Longer hospital stay
- Subsequent surgery more likely – e.g. repeat CS, surgery for adhesions
- Risks in subsequent pregnancies – placenta praevia, scar dehiscence

11) What are the delivery options for a woman who had an emergency c-section during her last pregnancy?

- Vaginal Birth After Caesarean Section (VBAC) – risk of scar dehiscence approx 1:200 or
- Elective Caesarean section

12) What are the options for delivery in a 28 year old primagravida who has a persisting breech in late pregnancy? *Planned vaginal delivery, external cephalic version, elective c-section at 39 weeks*

*Please read the notes on breech presentation which follow.*

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**Notes and Questions on Breech Presentation**

**Breech presentation**

- Affects 3% of pregnancies at term
- More common pre-term:
  - 40% at 20 weeks
  - 20% at 28 weeks
  - 6% at 34 weeks
- Risk factors
  - Preterm
  - Uterine abnormality (fibroid, septum)
  - Fetal abnormality
  - Twins
  - Low lying placenta
  - Poly- / Oligohydramnios – Excessive / reduced amniotic fluid

  *i.e. Anything which prevents head engaging in pelvis*
Breech presentation: 3 types

- **Flexed**
  - Greatest risk of cord prolapse
  - (feet don’t plug cervix as well – space for cord to come down)
  - Most common

- **Footling**
  - Greatest risk of cord prolapse
  - Difficulty delivering the head (largest part of the fetus delivering last)
  - Fetal hypoxia
  - Staff now not as experienced in vaginal breech deliveries

- **Extended**
  - Most common

Problems with vaginal breech delivery

Risks:
- Cord prolapse
- Difficulty delivering the head (largest part of the fetus delivering last)
- Fetal hypoxia
- Staff now not as experienced in vaginal breech deliveries

Results in:
- Increased perinatal morbidity and mortality in infants born by vaginal breech at term (‘term breech trial’)

Delivery options for breech presentation at term

- Elective Caesarean section
- External Cephalic Version (ECV)
- Vaginal breech delivery

**Elective Caesarean section**

- Usually performed at 39 weeks:
  - Before 39 weeks infants born by Caesarean section are at increased risk of Transient Tachypnoea of the Newborn (TTN)
  - Beyond 39 weeks increased risk of labour and therefore emergency Caesarean section
- Benefits:
  - Reduced perinatal morbidity / mortality
- Risks:
  - Increased maternal morbidity / mortality
  - Longer recovery time
  - Impact on subsequent pregnancies

**External Cephalic Version**

- Abdomen manipulated to turn fetus presentation
- Uterine relaxants often given prior to procedure
- Fetal heart monitored with CTG pre- and post procedure
- Can be uncomfortable
- Benefits: may prevent C-section or vaginal breech delivery and their associated risks
- Risks: fetal distress (cord entanglement / retro-placental clot) often transient (emergency Caesarean section rate 1:200)
- Success rates: 40% nulliparous; 60% multip
Contraindications
- Under 37 weeks gestation
- Previous c-section
- Placenta praevia
- Fetal or uterine abnormality
- Multiple pregnancy

Vaginal Breech Delivery
- High risk delivery - facilities for CS must be available
- Fetal heart should be continuously monitored
- Low threshold for Caesarean section in the event of fetal distress / delayed progress
- More likely to be successful in multiparous women

Test yourself: single best answer
Select the single most appropriate action…..
  a) Vaginal Breech Delivery
  b) Caesarean section
  c) External Cephalic Version
...in the following scenarios

Scenario 1
A 32 year old multiparous woman presents with previously undiagnosed breech presentation at 38 weeks. Her previous pregnancy resulted in a Caesarean section. She has had no complications in this pregnancy and is keen to avoid a Caesarean section and have an ECV

Scenario 2
A 34 year old G2P1 had a spontaneous vaginal delivery in her previous pregnancy and is now expecting twins. She has had an otherwise uneventful pregnancy so far. A growth scan at 37 weeks reveals that the first twin is cephalic presentation and the second twin breech. She is keen to have a vaginal delivery.

Scenario 3
A 24 year old primiparous woman is expecting twins. At 37 weeks both are presenting breech. She has had an otherwise uneventful pregnancy.

Scenario 4
A 27 year old multip has had one previous vaginal delivery. She is currently 37 weeks pregnant and has a fetus which is unexpectedly found to be presenting breech. She has had an otherwise uneventful pregnancy. She insists on a Caesarean section.

Answers are on the next page.
Scenario 1 - Answer
b) Caesarean section
Vaginal breech delivery and ECV are both contraindicated in women who have had previous Caesarean sections.

Scenario 2 - Answer
a) Vaginal Breech Delivery
In the situation of the 2nd twin presenting breech, a vaginal delivery is considered safer than in a singleton pregnancy as 1 twin has already passed through the birth canal, there is therefore not so much concern regarding delivery of the second baby's head. This woman is also multiparous which would increase the chances of a successful vaginal delivery.

Scenario 3 - Answer
b) Caesarean section
A vaginal delivery is contraindicated when the first twin is breech because of the possibility of 'interlocking' of the twins. ECV is contraindicated in multiple pregnancy. Caesarean section is therefore the safest option in this situation.

Scenario 4 - Answer
b) Caesarean section
This woman should be counselled regarding the three options. She would certainly be a good candidate for an ECV. However if following a thorough discussion of the risks and benefits of each option she still requests a Caesarean section her request should be granted.

Finally, here is a data interpretation question:

Comment on this partogram

What are the possible causes?

What are the treatment options?
Answer

Comment on this partogram
The partogram shows “failure to progress” or prolonged second stage as there is less than 2cm dilation in 4 hours. In a primiparous woman, you would expect a minimum of 2cm dilation of the cervix in that time.

Causes: think “power, passenger and passage”
Power: primary labour dystocia or “inefficient uterine action” is the commonest cause, particularly in a nulliparous woman (uncommon in a multiparous woman)
Malpresentation (eg OP or brow presentation), fetal macrosomia
Cephalopelvic disproportion (uncommon)

Treatment options
Augmentation (NB Probably doesn’t affect the C-section rate)
C-section

<table>
<thead>
<tr>
<th>Stage of labour</th>
<th>Definition</th>
<th>Normal duration in primiparous women</th>
<th>Normal duration in multiparous women</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>From onset of regular painful contractions to full dilatation: Latent phase: up to 4cm dilation</td>
<td>Often long 0.5-1cm per hour Average 8 hours</td>
<td>Often short 1-2cm per hour Average 5 hours</td>
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<tr>
<td></td>
<td>Active phase: from 4cm to 10cm (fully dilated)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>From full dilatation to delivery of infant</td>
<td>1-2 hours</td>
<td>Up to 1 hour</td>
</tr>
<tr>
<td>Third</td>
<td>From delivery of infant to delivery of placenta</td>
<td>Up to 30 minutes</td>
<td>Up to 30 minutes</td>
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