

Answers

CASE 4.1 – My baby is due and I think I am in labour.

Q1: What is the likely differential diagnosis?

A1

- Labour.
- Braxton Hicks contractions.
- False labour.

Q2: What issues in the given history support the diagnosis?

A2

Regular uterine contractions at term usually indicate the start of spontaneous labour.

Q3: What additional features in the history would you seek to support a particular diagnosis?

A3

Increasing regularity and duration of contractions would support a diagnosis of the onset of spontaneous labour. A 'show' (mucus plug from the cervix) and/or rupture of the membranes may accompany the onset of labour. A brief history of the current pregnancy should be taken.

Q4: What clinical examination would you perform and why?

A4

A general assessment of maternal condition is made, including measurement of pulse, blood pressure and temperature. Abdominal palpation is performed to feel for uterine contractions, confirm the lie and presentation, check for engagement of the presenting part and listen to the fetal heart. A vaginal examination is performed to check for cervical effacement and dilatation, station and position of the presenting part, and the colour of any liquor draining. Labour would be confirmed if regular uterine contractions were present in association with an effacing and dilating cervix.

**Q5: What investigations would be most helpful and why?**

A5

● **Urinalysis**

Proteinuria is evidence of pre-eclampsia if associated with raised blood pressure. Ketonuria is evidence of dehydration.

**Q6: What treatment options are appropriate?**

A6

- Maternal well-being should be assessed by regular measurement of the patient's temperature, pulse and blood pressure, which should all be recorded on a partogram. Dehydration should be avoided, with the patient being encouraged to drink water. As a result of the delayed gastric emptying time and the risk of aspiration, food should be avoided during labour. The mother should be encouraged to micturate frequently in labour to enable measurement of urine output and to avoid urinary retention. On each occasion the urine can also be tested for protein and ketones.
- Fetal well-being should be assessed by observing the colour of the liquor. The presence of meconium might indicate fetal hypoxia. The fetal heart should be auscultated every 15 min during and for 1 min after a contraction. If an abnormality is detected, or if another indication arises (e.g. epidural analgesia is used), continuous fetal heart rate monitoring should be commenced.
- Progress of labour should be assessed by performing regular (4-hourly) vaginal examinations. The dilatation of the cervix is estimated in centimetres, the descent of the head is measured by its relationship to the ischial spines as centimetres above or below an imaginary line drawn between the spines, and these measurements are recorded on a partogram (see Figs 4.2 and 4.3).
- Adequate pain relief should be provided. Transcutaneous electrical nerve stimulation (TENS), Entonox, opiates (e.g. pethidine, diamorphine) and an epidural block are commonly used options. The choice will depend on maternal preference in association with factors such as the stage of labour, the availability of an anaesthetist if an epidural is chosen and other obstetric factors (e.g. hypertension, in which case an epidural may be more appropriate).

**CASE 4.2 – I am in labour and the midwife says my baby is getting tired.****Q1: What is the likely differential diagnosis?**

A1

Fetal distress in labour.

**Q2: What issues in the given history support the diagnosis?**

A2

Fetal growth restriction is a risk factor for fetal hypoxia. The cardiotocography in this case is abnormal, with reduced beat-to-beat variation, no accelerations and variable decelerations.

**Q3: What additional features in the history would you seek to support a particular diagnosis?**

A3

Additional risk factors for intrauterine growth restriction in which hypoxia is more common include smoking, elevated blood pressure, antepartum haemorrhage and chronic maternal disease (e.g. renal disease). Reduced fetal movements may have been noted before the induction of labour. Meconium-stained liquor during labour may be associated with fetal hypoxia (Box 4.1).

Box 4.1 Intrapartum signs that would indicate fetal distress

- Meconium staining is present in 15 per cent of all deliveries at term and in 40 per cent of deliveries post-term
- Gross meconium staining is likely to be significant and, together with cardiotocograph (CTG) abnormalities, should never be ignored
- Meconium aspiration by the baby may cause pneumonitis, which can be fatal. Aspirating the upper airway at the time of delivery to clear meconium can reduce the risk of this occurring

**Q4: What clinical examination would you perform and why?**

A4

Examination would include abdominal palpation, where the fundus as assessed by the symphysiofundal measurement may be small for dates. This finding would support fetal growth restriction.

**Q5: What investigations would be most helpful and why?**

A5

- **Fetal blood sampling** The reduced beat-to-beat variation and variable decelerations would give cause for concern (Box 4.2).

Box 4.2 What should be done when irregularities of the CTG occur?

- A significant proportion of babies who are thought to have 'fetal distress' as determined by abnormalities on the CTG and who are subsequently delivered by forceps or caesarean section are not hypoxic; conversely a significant proportion of hypoxic babies do not exhibit classic signs of fetal distress. However, a normal CTG is very reassuring and indicates good fetal well-being
- In cases where CTG monitoring shows signs that raise the possibility of fetal hypoxia (e.g. tachycardia, decelerations), this should be confirmed by fetal scalp blood sampling to measure fetal pH

 **Q6: What treatment options are appropriate?**

A6

Management would be according to the analysis of fetal blood sampling (Box 4.3).

Box 4.3 Obstetric management after fetal blood sample***pH < 7.20***

Deliver the baby by forceps/Ventouse if the cervix is fully dilated and the fetal head is engaged, or by caesarean section if this is not the case

pH > 7.20 but < 7.25

Repeat fetal blood sampling after 30 min unless there is a deterioration in CTG before this time

pH > 7.25

Normal result: repeat fetal blood sampling if CTG deteriorates

 **CASE 4.3 – The midwife says my labour is not progressing.** **Q1: What is the likely differential diagnosis?**

A1

Failure to progress in labour may result from:

- inadequate uterine activity;
- cephalopelvic disproportion.

 **Q2: What issues in the given history support the diagnosis?**

A2

Her height (no evidence of short stature) and the fact that the vertex is engaged do not support cephalopelvic disproportion. The lack of requirement for analgesia would support inadequate uterine contractions.

 **Q3: What additional features in the history would you seek to support a particular diagnosis?**

A3

The frequency and duration of contractions should be recorded. Risk factors for cephalopelvic disproportion (e.g. macrosomia, diabetes) should be sought.

 **Q4: What clinical examination would you perform and why?**

A4

Examination would include an abdominal palpation to assess the clinical size of the baby, to assess the amount of head that is palpable in order to determine whether the head is engaged, and also to assess the frequency and strength of uterine contractions. Four-hourly vaginal examinations should be performed to assess the progress of labour, and the findings should be plotted on a partogram (as shown in Fig. 4.2). Assessment of fetal position should be made as a malposition (e.g. persistent occipitoposterior) would create a relative cephalopelvic disproportion because of the increased diameters presented. An assessment of the presence and degree of moulding (overlapping skull bones) and caput (scalp oedema) is required, and would support cephalopelvic disproportion. An assessment of liquor colour should be made, with the presence of meconium indicating the possibility of fetal hypoxia. Maternal well-being (pulse, blood pressure, temperature, urine output) should be assessed and adequate analgesia provided.

 **Q5: What investigations would be most helpful and why?**

A5

- **CTG** To look for evidence of associated fetal distress.
- **FBC** To check for anaemia in case caesarean section is required.
- **Group and save blood** In case caesarean section is required and a transfusion becomes necessary as a result.

 **Q6: What treatment options are appropriate?**

A6

Commence oxytocin (Syntocinon) and reassess in 4 h if there is still no concern about fetal condition. Oxytocin makes the contractions more regular, stronger and more frequent, resulting in effective uterine contractions that will lead to cervical dilatation and fetal head descent.

 **CASE 4.4 – The midwife says my labour is not progressing.**

 **Q1: What is the likely differential diagnosis?**

A1


Failure to progress in labour may result from:

- cephalopelvic disproportion;
- poor uterine contractility.

 **Q2: What issues in the given history support the diagnosis?**

A2

Her height (short stature) and the fact that her baby is clinically large (macrosomic) point towards cephalopelvic disproportion. Her uterine contractions are adequate as recorded on the partogram.

 **Q3: What additional features in the history would you seek to support a particular diagnosis?**

A3

Consider predisposing factors for macrosomia (e.g. gestational diabetes).

 **Q4: What clinical examination would you perform and why?**

A4

Examination would include an abdominal palpation to assess the clinical size of the baby and to assess the amount of fetal head that is palpable in order to determine whether the head is engaged. The frequency and strength of uterine contractions also need to be assessed. Four-hourly vaginal examinations would be performed to assess the progress of labour, and the findings should be plotted on a partogram. At vaginal examination, assessment of the position of the vertex would be required as a malposition (e.g. persistent occipitoposterior) could create a relative cephalopelvic disproportion because of the increased fetal diameters presented to the maternal pelvis. An assessment should be made of the degree of moulding (overlapping skull bones) and caput (scalp oedema), the presence of which would support cephalopelvic disproportion. The colour of the liquor should be noted, with the presence of meconium indicating the possibility of fetal hypoxia. Assessment should also be made of maternal well-being and adequate pain relief should be provided.

 **Q5: What investigations would be most helpful and why?**

A5

- **CTG** To look for evidence of associated fetal distress.
- **FBC** To check for anaemia in case caesarean section is required.
- **Group and save blood** In case caesarean section is required and a transfusion becomes necessary as a result.

 **Q6: What treatment options are appropriate?**

A6

Caesarean section under spinal or epidural anaesthesia is required because, according to the partogram, the cervix has not dilated for 4 h, the fetal head has not descended in the maternal pelvis and labour has not progressed despite 4 h of uterine stimulation with oxytocin.

OSCE counselling cases

OSCE COUNSELLING CASE 4.1 – What pain relief should I have in labour?

Q1: What are the options for pain relief during labour?

A1

- Antenatal preparation and a calm labour environment are important. The presence of a partner or birth attendant who can rub and/or massage the woman's back and provide reassurance and support can help during labour. Attendance at parent-craft classes will help the woman to prepare for labour.
- Choices of analgesia in labour include the following:
 1. Transcutaneous electrical nerve stimulation can be of benefit in early labour.
 2. Entonox inhalation has a rapid onset with mild analgesic effects. It is most effective in early labour. It is best to start inhaling before the onset of a contraction and to continue until the end of the contraction. It can cause light-headedness and nausea.
 3. Opiates such as pethidine and diamorphine can be given as an intramuscular injection every 4–6 h. Pethidine has central sedative effects rather than providing effective analgesia. Patients can therefore become confused and feel 'out of control'. It also causes nausea, so there is often a need for antiemetics. It can cause a sleep pattern in the fetus so the fetal heart rate may show some abnormality. At birth, respiratory depression can also occur in the neonate. Diamorphine given in a similar fashion has a stronger analgesic effect.
 4. Epidural analgesia with or without opiates is a very effective form of analgesia that can be either given intermittently or infused continuously via a pump. It completely blocks sensation (except pressure) and induces partial motor blockade, making the legs feel heavy and 'dead', so mobility is restricted. It is useful if surgical delivery is required.
- These options can be tried in the above sequence, or it may be necessary to skip the sequence and use epidural analgesia directly.

OSCE COUNSELLING CASE 4.2 – I have passed my due date and I am not in labour yet.

Q1: What information will be required for counselling her about induction of labour for post-term pregnancy?

A1

- Post-term pregnancy occurs in about 10 per cent of pregnant women.
- One approach to management of this condition is to monitor fetal well-being while awaiting spontaneous labour, but it is reasonable to induce labour as an alternative. It is recommended that induction of labour should be offered at term + 10–14 days, in the interest of the fetus, with perinatal deaths being more common after this period.
- On admission to hospital, fetal well-being should be assessed with a CTG.

- The state of the cervix will be examined in order to determine its length, dilatation, consistency and position (a score can be calculated in combination with the station of the fetal head – see Bishop score on page 51 (Table 4.1). If the cervix is favourable for induction (Bishop score > 6), the fetal membranes can be ruptured artificially (artificial rupture of membranes or ARM), which would result in a significant proportion of women going into labour a short time afterwards.
- If the cervix is not favourable for induction (Bishop score < 6), prostaglandin is administered in the form of vaginal pessaries. This is usually two doses 6–12 h apart. The prostaglandin usually softens and effaces the cervix. Sometimes it can initiate labour, but its main role in this situation is to ripen the cervix before ARM.
- If ARM does not initiate labour, the latter may be induced or augmented with oxytocin (Syntocinon) infusion.
- If induction of labour fails completely, a caesarean delivery may be performed.
- If induction of labour is successful, there is a slightly higher probability of fetal heart rate abnormalities in labour, which may lead to a higher probability of the need for caesarean delivery.
- Labour after successful induction is managed in the usual manner with regard to pain relief, assessment of fetal and maternal well-being, and progress of labour.

Box 4.4 Post-dates pregnancy

- Perinatal mortality increases by twofold after 42 weeks
- The caesarean section rate increases by twofold after 42 weeks
- Meconium staining occurs in 40 per cent of pregnancies beyond 42 weeks
- Caesarean section rates increase in association with induction of labour in post-dates pregnancy together with an unripe cervix