Epidural anaesthesia: how to convert a labour analgesia epidural into a surgical anaesthetic block (GL757)

Approval

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<tr>
<th>Approval Group</th>
<th>Job Title, Chair of Committee</th>
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<tbody>
<tr>
<td>Maternity &amp; Children’s Services Clinical Governance Committee</td>
<td>Chair, Maternity Clinical Governance Committee</td>
<td>2nd November 2018</td>
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Change History

<table>
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<tr>
<th>Version</th>
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<tr>
<td>1.0</td>
<td>August 2003</td>
<td>Dr R Jones and Dr KJ Bird (consultant anaesthetists)</td>
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<td>3.0</td>
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**Overview:** Epidurals can usually be topped up for an instrumental delivery. Topping up an epidural should be viewed as inducing any anaesthetic and should be done in theatre with full monitoring.

**Summary:**
- Talk to obstetrician about planned mode and urgency of delivery
- Check that the epidural has been working. If not consider converting to a spinal with no further top-ups. Remember 12% of epidurals work poorly in labour\(^1,2\)
- Give 3-4 ml 0.5% Bupivacaine or 2% Lidocaine mix via epidural catheter as test dose
- Move the woman to theatre as soon as possible
- Give up to 20 ml of local anaesthetic (either 0.5% Bupivacaine or 2% Lignocaine mix with or without Fentanyl)
- If the block will not rise above T5 to light touch make a decision to convert to a GA before any abdominal surgery starts or ask the surgeon to infiltrate the perineum prior to an attempted instrumental delivery if there is no loss of pelvic floor tone.

**Decision made to go to theatre:**

Communicate with the obstetrician about the urgency of the delivery and their confidence of achieving a vaginal delivery if it is a trial of forceps. A counsel of perfection would be that a trial of forceps should be topped up in readiness for a section but if they feel that there is a high probability of success then you can concentrate on the sacral block without worrying so much about the thoracic.

**Pre-op assessment:**

It is preferable to explain to the mother what you intend to do before going to theatre. It is imperative that you explain what is happening and why at each stage. Make an anaesthetic assessment of her. Remember you may end up giving her a general anaesthetic.

- Note the time of the last top-up
- Establish the current level of the block using ethyl chloride and touch.
- Even a seemingly adequate block after ‘low dose’ analgesia needs converting to a surgical block. Take care with positioning to reduce cranial spread.
- Suitable mixtures to use
  - 0.5% bupivacaine 10 - 20 ml
  - "Lidocaine mix" top-up recipe (see guideline on pre-prepared boxes):
    - 20mls 2% lidocaine
    - 0.1 ml adrenaline 1 in 1000 (Gives 1:200,000 mixture)
    - 2mls 8.4% sodium bicarbonate (0.84% solution)
  - Fentanyl 50 - 100 mcg will improve the quality of the block\(^3\)
  - Diamorphine 3 – 5 mg can be given after the umbilical cord has been clamped. This improves post-operative pain control but must be recorded on...
the drug chart in order that midwives are aware of the risk of respiratory depression.

**Test dose:**
An initial dose of 3 – 4 ml 0.5 % Bupivacaine or 2 % Lignocaine mix may be given in the labour room. Ask the midwife to inform the theatre team and then accompany the patient to theatre as soon as is practicable. **Do not give any further doses in the room as you do not have access to suitable monitoring or resuscitation equipment.** While giving the test dose ask about warmth in the bottom or 'any funny feelings', strange tastes, smells or sudden feelings of vagueness (to identify intravascular or intrathecal catheter placement). Make sure that the woman is transferred in the full lateral position in order to prevent aortocaval compression.

**How much more to give:**
- Before giving any further local anaesthetic ask about loss of pelvic floor tone and change of sensation in the legs.
- 15 - 20 ml of local anaesthetic is the usual range of volume. Having given a test dose then the next bolus should be 8 - 10 ml. Check the block every 5 minutes. This may be asymmetric. If it is higher on the left than the right roll the patient through to the right lateral. Be aware that each turn through from one side to the other can cause a profound change in the level of the block and in the blood pressure. There needs to be a compromise between caution and the urgency of delivery. Head down tilt is also useful.
- **Please make sure that you document all doses on the anaesthetic chart. Your anaesthetic starts whenever you begin top ups.** Please only give the test dose in the labour room and then move on to theatre. The patient can be catheterized there. It is a safer environment to give an anaesthetic and if the baby has fetal distress it is easier to deliver the baby rapidly if needed.

**How to check the block for a section:**
- There should be loss of cold sensation to T4. We have ethyl chloride which is the easiest method though do remember that it is explosive.
- Light touch should be lost to T5. The ethyl chloride can be used or you can pinch the skin or use cotton wool.
- The lower level of the block should also be documented. Cold sensation over the bottom can be tested and pelvic floor tone asked about.
- Check that there is weakness of flexion at the hip. Ability to move toes is not a problem though some women are disconcerted by it.

**Management of an inadequate block:**
Communication with the obstetrician is crucial. The course of action will depend upon the urgency of delivery and the stage of surgery at which the anaesthetic is found to be inadequate. It may be possible to give more local anaesthetic via the epidural catheter or it may be necessary to convert to GA. Check the block carefully before starting the section. If the mother complains of pain take her seriously and listen to her. Reassure her,
stop the surgery if necessary but give a GA if you need to. Document any reported sensations and actions taken very carefully on the anaesthetic chart.

**Do not give iv midazolam.** The pain is most often due to the peritoneum being handled. Giving midazolam does not treat pain. It will disinhibit the woman and she will often moan in a very distressing manner. This is awful for the husband and staff.

**Inadequate block before starting surgery:**

The use of spinal anaesthesia on top of an inadequate epidural is controversial. There have been anecdotal reports of unpredictably high blocks. It is not advised as a technique for obstetric anaesthetic trainees to use without consultant consultation. **You must be obsessional with the position of your patient** if done

If you know that an epidural has been inadequate and has not been topped up for over an hour, it is reasonable to proceed with a spinal. But do be careful about high blocks. Some anaesthetists suggest reducing the ‘normal’ spinal dose (volume of heavy bupivacaine) to prevent the potential for total spinals but to do so risk a second inadequate block. Others recommend using a normal spinal dose and being vigilant about positioning to prevent a total spinal. Discussion with a senior colleague and assessing on a case by case basis would be a sensible approach.
**Inadequate block prior to delivery:**

The pain must be acknowledged and confirmation of its nature and site. Is it a generalised discomfort or is it a pulling or pressure sensation or overt, sharp pain? Reassure the patient and partner and stop surgery if able. Consider entonox or a further top up of epidural but if pain is still present at this stage in the procedure, an early offer of a GA is best. Involve patient in decision.
Inadequate block after delivery:

Again communication with the patient and partner is vital. Ask the obstetricians if they are able to stop surgery to allow further assessment of the block and provide analgesia. Consider IV opioids if the pain is on closing the peritoneum and rectus sheath. Either small boluses of 100mcgs alfentanil (diluted to 100mcg/ml) or 25mcg fentanyl. Entonox should also be offered and LA infiltration by obstetrician. If the pain is still unbearable, a GA must be offered and senior help summoned.

Documentation & follow ups

All conversations, plans and management must be documented meticulously. As well as routine follow up, the opportunity should be sought to meet and fully explain events to the patient after delivery and also to debrief as a team of clinicians.

References


