

EPIDURAL TROUBLESHOOTING GUIDE
FOR OBSTETRIC ANAESTHESIA

2019



Introduction

Epidural failure is common (8–23%). Epidurals failure for a number of reasons but knowledge of the causes can allow an anaesthetist to troubleshoot and potentially salvage an inadequately functioning epidural.

The first step in troubleshooting a labour epidural is a thorough assessment of the parturient to ‘diagnose’ the problem. Once satisfied that the epidural catheter is in the correct space a number of strategies can be used to improve analgesia.

Timely assessment and management of an inadequate block will improve parturient satisfaction. Do not persist in trying to rescue an inadequate epidural. Discuss the situation with the mother, bearing in mind any anaesthetic risk factors, and offer to re-site the catheter.

Please read this leaflet in conjugation with local guidelines and with reference to the usual practice on your delivery suite.

Assessment of the Epidural Block

1. **Subjective assessment:** What does the woman feel and where?
2. **Objective assessment:**
 - a. Bilateral sensory assessment using cold spray
 - i. Dermatomal level?
 - ii. Unilateral, bilateral or asymmetric?
 - iii. Change as expected with top ups?
 - b. Degree of motor block
 - c. Sympathetic block – bilateral warm feet?
3. **Position** (maternal and fetal)
 - i. Maternal position can affect spread
 - ii. Fetal position can affect sensations felt
4. **Epidural site and equipment**
 - i. Dressing intact?
 - ii. Excessive leaking?
 - iii. Catheter marking at skin unchanged?
 - iv. Equipment set-up appropriately and functioning e.g. no alarms
5. **Number of top ups** already given, doses and effectiveness
6. Ask yourself: **Would I top this epidural up** if intervention in theatre was required?

NOTE: If persistent pain despite adequate sensory block consider impending uterine rupture

Signs of Catheter Placement Outside of the Epidural space

| | Onset (mins) | Motor Block | Potential other features |
|--------------|--------------|--|---|
| Subcutaneous | Never | None | Local tissue swelling Potentially more likely in high BMI patients |
| Subdural | 5-30 | Minimal motor block Sympathetic sparing | Inappropriately high sensory block Horner's syndrome / nasal stuffiness Patchy block Blood pressure usually maintained Risk of rupture of the arachnoid and an intrathecal block (rare) |
| Intrathecal | 2-5 | Rapid (dose dependant) | CSF during insertion Rapid onset sensory block High / total spinal block Respiratory compromise Fetal bradycardia PDPH (late) |

| | | | |
|-------------|-----|------|---|
| Intravenous | 0-2 | None | Blood aspirated through catheter Signs and symptoms of local anaesthetic systemic toxicity |
|-------------|-----|------|---|

Please remember that migration of epidural catheters can occur despite correct placement initially. Migration can be reduced by leaving 5 cm or less of catheter within the epidural space and not fixing the catheter in the flexed position.

Common Patterns of Inadequate Labour Analgesia

Missed segment

- Persistent pain in a single area with otherwise good analgesia
- Potential strategies
 - o Epidural top with low dose mixture (LDM) & inadequately blocked side down
 - o Withdrawal of the catheter by 1 cm, using a sterile technique (leaving a minimum of 3cm in the epidural space)
 - o Single bolus dose of up to 50 mcg fentanyl down the epidural catheter +/- 5-10mls of 0.25% levobupivacaine

Unilateral block

- Unilateral sensory block with a difference in skin temperature
- May be caused by lateral placement of the epidural catheter either within the space or through the intervertebral foramina

- Potential strategies
 - o Epidural top using LDM & inadequately blocked side down
 - o Withdrawal of the catheter by 1 cm, using a sterile technique (leaving a minimum of 3cm in the epidural space)

Low block

- Demonstrable and even sensory block but at a level lower than required
- Inadequate volume of LA in the epidural space or due to caudal position of epidural catheter
- Potential strategies
 - o Epidural top using low dose mixture – volume

Sacral sparing

- Vagina & perineum are innervated by S2-4
- LA has a tendency to spread cephalad
- S2-4: large diameter with thick dura mater
- ↑ frequently if the fetus is in the OP position and may improve with fetal rotation during descent
- Potential strategies:
 - o Epidural top using LDM in the sitting position (to encourage caudad spread of local anaesthetic) if maternal and fetal condition allows
 - o 5-10mls of 0.25% levobupivacaine
 - o Re-site at a lower space
 - o Re-site with a low dose CSE (if this is practiced on your unit)

- o Explanation +/- supplementation may be adequate for some women with low levels of a pain / pressure

Precipitous labour / 'late' request for an epidural

- Labour processes rapidly, before there is time to establish effective epidural analgesia.
- If recognized prior to insertion then a low dose CSE is an alternative to an epidural alone (if practiced on your unit)

Top up checklist

| | |
|---|--------------------------|
| Is this catheter in the right place? Treat every top up as a test dose and only proceed if you are satisfied. | <input type="checkbox"/> |
| Parturient informed of plan | <input type="checkbox"/> |
| Midwife in the room and aware that bolus is being given | <input type="checkbox"/> |
| Appropriate monitoring attached e.g. CTG, NIBP cuff and Saturation probe | <input type="checkbox"/> |
| Give appropriate bolus | <input type="checkbox"/> |
| Ensure appropriate post-bolus monitoring | <input type="checkbox"/> |
| Prescribe your drugs and document in the notes | <input type="checkbox"/> |
| Assess effectiveness in a timely manner | <input type="checkbox"/> |

Further guidelines and information can be found at:

- https://www.aagbi.org/sites/default/files/la_toxicity_2010_0.pdf
- Your local departmental policies / guidelines

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