Spinal & Epidural Anaesthesia Explained

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What is it?

- 2 techniques in common use and have many confusing synonyms:
  - **SPINAL** (also known as intrathecal or subarachnoid block)
  - **EPIDURAL** (also known as extradural block)

Also referred to as **REGIONAL ANAESTHESIA**
## Differences between spinal and epidural anaesthesia

<table>
<thead>
<tr>
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<th>SPINAL</th>
<th>EPIDURAL</th>
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<tr>
<td><strong>ONSET</strong></td>
<td>2-5 MINS</td>
<td>20-30 MINS</td>
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<td><strong>DURATION</strong></td>
<td>2-4 HOURS</td>
<td>3-5 HOURS and longer with infusion</td>
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<td><strong>DRUG VOLUME</strong></td>
<td>2.5-4 ml</td>
<td>20-30 ml</td>
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<td><strong>QUALITY OF BLOCK</strong></td>
<td>Rapid surgical anaesthesia provided</td>
<td>May be inadequate in some dermatomes</td>
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<tr>
<td><strong>QUALITY OF POST-OP ANALGESIA</strong></td>
<td>Brief period only</td>
<td>Excellent if working well</td>
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Differences continued.....

- **Spinals**
  - Rapid onset following single shot injection
  - Duration < 4 hours
  - Surgical anaesthesia below the level of umbilicus
  - Small doses of LA +/- diamorphine

- **Epidurals**
  - Slower onset
  - Used in lumbar or thoracic region to achieve higher block
  - Excellent alternative to intravenous opioids
  - Duration can be extended to 48-72 hours with infusions
Spinal Anaesthesia

- Requires single injection of small volume of local anaesthetic directly into CSF in the lumbar region below L1/2 (same technique as lumbar puncture)

- Suitable for all lower limb surgery lasting < 2-3 hours

- Often combined with light sedation for patient comfort
Epidural anaesthesia

- Usually combined with general anaesthesia
- Commonly continued in post operative period to provide analgesia via epidural catheter, through which further LA is infused
- Generally discontinued by 48 hours to lessen risk of infection
Complications

- Intraoperative hypotension (particularly for spinal)
- Headache (1:200)
- Failure/Inadequate block
- Unintentional dural tap (epidural only)
- High blockade resulting in breathing difficulties (rare)
- Neurological damage (rare)
  - Direct neurological trauma
  - Haematoma formation
  - Infection/Arachnoiditis
Epidural problems on the ward

- Most epidural infusions are a standard mixture of a low concentration of bupivacaine and a weak solution of opioid eg fentanyl
- Overall responsibility rests with the anaesthetist
- The Acute Pain Service (APS) are an excellent source of advice
Epidural problems on the ward

- Itching
  Due to opioid. If unbearable contact APS or anaesthetist

- Pain
  May be due to inadequate infusion rate or migration of epidural catheter. Contact APS or anaesthetist
Epidural problems on the ward

- Hypotension
  Rule out other causes eg bleeding. Give fluid bolus

- Headache
  Possibly due to CSF leakage. Contact APS or anaesthetist
Epidural problems on the ward

- Signs of epidural haematoma/ abscess

  - Profound motor block – patient unable to move toes
  - Raised temperature
  - Generalised malaise
  - Other neurological signs eg fitting

This is potentially catastrophic. Call for senior orthopaedic and anaesthetic help immediately