Optimising blocks – How to get more for less

Mike Paech

Professor and Chair of Obstetric Anaesthesia, The University of Western Australia
King Edward Memorial Hospital for Women, Perth
My Credentials/ Disclosures / Objectives

Old

No conflicts of interest

Strategies for quiet nights & low medical defence insurance

- Labour analgesia
- Labour epidural trouble shooting
- Epidural top-ups for caesarean delivery (CD)
- Spinals for CD
Blocks for labour analgesia

- Choose the right block for the situation - often a CSE
- Get it in the right place
- Use decent volumes of low concentration LA + opioid
- Maintain the epidural by PCEA
Earning your money - achieving an effective epidural in the shortest possible time

What I want from every block -

- A rapid onset
- A woman who is comfortable
- A satisfied customer
Earning your money - achieving an effective epidural in the shortest possible time

- Get cooperation (charm? good instructions? IV alfentanil? ...and be nice to midwives)
- Learn to do CSEs, as well as epidurals, quickly, using whatever technique you do best (sitting? familiar kit? commercial solution 2 mL 'pre-mix'? usually no pre-scan!)
- If the catheter doesn’t feed well, do it again then....not later
Evidence supports -
Fentanyl 20 mcg with bupivacaine 1.25-2.5 mg

I support -
2 mL “pre-mix” [bup 0.125% + fent 5 mcg/ml] = fentanyl 10 mcg & bupivacaine 2.5 mg
- Insert the catheter 4 cm (5 cm for CD or morbidly obese & change her position before taping)
- Use the lowest concentration LA (with fentanyl) that works (10-20 mL) - test the epidural
Earning your money - from the comfort of home

What I want from every block -

- Continued effective epidural maintenance
- A satisfied customer

How?

1) PCEA with low conc. solutions
2) A plan to deal with side effects / events (prescribe treatment for itch ± hypotension)
3) A plan for an ineffective block (prescribe supplements; more volume - more drug - new drug - review)
## Instrumental delivery

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Low Concentration</th>
<th>High Concentration</th>
<th>Odds Ratio M-H, Random, 95% CI</th>
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<tr>
<td></td>
<td>Events</td>
<td>Total</td>
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<tr>
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<td>14</td>
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<td>James 1998</td>
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<td>Narayanan 2009</td>
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<td>Wilson 2009 (1)</td>
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<td><strong>484</strong></td>
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<tr>
<td>Test for overall effect Z = 2.16 (P = 0.03)</td>
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(1) COMET Study Group UK

## Urinary retention

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<td>Events</td>
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<td>Wilson MJA 2009 (1)</td>
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</table>

(1) COMET Study Group UK

## Instrumental delivery

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<tbody>
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<td>30</td>
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<td>Lee 2002</td>
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<tr>
<td>Narayanan 2009</td>
<td>1</td>
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<td><strong>Total (95% CI)</strong></td>
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<td><strong>852</strong></td>
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<td><strong>Total events</strong></td>
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<td>Test for overall effect Z = 3.32 (P = 0.0009)</td>
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</table>
PCEA

- high patient satisfaction
- low bupivacaine requirements
- reduced staff workload
- happy punters all round
PCEA

0.0625% bupi (or ropi 1%) + fentanyl 2-2.5 mcg/mL [clonidine 1.5 mcg/mL?]

Dual delivery?: CI or PIBs plus demands
1. CI 5 mL/h + 10 mL bolus at 20 min lockout?
2. PIB 10 mL/h + 5 mL bolus at 20 min lockout?
Despite our best intentions.........

Epidural analgesia trouble-shooting
Reviewing an inadequate epidural

Q1 What's the problem?

- It never worked well
- Initially effective, now ineffective
- Pain only in a specific location (back? one side? perineum?)
Q2 Why is it ineffective?

- Catheter problem?
- Drug spread unsatisfactory?
Problem solving: Steps 1 to 4

1) Take a pain history

2) Check the insertion details

3) Check the current catheter position

4) Check the sensory block distribution
Is the catheter still in place?

“Maybe not” - replace it

- pooling of epidural solution under dressing suggests proximal hole outside space & failure pending
- < 3 cm catheter in the space?

“Looks OK”

- any asymmetry (block or pain) warrants withdrawing the catheter 1 cm or more, to a minimum of 3 cm, before re-dosing with inadequate side dependent
Where is the sensory block?

- Too low? - more volume
- Not low enough? - more volume
- Very odd (paravertebral; subdural; scoliotic unilateral)? - replace it
- Slightly asymmetrical?
  - withdraw the catheter & give rescue
  - if still no good, make a wise decision
epidural meningo-vertebral ligaments

**Fig. 4** (1) the lamina, (2) the dura mater. The arrow pointed to the meningo-vertebral ligaments, the morphology of the meningo-vertebral ligaments various from the elongated bar to a large thick tough sheet, some as fine as silk, some as thick as pasta, some even forming a sagittal septum, distributed as cobweb-like
Rescue dosing

1) Large volume of dilute solution, especially if a low block (below T10) or new pelvic / perineal pain
   eg. 15 ml 0.125% bupivacaine + fentanyl

2) If spread OK, higher concentration or an adjunct (warn re motor block) eg. ropivacaine 0.2% and/or clonidine
   75-100 mcg (consider neostigmine 500 mcg?)

3) Re-site (use CSE) or if desperate not to
“I hear that diamonds are really, really hard. Do you have anything easier?”
Epidural top-up for a caesar (CD)  
(worth doing unless a clearly useless block)

- Check current block distribution & consider catheter withdrawal to 3 cm if time
- 'Test-dose' if unused catheter or suspicious aspiration test
- 2% lignocaine with adren (8.4% NaHCO₃ 1 mL/10mL if the commercial solution) .....or ropi 0.75%
- Tailor bolus volume & speed of injection to urgency & current block height (5-20 mL)
- Add fentanyl 50 mcg or clonidine 100 mcg?

Be patient
The failed epidural top-up - high spinal block risk

- Plan ahead (include the obstetrician & woman) - how long can we wait for a good block?
- Decide on the best alternative block
  - A dense low block? - site a low thoracic epidural and give a small initial dose (3-4 ml)
  - An asymmetric block > T10? - low-dose CSE (0.5% bupiv. 1-1.5 mL)
  - A crap block? - a spinal (2 mL) or CSE
- Position the woman with her shoulders elevated
- Check the block immediately and frequently
The man!!
Spinals for CD

- Use your best technique (sitting or lateral; your favourite (27 G!) needle)
- Don’t let the woman lean forward too much
- Use an introducer (if having trouble - an epidural needle!)
- Scan the back if you need to!
Use an ED$_{99}$ dose of 0.5% bupiv. (2.2-2.5 mL) with opioid

Ginosar Y et al Anesthesiology 2004
Spinals for CD

- Add fentanyl (10-15 mcg)
- Discuss postop IT morphine 50-200 mcg
- Use posture to manipulate spread
  - limit cephalad spread - keep well propped up
  - increase cephalad spread - legs up or head down
Spinals for CD

- If you want a long surgical block, add clonidine 60 mcg & have the obstetrician ready to start!

Paech MJ et al Anesth Analg 2004
...and if all else fails
Pick the city

Many thanks &

welcome to

Perth anytime