Audit of analgesic effects in 26 consecutive cases undergoing total knee arthroplasty

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Introduction

We have described the anatomy and proprioceptive effects of a new Motor Sparing Knee (MSK) block. This approach may facilitate mobilisation and provide analgesia after primary total knee arthroplasty (TKA), which may be advantageous over Femoral and Sciatic Nerve Block. The analgesic effects have been audited in 26 consecutive patients undergoing TKA.

Methods

- 26 patients undergoing primary TKA received routine MSK Block after GA or Spinal anaesthetic.
- Patients received either GA with Fentanyl/Propofol/Sevoflurane or Spinal with heavy Bupivacaine 0.5 % 2-3 ml as per patient preference.
- MSK Block consisting of:
  - Cut nerves using a total of 25 ml 0.75 % Levobupivacaine
  - Intraoperatively Paracetamol, NSAIDS if tolerated and Morphine was given as required.
  - In recovery Morphine was used as clinically indicated. A rescue femoral block and catheter was inserted if pain levels were felt to be inadequate.
  - Postoperatively regular Paracetamol, NSAIDS if tolerated was prescribed, with Oramorph and/or Tramadol as required.
  - Pain levels (0-3 scale) and opioid requirements were collected over 24 hours.
  - At the same time data was collected for patients undergoing TKA having Femoral +/- Sciatic Nerve blocks (NB, n = 10) and patients having enhanced recovery protocol (ERAS) without nerve blocks (n = 13).
  - Postoperative analgesia requirements were calculated for oral morphine equivalence.

Results

<table>
<thead>
<tr>
<th></th>
<th>age</th>
<th>weight</th>
<th>GA</th>
<th>Spinal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>66.5(53-71)</td>
<td>93 kg (75-125)</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>71.8(48-86)</td>
<td>61 kg (50-85)</td>
<td>12</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 1 shows basic demographics, Fig 1-2 show average pain scores (0 = no pain, 1 = mild pain, 2 = moderate pain, 3 = severe pain) of MSK, ERAS and NB groups.

Discussion

- Average pain scores were comparable between all groups in recovery.
- 2 patients received femoral catheters in recovery on clinical assessment (1 with severe pain, 1 with moderate pain).
- Over 24 hours 75 % of MSK patients had no or mild pain, 61 % in ERAS and 40 % in NB group.
- No MSK patient had severe pain, compared to 24 % of ERAS and 30 % of NB patients.
- 24 hour Morphone consumption was similar between MSK and ERAS patients, but lower in the MSK group for intraoperative and recovery requirements.

Conclusion

This data suggests that MSK Block may be an effective new regional anaesthesia technique to provide good analgesia after knee surgery. A formal study is required to compare MSK block with ERAS protocol and femoral nerve block techniques.