Postoperative pain control using Fentanyl Patch after Foot and Ankle Operation under Ultrasound-guided regional nerve block

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Chan Kang

My disclosure is in the Final AOFAS Program Book. I have no potential conflicts with this presentation.
Introduction

Anesthesia for foot, ankle & lower leg surgery

- General anesthesia
- Spinal anesthesia
- Regional nerve block
Introduction

General anesthesia
- Expensive cost
- Postoperative pain
- Nausea, vomiting
- Pneumonia

Spinal anesthesia
- Headache
- Absolute bed rest for 8 hours
- Voiding difficulty

→ Post anesthetic complication

Regional nerve block under ultrasound-guide for surgery
- Don’t worry about them!
- Don’t need NPO time
- No postoperative pain!
Introduction

Fentanyl patch (Durogesics, Janssen)

- Highest blood concentration 12~24 hours after its first appliance, and maintains it level for 72 hours
- If the fentanyl patch is applied just after the surgery, the pain control effect expected to be maximized.
To study

*Is fentanyl patch after operation under ultrasound guided femorosciatic nerve block could be effective postoperative pain control methods?*
Materials and methods

- 336 cases

- Foot, ankle & lower leg surgery

- Exclusion criteria
  - History of psychiatric problem
  - Severe discomfort or fear of needle injection

- Nerve block for anesthesia
  - 1% Lidocaine : 0.75% Ropivacaine = 1 : 1
  - Selective nerve block: FSNB or SNB

- Sedative or anxiolytic,
  - IM injection of Midazolam

- Postop pain control
  - Fentanyl patch (Durogesics, 25μg/h, Janssen)
Materials and methods

Assigned to 1 of 2 groups

- 2011.7~2011.10
  - Group A (104 cases)

- 2011.10~2012.5
  - Group B (232 cases)
Materials and methods

Nerve block site

• Femoral nerve block
  • Femoral triangle of Inguinal area
  • Just lateral to femoral artery

• Sciatic nerve block
  • 30~45° hip flexion
  • Proximal to popliteal fossa where tibial nerve and common fibular nerve converge
Materials and methods

Evaluation

- Nerve block site and dosage
- Onset time after nerve block
- Duration of anesthetic effect
- Parenteral administration of analgesics
- VAS pain score on postoperative hour 6, 12, 24, 48
- Complication due to use of fentanyl patch and midazolam
- Patient’s preference of fentanyl patch
**Results**

**Additional IV or IM analgesic injection**
- Group A: 49 cases (47.1%)
- Group B: 113 cases (48.7%)

**Average postoperative pain score (VAS)**

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6hr</td>
<td>1.51</td>
<td>1.39</td>
<td>0.408 (&gt;0.005)</td>
</tr>
<tr>
<td>12hr</td>
<td>2.95</td>
<td>2.19</td>
<td>0.002 (&lt;0.005)</td>
</tr>
<tr>
<td>24hr</td>
<td>2.40</td>
<td>1.70</td>
<td>0.001 (&lt;0.005)</td>
</tr>
<tr>
<td>48hr</td>
<td>1.15</td>
<td>0.99</td>
<td>0.254 (&gt;0.005)</td>
</tr>
</tbody>
</table>

*The difference is significant*(p<0.05).*
Results

Preference of using fentanyl patch for next surgery
- Group A: 82 cases (78.8%)
- Group B: 212 cases (90.5%)

No complications such as respiratory failure, hypotension, and bradycardia.
Conclusion

Postoperative pain control using fentanyl patch + USG – NB after foot, ankle & lower leg operation

• Long duration of pain control effect!
• Convenient use!

• Pain control effect was increased by shortening the gap between the time the nerve block loses its effect and when the fentanyl patch exerts its maximum effect!

• Less complication (Nausea & Vomitting)!

• High patient’s preference!
Conclusion

Attachment of fentanyl patch in foot and ankle surgery under Ultrasound-guided regional nerve block is effective pain control method !!!
References


