“Wide-Awake” Foot and Ankle Surgery: A Retrospective Analysis

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NO CONFLICT TO DISCLOSE

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My disclosure is in the Final AOFAS Mobile App.

I have no potential conflicts with this presentation.
The “Wide-Awake” Approach

The “wide-awake” approach to orthopaedic foot and ankle surgery:
• Adapted from wide-awake hand surgery.¹ ³
• Patient anesthesia achieved with a surgeon-administered local anesthetic.
• Epinephrine provides vasoconstriction and hemostasis at the operative site.
• No tourniquet. No sedation. No regional or general anesthesia.
• The patient is fully conscious during the operation.
### Local Anesthetic Mixture

<table>
<thead>
<tr>
<th>Procedure Type</th>
<th>Sample Case</th>
<th>Saline Bag Size</th>
<th>Local Anesthesia Dosage</th>
<th>Sodium Bicarb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Hammer toe correction</td>
<td>50cc</td>
<td>Lidocaine 1% + 1:100 000 epi – 10mL Bupivacaine 0.25% (no additive) – 5mL</td>
<td>1.5mL</td>
</tr>
<tr>
<td></td>
<td>Hallux valgus procedure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>First MTP fusion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>Hoffmann procedure (RA)</td>
<td>100cc</td>
<td>Lidocaine 1% + 1:100 000 epi – 15mL Bupivacaine 0.25% (no additive) – 10mL</td>
<td>2.5mL</td>
</tr>
<tr>
<td></td>
<td>Talonavicular fusion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Midfoot fusion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large</td>
<td>Ankle fracture ORIF</td>
<td>2 x 100cc</td>
<td>Lidocaine 1% + 1:100 000 epi – 30mL Bupivacaine 0.25% (no additive) – 10mL</td>
<td>4mL</td>
</tr>
<tr>
<td></td>
<td>Bridle procedure</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Retrospective Patient Survey: Method

Patient pain, anxiety, and satisfaction assessed via mail 2-14 months postop ($M = 193.11$ days, $SD = 100.52$)

90% response rate (27 of 30 patients)

Mean age = 57 years $SD = 13$, range = 27-77
Retrospective Patient Survey: Method

Procedures performed:

* 3 patients receiving hindfoot hardware removal were statistical outliers (data presented in Conclusion).
Retrospective Patient Survey: Results

**Patient Pain (0-10)**

- Preop
- Intraop
- Postop (Recovery)

$F(2, 46) = 30.11, p < .001, \eta^2_p = .57$

**Patient Anxiety (0-10)**

- Preop
- Intraop
- Postop

$F(2, 46) = 6.06, p = .005, \eta^2_p = .21$
Retrospective Patient Survey: Results

Future anesthetic preference?

- Wide-Awake: 87%
- Sedation: 83%
- Asleep: 88%

χ² (1, N = 23) = 12.57, p < .001

Was wide-awake surgery better than expectations?

- Better: 83%
- The Same: 83%
- Worse: 88%

χ² (1, N = 24) = 10.67, p = .001

Would you recommend wide-awake surgery?

- Yes: 88%
- Unsure: 83%
- No: 87%

χ² (1, N = 24) = 13.50, p < .001
Concluding Points

1. Wide-awake patients report **little pain and anxiety**, and **high levels of operative satisfaction**. Replicates feedback from wide-awake hand surgery.¹⁻⁶
   - **Cost and safety benefits**, and a valuable opportunity to **interact with an unsedated patient**.

2. Three patients undergoing **hindfoot hardware removal** were statistical outliers.
   - Reported greater intraoperative anxiety ($M = 5.67$) and pain ($M = 7.33$).
   - Scar tissue from previous trauma and surgery likely prevented diffusion of anesthetic mixture.

3. Epinephrine not recommended in patients with **PVD** or **poorly controlled type 2 diabetes**.
   - **Avoid epinephrine in these cases** and re-dose the local anesthetic to 4.5 mg/kg (2mg/lb).
   - If necessary, **phentolamine rescue** will reverse the effects of epinephrine vasoconstriction.
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