Radio-clinical COMPARATIVE evaluation of distal radius fractures osteosynthesis by volar locked plate under WALANT

R. DUKAN, E. KRIEF, Q. DAFFOS, R. NIZARD
Disclosures

I, Ruben DUKAN, DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of Radio-clinical COMPARATIVE evaluation of distal radius fractures osteosynthesis by anterior locked plate under WALANT
Wide Awake Local Anesthesia No Tourniquet

- Described by Donald Lalonde
- Use in multiple hand surgery procedures
- Clearly defined and validated protocol

ADVANTAGES (Steiner et al, 2018)
- Ambulatory Care
- Intraoperative testing
- Fast recovery
- Saving time
- Reduction in public spending
TECHNIC

Anesthetic procedure:

- **15 injection points** are marked: 5 anterior, 5 radial, 5 posterior.
- Needle is held at 90° with **both hands** (*Pires et al, 2017*)
- Test the piston before each injection

**PREPARATION**

- Lidocaine Epinephrine 1 % 0,005 mg/ml
  - (50 cc) (**toxic dose 7mg/kg**)  
- NaCl 0.9 % (50 cc)
- Sodium bicarbonate 8.4 % (8 cc)
TECHNIC

YELLOWSIGN : sign of vasoconstriction
TECHNIC

Henry's approach, exposure of the fracture site

Anatomic reduction and positioning of the locked plate (NewClip)
OBJECTIVE

- Feasibility of WALANT for the osteosynthesis of distal radius fractures

- Clinical radio evaluation WALANT vs LRA (6 weeks, 3 months, 6 months)

Matched prospective comparative study (2:1)

Systematic free and informed consent
POPULATION

Inclusion criteria

- Age between 18-65 years old
- No anticoagulant treatment
- Closed fracture without sensory-motor deficit

Matching: age - sex - dominant side - manual worker
# POPULATION

<table>
<thead>
<tr>
<th></th>
<th>WALANT Group</th>
<th>LRA Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=15</td>
<td>n=30</td>
</tr>
<tr>
<td>Age (years)</td>
<td>53.4 (± 4.2)</td>
<td>55.2 (± 7.4)</td>
</tr>
<tr>
<td>Sex Ratio (M/F)</td>
<td>2.7 (11/4)</td>
<td>1.7 (19/11)</td>
</tr>
<tr>
<td>Manual worker (%)</td>
<td>9 (60%)</td>
<td>21 (70%)</td>
</tr>
<tr>
<td>Dominant side (%)</td>
<td>12 (80%)</td>
<td>23 (76%)</td>
</tr>
<tr>
<td>Fracture type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Posterior displacement</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>• Joint splitting (%)</td>
<td>12 (80%)</td>
<td>20 (66%)</td>
</tr>
</tbody>
</table>
## RESULTS

<table>
<thead>
<tr>
<th>VAS</th>
<th>WALANT</th>
<th>LRA</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Anesthetic procedure</td>
<td>• 0.4 (± 0.1)</td>
<td>• 0.3 (± 0.1)</td>
</tr>
<tr>
<td>• Surgical procedure</td>
<td>• 0</td>
<td>• 0</td>
</tr>
</tbody>
</table>

- VAS = 2 in 3 patients during the reduction manoeuvre
- VAS = 3 dorsally in 2 patients when the most ulnar distal screw was placed
- VAS = 4 dorsally in 2 patients when drilling the distal screws => addition of anesthetic product
RESULTS

ROM superior in the WALANT group at 6 weeks and 3 months, p<0.05

Earliest return to work in the WALANT group 14.8 days vs 34.6 days, p<0.05

No complications during WALANT procedures
DISCUSSION

• First matched comparative prospective study

• Previous publications: cases series … Orbach; Ahmad; Huang

• Improving the WALANT experience

  • Patient feels all the gestures
  
  • Psychological preparation in advance
  
  • Pre-medication in the morning
  
  • Use of additional relaxation methods: Hypnosis? VR? (Chan et al, 2017)
LIMITS

- Limited number of patients
- No randomization
- Strict selection process
CONCLUSION

• **WALANT** => Interesting anesthetic alternative!

• Keywords: **Protocol - Team Cohesion**

• **Improved and earlier** results than under LRA

• **KNOW HOW TO LIMIT ONESELF ++++**
  
  • Comminuted joint fracture / "die punch" fracture
  
  • Fractures extended beyond one third of the length of the radius.