Satisfaction analysis of Figure 8 (open heel) short leg cast

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Disclosure

No conflict to disclosure

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Out disclosures are in the Final AOFAS Mobile App.
We have no potential conflicts with this presentation.
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• Cast
  – Circumferential immobilizer
  – Superior immobilization than splint
  – However, more complication than splint
    • Pressure sore
      – M/C cause: poor cast application
    • Nerve damage
      – Signs of nerve damage
        » Loss of power, tingling and numbness
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• Complication of plaster cast, as pressure sore, and discomfort
  – can be reduced by heel opening

• To evaluate
  – The results of Figure 8 cast (Heel open short leg cast) in foot & ankle disease and trauma
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- 508 cases of ankle disease & trauma
  - Nov. 2014 ~ Jan. 2017
  - Male 287, Female 221
  - Mean age: 39.9 (8~88)
  - Retrospective study

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot &amp; ankle fracture</td>
<td>236</td>
</tr>
<tr>
<td>Chronic ankle instability</td>
<td>92</td>
</tr>
<tr>
<td>Distal tibia fracture</td>
<td>48</td>
</tr>
<tr>
<td>Ankle &amp; subtalar fusion</td>
<td>20</td>
</tr>
<tr>
<td>Ankle sprain</td>
<td>10</td>
</tr>
<tr>
<td>Osteochondral lesion of talus</td>
<td>13</td>
</tr>
<tr>
<td>Accessory navicular syndrome</td>
<td>15</td>
</tr>
<tr>
<td>Recurrent peroneus subluxation</td>
<td>5</td>
</tr>
<tr>
<td>Achilles tendon rupture</td>
<td>35</td>
</tr>
<tr>
<td>Lateral malleolus bursitis</td>
<td>12</td>
</tr>
<tr>
<td>Foot deformity</td>
<td>10</td>
</tr>
<tr>
<td>Total ankle arthroplasty</td>
<td>3</td>
</tr>
<tr>
<td>Extensor tendon repair</td>
<td>9</td>
</tr>
</tbody>
</table>
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• Technique
  – C-type
  • Foot surface
    – Cover from mid portion of medial longitudinal arch to metatarsal head
  • Calf portion
    – Cover from medial & lateral malleolus protrusion area to half of the lower leg
    – Expose heel and distal portion of achilles tendon
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• Technique
  – K-type
  • Indication
    – Pilon fracture, Lateral malleolar fracture, Posterior malleolar fracture
  • Calf portion
    – Cover from distal portion of achilles tendon to half of the lower leg
    – Expose heel
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- **Methods**
  - **Stability evaluation**
    - Active ankle dorsiflexion & plantarflexion
    - Passive foot inversion & eversion
    - Passive foot internal & external rotation
  - **Clinical evaluation**
    - VAS discomfort score
      - Compared with short leg splint (10)
    - Reselection of heel open cast
Results

- Stability evaluation

<table>
<thead>
<tr>
<th>Active ankle dorsiflexion</th>
<th>Within 5 degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active ankle plantarflexion</td>
<td>Within 5 degrees</td>
</tr>
<tr>
<td>Passive foot inversion &amp; eversion</td>
<td>Within 5 degrees</td>
</tr>
<tr>
<td>Passive foot internal &amp; external rotation</td>
<td>0 degrees</td>
</tr>
</tbody>
</table>

- Especially, 44 cases of foot & ankle fractures
  - Conservative therapy in heel open cast
  - Maintained the stability and achieved bone union in radiology
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• Results
  – Clinical evaluation
    | VAS discomfort score | 2.9 (0~6) |
    | Reselection of heel open cast | All cases |
  – All of the cases maintain the stability
    • No complication including skin & soft tissue damage
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Discussion

- Figure 8 cast (Heel open short leg cast)
  - Less discomfort than conventional short leg cast
  - Less complication rates than conventional short leg cast
  - Accomplishment of ankle stability
  - Early weight bearing with heel stroke

- In further long-term comparative studies with a larger sample size
  - The usefulness of the heel open short leg cast may be confirmed
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References