New Complication of Ankle Arthroscopy using a Noninvasive Distraction Method

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Our disclosure is in the Final AOFAS Program Book. We have no potential conflicts with this presentation.
INTRODUCTION

• A non-invasive distraction is usually required for the successful ankle arthroscopy.

• Several studies investigated the complications of ankle arthroscopy; the nerve injuries were the most common.

• We have been performed ankle arthroscopy for various ankle disorders, and have found a new complication that has not been reported in the literature.
PURPOSE

• To retrospectively review the complications associated with a non-invasive distraction technique for ankle arthroscopy.
### Demographics
March, 2003 ~ Feb., 2011
514 cases (M:F = 388:126)
Age: 12−73Y (mean 37.2Y)
F/U: 12−67M (mean 33M)

### Clinical Assessment
- Diagnosis
- Type of AS procedure
- Duration of AS procedure
- AS-related complication
## RESULTS

### Diagnosis

<table>
<thead>
<tr>
<th>Condition</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osteochondral lesion of talus</td>
<td>151</td>
</tr>
<tr>
<td>Chronic ankle instability</td>
<td>137</td>
</tr>
<tr>
<td>AL soft tissue impingement synd.</td>
<td>118</td>
</tr>
<tr>
<td>Ant. bony impingement synd.</td>
<td>107</td>
</tr>
<tr>
<td>Osteoarthritis of the ankle</td>
<td>81</td>
</tr>
<tr>
<td>Posttraumatic arthrodipiosis</td>
<td>27</td>
</tr>
<tr>
<td>Others</td>
<td>37</td>
</tr>
</tbody>
</table>

### AS procedure

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS synovectomy</td>
<td>382</td>
</tr>
<tr>
<td>Osteochondral procedure</td>
<td>177</td>
</tr>
<tr>
<td>(curettage &amp; microfracture)</td>
<td></td>
</tr>
<tr>
<td>Bony spur excision</td>
<td>151</td>
</tr>
<tr>
<td>Loose body removal</td>
<td>87</td>
</tr>
<tr>
<td>Medial gutter debridement</td>
<td>68</td>
</tr>
<tr>
<td>AS arthrodiposis</td>
<td>27</td>
</tr>
<tr>
<td>Others</td>
<td>49</td>
</tr>
</tbody>
</table>

**Duration of AS procedure:** 15–117 min. (mean 47 min.)
RESULTS

Complications (14/514 cases, 2.7%)

• 8 cases of nerve injury: SPN (6), DPN (1), Sural n. (1)
  - 1 SPN injury was not improved until PO 1Y.
• 3 cases of skin necrosis of posterior thigh
  - STSG was performed for 1 case.
• 2 cases of instrument breakage
• 1 case of tendon injury
DISCUSSION

• Dowdy (AS, 1996): Up to 135N of distraction can be applied for up to 1 hour. (>1 mm ↑ jt. space)
• Young (JBJS-A, 2011): 6.8% complication in 294 cases

Our study

• AS procedures for 514 cases with a complication in 2.7%
• New complication: skin necrosis of post. thigh in 3 cases
  - Tourniquet time < 100 min in all 3 cases.
  - However AS time + tourniquet time > 120 min due to concurrent open procedure (Calcaneal osteotomy, BG …)
CONCLUSION

• A noninvasive distraction technique is safe and effective for ankle arthroscopy.

• Distraction can cause high pressure on the posterior thigh. → Both the arthroscopy time and the tourniquet time should be taken into account to avoid prolonged compression and the resultant soft tissue injury.
REFERENCES

