A PRACTICAL ASSESSMENT OF ARTHROSCOPIC EVALUATION AND MANAGEMENT OF SYNDROMOTIC INJURIES

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Disclosure

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Safet O. Hatic II, DO

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Introduction

• The role of arthroscopy in the evaluation and management of ankle fractures continues to evolve.

• The focus of this cadaveric study is to evaluate a potential role for arthroscopy specifically in the evaluation and management of syndesmotic injuries of the ankle.
Hypothesis

• Arthroscopic evaluation of the syndesmosis may prove to be a useful modality in both the evaluation and management of syndesmotic injuries of the ankle with or without associated ankle fractures.
Methods and Materials

• 10 cadaveric below knee specimens independently evaluated by 2 senior authors (CFH and GCB)
• All 10 evaluated arthroscopically (Figure 1) and radiographically w/ a fluoroscan unit to establish an intact syndesmosis
• 5 specimens prepared by disrupting syndesmosis in a standardized fashion
• All 10 re-evaluated by senior authors arthroscopically to document findings w/ regard to intact or disrupted syndesmosis
• 5 specimens were then “mal-reduced” and fixated w/ a 3.5 mm fully threaded cortical screw
• Examiners evaluated specimens arthroscopically and under dynamic fluoroscan to assess reduction of syndesmosis
Figure 1

- Arthroscopy was performed under distraction
- Examiners were blinded as to whether syndesmosis was intact or disrupted by a standardized protocol
Results

Table 1

<table>
<thead>
<tr>
<th>Examiner</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intact</td>
<td>5/5</td>
<td>3/5</td>
</tr>
<tr>
<td>Disrupted</td>
<td>5/5</td>
<td>5/5</td>
</tr>
</tbody>
</table>

- The senior authors independently evaluated specimens arthroscopically.
- 8 of 10 specimens were appropriately identified with arthroscopy.
Results

- Table 2
  - Following fixation of the syndesmosis in either an anatomic or non-anatomic fashion, the senior authors used both arthroscopy and dynamic fluoroscopy to evaluate the quality of the reduction.
  - Assessment of reduction w/ fluoroscan (XR) or w/ arthroscopy

<table>
<thead>
<tr>
<th>Examiner</th>
<th>1 XR</th>
<th>1 Scope</th>
<th>2 XR</th>
<th>2 Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomic</td>
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<td>4/5</td>
<td>4/5</td>
<td>5/5</td>
</tr>
<tr>
<td>Non-anatomic</td>
<td>5/5</td>
<td>4/5</td>
<td>4/5</td>
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</table>
Discussion

• Ankle arthroscopy is more frequently being utilized in acute ankle injuries

• Arthroscopy may assist in not only the evaluation but also in the anatomic reduction of syndesmotic injuries

• This cadaveric study suggests a potential role for arthroscopy

• Further studies are needed to increase independent user reliability and more clearly define anatomic relationships confirming reduction
References

