Ankle Arthroscopy for Diagnosis and Treatment of Cartilage Lesions in the Setting of Acute Ankle Fractures

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Disclosures

- Dr. Drakos - paid consultant for Extremity Medical and Fast Form, neither of whose products are related to the current study.
- Dr. Da Cunha - no conflicts to disclose
- Sydney Karnovsky - no conflicts to disclose
- Dr. Schairer - no conflicts to disclose
- Our disclosures are in the AOFAS Mobile App. We have no potential conflicts with this presentation.
Ankle Fracture ORIF

Unexplained Poor Clinical Outcomes?

- Ankle fractures occur in 0.1-0.2% of the population every year and are one of the most common injuries orthopedic surgeons treat.

- Open reduction and internal fixation (ORIF) of displaced unstable ankle fractures generally yields good to excellent results.

- However, there are still cases where despite achieving a perfect anatomic reduction, patients report persistent pain and suboptimal clinical outcomes.

- Untreated chondral lesions may explain residual pain and poor outcomes following anatomic ORIF.

- OCLs treated non-operatively have shown poor clinical outcomes, progression in size and grade, and may lead to osteoarthritis.
Ankle Arthroscopy

The Role in Treatment of Ankle Fractures

- Chondral lesions are often occult radiographically and frequently missed.\textsuperscript{13,15}
- CT is unable to detect pure chondral lesions.\textsuperscript{13}
- MRI can detect subchondral lesions, but are less reliable at detecting pure chondral lesions.\textsuperscript{11,16,18}
- MRI is also unreliable in the acute setting.\textsuperscript{16}
- Concurrent arthroscopy allows for direct visualization for diagnosis of chondral lesions and acute treatment at the time of ankle ORIF.\textsuperscript{2,10,14,15}
To further delineate the prevalence of chondral lesions, in particular full thickness talar dome lesions, with concurrent arthroscopy in acute ankle fracture ORIF

To determine if there is a correlation between the presence of a chondral lesion and patient and fracture characteristics

In addition, we aimed to evaluate the impact on clinical outcomes to establish the role of concurrent arthroscopy in ankle fracture management
Study Design

- Retrospective study conducted from prospectively collected registry data
- All cases of acute ORIF with concurrent arthroscopy performed from 2012 to 2016 that met the inclusion and exclusion criteria were included
  - 116 patients were included
- Outcome Measures
  - Prevalence and grade of chondral lesions
  - Significance of patient and fracture characteristics associated with the presence of a chondral lesion
  - Foot and Ankle Outcome Score (FAOS)
    - Minimum 1 year follow up
Results: Prevalence of Chondral Lesions

Chondral Lesion Any Grade

- Patients With a Chondral Lesion: 78%
- Patients Without a Chondral Lesion: 22%

Full Thickness Chondral Lesion

- Not FT Chondral Lesion: 57%
- FT Chondral Lesion: 43%
Results: Associated Factors

Patients Presenting with a Chondral Lesion by Age

- Age < 30: 21% (Patients age < 30 were LESS likely to present with a chondral injury (p=0.008))
- Age 30-50: 42%
- Age > 50: 37%
Results: Associated Factors

Injury Characteristics Presenting with a Chondral Lesion

- Patients with a history of dislocation were more likely to have a chondral injury (p=0.039).
- Patients with a complete syndesmosis injury were more likely to have a chondral injury (p=0.013).
- Deltoid injury was NOT a significant factor (p=0.508).

Fracture type, by either the Lauge-Hansen or anatomic classifications, were not found to be significant factors.
Results: FAOS Clinical Outcomes

Patients with a chondral lesion had significantly lower outcome scores in ALL categories.
Conclusions

- Arthroscopy performed concomitantly with ankle ORIF is useful in diagnosing chondral injuries
- Chondral lesions are common with a large proportion being full thickness
- Increased fracture severity, as indicated by the presence of a dislocation at presentation, and a syndesmotic injury may be more likely to present with a chondral lesion and thus should raise suspicion for a potential chondral injury and prompt evaluation
- The presence of a concurrent talar chondral injury has a negative impact on clinical outcomes
- Concurrent arthroscopy allows for simultaneous diagnosis and acute treatment of chondral lesions and should be considered in the treatment of acute ankle fractures
- Further study is required to determine the clinical benefit of acute treatment of a chondral lesion at the time of fracture fixation
References