4:04 – 4:33 pm

AOFAS / AANA Session:

Symposium:

Arthroscopic Assisted Treatment of Ankle Fractures: Does it Make Sense?

Moderator:

Alastair S.E. Younger, MD
Vancouver, BC, Canada
3B (CONMED Linvatec, Small Bone Innovations, BioMimetic);
5 (BioMimetic; CONMED Linvatec; Wright Medical Technology, Inc.; Synthes;
Integra Foundation; Carticept);
9 (American Orthopaedic Foot & Ankle Society; Canadian Orthopaedic Association)

Panelists:

Beat Hintermann, MD
Liestal, Switzerland
1 (Integra);
3B (Integra);
5 (Integra)

James P. Tasto, MD
San Diego, California
1 (Arthrocare; CONMED Linvatec);
2 (Arthrocare);
3B (Arthrocare; Smith & Nephew);
4 (Cayenne, Bledsoe);
5 (Arthrocare; Smith & Nephew);
6 (Arthrocare; CONMED Linvatec, Arthrex);
8 (American Journal of Orthopedics; Orthopedics Today);
9 (Arthroscopy Association of North America; AAOS)

David B. Thordarson, MD
Los Angeles, California
1 (DePuy, A Johnson & Johnson Company);
4 (Orthohelix);
7 (Foot and Ankle International;
Wolters Kluwer Health - Lippincott Williams & Wilkins);
8 (Foot and Ankle International);
9 (American Orthopaedic Foot & Ankle Society)
Goals:
“Through panel discussion and cases, explore the current role of arthroscopy in foot and ankle fracture care”

Introduction
1. The long term outcome of ankle fractures is more related to the injury to the joint surface than the bony injury 11 28,
2. Cartilage damage is related to the Weber fracture type, and increases from A to C (likely related to the degree of energy imparted to the joint) 11 31 17 26 12 6
3. Articular lesions occur in 50 -80% of ankle fractures.
4. Medial maleolar fractures are more likely to have a loose body present than patients with deltoid ligament injury 24

5. As a result, arthroscopic assessment of the joint at the time of ORIF may result in better outcomes 27.

Open fracture treatment
Goals
Reduction of fracture fragments
Internal fixation

Problems with open reduction
1. The joint is often not visualized unless the surgeon makes a specific effort to do so.
2. If the joint surface only partially visualized, the cartilage injury or loose body may not be treated.
3. Step deformities may not be fully assessed.
4. Syndesmosis injuries may be missed.
5. Visualization of the joint with open treatment may require a longer incision and further soft tissue dissection potentially devascularizing bone.
   This may lead to nonunion and late collapse.

5. Increased dissection increases the risk of wound breakdown.

Options:
Arthroscopic reduction with percutaneous screw fixation
Arthroscopic reduction with percutaneous ring fixation 10
Arthroscopic reduction with limited open fixation

Benefits
Diagnosis and treatment of injuries not recognized on preoperative
Assessment
- Cartilage defects
- Sydesmosis instability
- Loose bodies
- Other fractures of the talus or distal tibia
- Impaction injuries – lateral and medial distal tibia

Treatment
- Removal of loose bodies
- Debridement of cartilage defects
- Assessment of reduction of the joint surface

Problems with arthroscopic reduction
Bleeding in the joint will often prevent visualization
Equipment may not be available
Dry arthroscopy can avoid these issues but the heat of the light may damage the cartilage surface
Reduction may be difficult without stripping of the soft tissues, and harder to achieve the longer the time since injury
Risk of extravasation and compartment syndrome

Indications for arthroscopy in foot and ankle after fracture:
Ankle joint
Acute
- Single, bimalleolar and trimalleolar fractures
- Talar body fractures
- Talar neck fractures
- Acute talar osteochondral injuries
- Triplane, Tillaux and growth plate fractures
- Isolated injuries to the syndesmosis without fracture
Late
- Patients with ongoing joint pain suggestive of cartilage injury or joint fibrosis

Subtalar joint
Lateral process fractures
- Allows assessment of subtalar joint at the same time as lateral process fractures are associated with posterior facet chondral and subchondral injuries
Calcaneal fractures
- Arthroscopy can assist calcaneal fracture reduction and avoid a large open incision in some fracture patterns that can be treated by minimally invasive fixation
- Late arthroscopy can be used after fracture for arthrolysis
References:


