

Arthroscopy's Role in Treating Ankle Fractures

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The role of arthroscopy in the treatment of ankle fractures is controversial. In this edition of the eNewsletter, we highlight this topic. We are fortunate to have Drs. Richard Ferkel and Mark Glazebrook present a point/counterpoint.

Ankle fractures are common general orthopaedic surgical cases, and most of us do not routinely perform arthroscopy during Open Reduction Internal Fixation (ORIF) of ankle fractures. In 2016, Kennedy et al. found that of about 32,000 ankle fractures treated with ORIF, only 313, or 1 percent, of the cases underwent an accompanying arthroscopy procedure.¹ Yet, we know from published research that it is common for ankle fracture patients to have concomitant intra-articular injury. In a systematic review by Chen et al. of 861 patients in whom arthroscopy was performed at the time of Arthroscopy-assisted ORIF (AORIF), 63 percent had chondral lesions, 61 percent had deltoid ligament injuries and 78 percent had tibiofibular syndesmotic injuries.²

It has been reported that 20 percent of patients with ORIF of ankle fractures fail to achieve optimum clinical outcomes despite radiographic evidence of anatomic reduction.³ In addition, ankle fractures are the greatest cause of osteoarthritis in ankles. Is there something that can be done at the time of initial surgery to help diagnose, predict, treat or prevent this and help prognosticate for patients?

The addition of arthroscopy at the time of ORIF has the potential to improve outcomes with minimal increased risk. This would include the diagnosis and treatment of osteochondral lesions with debridement, microfracture, loose body removal and joint lavage, which may modify the intra-articular milieu of cytokines and other potentially chondrotoxic molecules. In addition, the deltoid ligament can be evaluated and the medial gutter cleared, assessing for potential block to reduction and/or repair.⁴ Also, a more accurate diagnosis and treatment of syndesmotic injury by direct arthroscopic visualization is a benefit that has been shown to be more accurate than an X-ray. Other potential benefits include medial malleolar arthroscopic assisted reduction and percutaneous screw fixation; diagnosis and treatment of posterior malleolus fractures; and synovitis and impingement debridement.⁴

Arthroscopy is not a completely innocuous procedure and does carry some risks with it including nerve injuries, most commonly the superficial peroneal nerve, tendon damage, cartilage injury, sinus tract formation and even compartment syndrome and DVT. On average these risks are low, ranging from 3.4-9 percent overall.⁵ There is also some learning curve to the technique in becoming proficient with portal placement and joint preparation. Ideally, arthroscopy time is minimized to decrease risk for fluid extravasation, traction related injury and curtail tourniquet time.

Although arthroscopy would seem like a valuable tool to identify and treat intra-articular lesions, the available literature has not, to date, shown that AORIF is superior of ORIF alone. It is possible that both groups do well in the relative short term, but what about 10-15 years out from injury? Are there specific subgroups of patients with ankle fractures who will benefit from AORIF more than others? This durable, potential benefit of concomitant arthroscopy has yet to be investigated and may shed light on the long-term benefits of AORIF. Arthroscopic-assisted treatment of ankle fractures is a field ripe for additional comparative study.

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