Second-Look Arthroscopic Findings and Clinical Outcomes After Management of Intra-Articular Lesions in Acute Ankle Fractures with Arthroscopy

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Introduction/Purpose: Anatomically successful surgical reduction of ankle fractures does not always result in a clinically favorable outcome. The purpose of the present study was to compare initial and second-look arthroscopic finding of acute ankle fracture and to evaluate clinical outcomes.

Methods: A total of 39 patients (40 ankles, 20 male, 20 female) who underwent surgery for ankle fracture between March 2009 and August 2016 were retrospectively reviewed. All patients gave consent to the exploratory arthroscopic surgery for the removal of internal fixation devices placed in the initial surgery. Intra-articular lesions (osteochondral lesion, loose body, injury of ligaments and fibrosis) were evaluated via ankle arthroscopy. Arthroscopic finding of osteochondral lesion were classified using the Ferkel and Cheng staging system, and cartilage repair was assessed using the international Cartilage Repair System (ICRS). Clinical outcomes were evaluated using the American Orthopaedic Foot and Ankle Society (AOFAS) ankle-hindfoot scale and Visual Analogue Scale (VAS).

Results: Chondral lesions were found in 26 ankles (65%) with initial arthroscopic finding of acute ankle fracture. Newly discovered chondral lesions in second-look arthroscopy was 15 cases. According to the Ferkel and Cheng staging at second-look arthroscopy, 4 of 23 ankles with chondral lesions of talus was getting worse (more than stage D). In terms of ICRS overall repair grades, 4 ankle (15%) were abnormal (grade III). Diffuse synovitis and arthrofibrosis were found in 12 and 7 ankles respectively in second-look arthroscopy. Correlation were found between AOFAS scores, VAS and intra-articular lesions with second-look arthroscopy.

Conclusion: Second-look arthroscopic examination combined with treatment of intra-articular lesion arising from ankle fracture surgery may consider to improve clinical outcomes.

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