Outcomes Following Early Weightbearing in Syndesmotic Injuries: A Randomized Controlled Trial

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Purpose: Syndesmotic injuries occur in 10% of ankle fractures. Restoration and maintenance of the distal tibiofibular stability is crucial. The literature regarding time to weightbearing is scarce, with the majority recommending greater than 6 weeks of non-weightbearing. No studies examine whether early weightbearing as tolerated is safe in syndesmotic injuries, and current early weightbearing studies after ankle fractures typically exclude syndesmotic injuries. The purpose of this randomized controlled trial is to measure differences between early weightbearing at 2 weeks and delayed weightbearing at 6 weeks in terms of outcomes, hardware failure, and loss of reduction at 1 year.

Methods: All rotational ankle fractures in patients over 18 years were enrolled preoperatively. Only those who received syndesmotic fixation were randomized postoperatively to early vs delayed weightbearing. No fracture types were excluded. All syndesmotic fixation utilized suture buttons. A total of 39 patients were enrolled.

Primary outcome was maintenance of reduction at 1 year comparing postoperative and 1-year CT scan of both ankles. Secondary outcomes included pain scores, surgical experience (Surgical Satisfaction Questionnaire [SSQ-8]), American Academy of Orthopaedic Surgeons foot and ankle questionnaire, range of motion, and complications. Data were analyzed using unpaired t-test and Fisher exact test. Statistical significance was set at $P<0.05$.

Results: 16 patients were randomized to early weightbearing and 23 patients to delayed. The early weightbearing group had a significantly higher pain score (4.69 ± 2.84 vs 2.87 ± 2.31, P = 0.039) at the baseline 2-week visit. At 1 year, dorsiflexion in the early weightbearing group was significantly higher (14.2° ± 3.97° vs 7.71° ± 4.46°) than the delayed group (P = 0.017). There was no significant difference in syndesmotic malreduction, loss of reduction, pain scores, patient-reported outcomes, development of arthritis, or complication rates at any other time point.

Conclusion: Early weightbearing is safe following syndesmotic fixation in ankle fractures, at least in those receiving suture button fixation.