Outcomes Following Early Weight Bearing in Syndesmotic Injuries: A Randomized Controlled Trial

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INTRODUCTION:
Background: Syndesmotic injuries occur in 10% of ankle fractures. Restoration and maintenance of the distal tibiofibular stability is crucial. The literature regarding time to weight bearing is scarce, with the majority recommending greater than 6 weeks of non-weight bearing. No studies examine whether early weight bearing as tolerated is safe in syndesmotic injuries, and current early weight bearing studies after ankle fractures typically exclude syndesmotic injuries.
Purpose: The purpose of this randomized controlled trial is to measure differences between early weight bearing at 2 weeks and delayed weight bearing 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 were enrolled preoperatively. Only those who received syndesmotic fixation were randomized post-operatively to early vs delayed weight bearing. 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 post-operative and 1 year CT scan of both ankles. Secondary outcomes included pain scores, surgical experience (SSQ-8), AAOS Foot and Ankle, range of motion, and complications. Data was analyzed using unpaired t-test and Fishers exact. Statistical significance was set at $p < 0.05$.
RESULTS: 16 patients were randomized to early weight bearing and 23 patients to delayed. The early weight bearing 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 weight bearing group was significantly higher ($14.2° \pm 3.97°$ vs $7.71° \pm 4.46°$) than the delayed group ($p = 0.017$). There was no significant difference in syndesmotic malreduction, loss of reduction, pain scores, PROs, development of arthritis or complication rates at any other timepoint.
DISCUSSION AND CONCLUSION: Early weight bearing is safe following syndesmotic fixation in ankle fractures, at least in those receiving suture button fixation.