

Splint versus no splint after ankle fracture fixation; Results from the multi-centre post-operative ankle splint trial (PAST)

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INTRODUCTION: There is considerable variation in the rehabilitation of ankle fractures. Ankle fractures treated surgically are often immobilized or splinted in the early post-operative period, despite the lack of robust evidence supporting this intervention. Thus, this randomized controlled trial aims to investigate the anecdote that splinting reduces pain and oedema

METHODS:

A prospective multi-centre randomized controlled trial was performed in three trauma centres. Eligible patients were over 18 years of age that have sustained an isolated unilateral ankle fracture requiring surgical intervention. Patients were randomized to two groups receiving either; a plaster of Paris posterior back-slab or compressive bandage dressing. The post-operative rehabilitation protocol was standardized across both groups. Baseline demographics and fracture characteristics and classifications were analysed. Primary outcomes included oedema measured by the figure-of-eight-20 technique and pain at multiple time points. Secondary outcomes included; the American Orthopaedic Foot and Ankle Society score, satisfaction, unplanned emergency room (ER) visits and complications

RESULTS:

A total of 104 comparable participants were included; 54 in the non-splint group and 50 in the splint group. There was no significance difference in ankle oedema, ankle oedema compared to contralateral ankle and pain scores between the two groups ($P = 0.56$, $P = 0.25$, $P = 0.39$ respectively). Patient satisfaction was higher in the early postoperative period in the non-splint group ($P = 0.016$). The American Orthopaedic Foot and Ankle Society score was not significantly different across any time point ($P = 0.534$). In the splint group, there was a 46% rate of splint-related complaints and complications. Unplanned Emergency Room visits occurred in 46% of the splint group and 7.4% of the non-splint group ($P < 0.001$). There were 2 wound infections, 1 non-union and 1 deep vein thrombosis in the splint group. There was 1 wound infection and 1 deep vein thrombosis in the no-splint group ($P = 0.481$)

DISCUSSION AND CONCLUSION:

The routine use of a splint does not add any perceivable benefit to the postoperative course of an ankle fracture fixation, particularly in the reduction of oedema and postoperative pain. Another key finding is that the absence of a splint does not appear to result in higher complication rates, instead leads to higher unplanned ER visits and lower early satisfaction rates