

Early Weightbearing After Acetabular Fracture Fixation is Not Associated with Increased Fracture Displacement or Conversion to Total Hip Arthroplasty

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Purpose: Our objective was to determine the association between compliance with weight-bearing restrictions (WBRs) and fracture displacement after surgical fixation of acetabular fractures. We hypothesized that early weightbearing would not be associated with increased fracture displacement or conversion to total hip arthroplasty.

Methods: This study includes a consecutive series of patients that presented to a single Level I trauma center for surgical fixation of an acetabular fracture. Patients were excluded if they had follow-up of <3 months. The primary outcome was postoperative displacement of residual fracture gap and articular step-off measured as the difference between immediate postoperative and final radiographs. A single, blinded observer recorded maximal and step displacement using immediate postoperative and final follow up AP and Judet plain radiographs. A difference of ≥ 5 mm and ≥ 2 mm for fracture gap and articular step-off, respectively, was considered significant displacement. The secondary outcome was frequency of conversion to total hip arthroplasty (THA). Compliance with WBRs was determined from review of medical records as documented in follow-up progress notes. Chi-squared analysis and Fisher's exact test were performed to compare frequencies among compliant and non-compliant patients.

Results: We report on 352 acetabular fractures from 347 consecutive patients. 72 patients (20.8%) were non-compliant with WBRs. The average time to weightbearing as tolerated (WBAT) was 10 ± 2 weeks for compliant patients, and 5 ± 3 weeks for non-compliant patients ($P < 0.001$). No patient in the non-compliant group had fracture gap displacement ($n = 0/72$) compared to 2 patients in the compliant group (0.7%, $n = 2/280$) ($P = 0.472$). There was also no difference in articular step-off displacement between compliant (6.8%, $n = 19/275$) and non-compliant patients (4.2%, $n = 3/72$) ($P = 0.587$). Of the 352 fractures, 14 (4%) underwent conversion to THA. Non-compliant patients did not have significantly higher rates of conversion (2.8%, $n = 2/72$) compared to compliant patients (4.3%, $n = 12/272$) ($P = 0.743$).

Conclusion: This study demonstrates that for patients with surgically treated acetabular fractures, non-compliance with WBRs and early WBAT was not associated with fracture displacement or need for THA. These data suggest early weightbearing protocols may be safe for patients after surgical treatment of acetabular fractures.