

Post-Mobilization Plain Radiography After LC-1 Pelvic Ring Injury Does Not Affect Treatment

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Purpose: Treatment for lateral compression type 1 (LC-1) pelvic ring injuries has been debated. Further, the utility of post-mobilization plain radiographs in treatment decision-making has not been substantiated. Some studies have demonstrated that immediate weightbearing of minimally displaced nonoperative pelvic ring injuries does not result in additional displacement. Some of the detriments of obtaining unnecessary imaging include added expense to the patient and health-care system and unnecessary radiation exposure to the patient and providers. This study describes treatment of LC-1 pelvic ring injuries and displacement on plain radiography. We hypothesized that post-mobilization plain radiographs would not influence treatment.

Methods: 409 adult patients with LC-1 pelvic ring injuries were treated from 2015 to 2019 at a single trauma center. Of this cohort, 178 patients were randomly selected for further chart review, and 156 with complete records were included. Charts and radiographs were reviewed, including type and timing of radiographs and measurements of displacement within the anterior and posterior ring for the first 6 weeks following injury.

Results: Of the 156 patients reviewed, 98 (62.8%) were female and mean age was 60.1 years. The average number of plain radiographs taken for nonoperative patients on presentation and during admission was 1.9. The most common mechanisms of injury were high-energy fall, fall from standing height, motor vehicle collision, and pedestrian struck. 103 patients (66.0%) had an initial displacement <5 mm, 8 (7.8%) of whom were treated surgically; 42 patients (26.9%) had an initial displacement between 5 and 10 mm, with 5 (11.9%) treated surgically; and 11 patients (7.0%) had an initial displacement >10 mm, with 2 (18.2%) treated surgically. Overall, 15 patients were treated surgically (9.6%). None of the patients who received post-mobilization plain radiographs (n = 33) had any change in clinical plan afterward. All those patients continued with planned nonoperative care. Additionally, 37 patients (26.2% of all patients) had a change in alignment of their fracture within the weeks following injury, 32 (86.5%) of whom had a change <5 mm, and 8 with displacement of 5 to 10 mm.

Conclusion: Patients who presented with an LC-1 fracture demonstrated no changes in plan of care after receiving post-mobilization radiographs, suggesting that these radiographs are not significantly impacting patient care or outcomes. Additionally, the majority of LC-1 injuries were not surgical, and the degree of displacement during the weeks following injury did not influence treatment.