

The Ability to Perform an Active Straight Leg Raise May Screen to Conservatively Treat Minimally Displaced Pelvic Fractures

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Purpose: The ideal treatment for minimally displaced pelvic fractures is evolving. Early surgical treatment may improve acute pain, decrease time to mobilization, and decrease hospitalization compared to conservative treatment in select cases. Anecdotally, we observed that patients with minimally displaced pelvic fractures who could actively straight leg raise (aSLR) on examination within 24 to 48 hours of presentation seemed to be able to be treated conservatively. Our goal was to examine the ability to aSLR to help determine potential surgical treatment, association to pain, and relationship to length of hospitalization.

Methods: An institutional review board (IRB)-approved prospective cohort was performed at a Level I rural trauma center on 30 patients with CT-scan-identified minimally displaced pelvic fractures (less than 10 mm) without additional lower extremity injuries. Patients were skeletally mature and had minimally displaced pelvic fractures. Patient demographics, aSLR, injury characteristics, treatment provided, length of stay (LOS), Brief Pain Inventory–Short Form (BPI–SF), Majeed Scoring (MS), and PROMIS29 at presentation were recorded. A statistical evaluation was performed.

Results: In total, eight of 30 patients were able to perform aSLR (age: 65.5 ± 16.63 years; females: 100%). All patients who could perform aSLR were treated conservatively. Patients who could not perform aSLR were age 54.81 ± 20.21 years (female: 58.14%). Of the 21 patients who could not perform a straight leg raise, 17 elected percutaneous treatment of their pelvic injury. LOS of aSLR patients was 3.88 ± 2.9 days; LOS for those who could not aSLR was 5.14 ± 4.49 days ($p = 0.19$). The BPI-SF pain severity index for aSLR patients was 6.714 ± 1.65 versus 6.81 ± 1.64 for non-aSLR patients. The BPI-SP pain interference index for aSLR patients was 7.63 ± 1.61 versus 6.80 ± 1.39 for non-aSLR patients. MS for aSLR patients was 28.71 ± 11.79 versus 21.91 ± 7.83 ($p = 0.095$) for non-aSLR patients. PROMIS pain intensity scores for aSLR patients were 7.17 ± 1.33 versus 6.32 ± 2.66 ($p = 0.14$) for non-aSLR patients.

Conclusion: Patients who could aSLR were treated conservatively with decreased LOS compared to patients who could not aSLR, who often chose surgical stabilization of their pelvic ring injury. All patients experienced similar significant pain after injury on pain and PROMIS scores. The aSLR may help with screening pelvic ring injuries that can be treated conservatively.