

## Does Final Radiographic Displacement Correlate With Pain and Function After Lateral Compression Pelvic Ring Injury?

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**Purpose:** The direction and magnitude to which pelvic fracture displacement leads to impaired function and pain remains unknown. The purpose of this study was to examine the association between final radiographic displacement with pain and function after lateral compression (LC) pelvic ring injury.

**Methods:** Patients aged 18-80 years with a minimally displaced (<1 cm) LC pelvic fracture and complete posterior injury were prospectively evaluated at 2 trauma centers. AP, inlet, and outlet radiographs were obtained at injury and routine follow-ups. Vertical, horizontal (rotational), and posterior pelvic ring displacements on healed radiographs were measured by 2 surgeons using published methods. Patients were separated into 2 groups based on displacement in any plane:  $\leq 5$  mm or  $>5$  mm. The following clinical outcomes were assessed at 12 months: Majeed pelvis score, Short Form 12 (SF-12) physical and mental component summary (PCS, MCS), and Brief Pain Inventory (BPI, 0-10). Student's t test was used to compare groups.

**Results:** 71 participants with a mean age of 44 years were included. There were 47 LC1 patterns, 23 LC2, and 1 LC3. 34 were treated surgically and 37 were managed nonoperatively. Greater than 5 mm of horizontal ring displacement occurred in 35 patients. This group appeared to have worse outcomes in all clinical measures, including a 9% lower Majeed score ( $P = 0.03$ ), 6.6-point lower SF-12 PCS ( $P = 0.02$ ), 5.0-point lower SF-12 MCS ( $P = 0.06$ ), and 1.0 higher pain score ( $P = 0.06$ ). Vertical displacement (AP) was associated with a slightly worse Majeed score and PCS. Displacement in the other planes was relatively rare ( $n \leq 13$ ), and no differences between groups were detected (Table 1).

**Conclusion:** Within the reliability of pelvic radiographic measurements, this study suggests horizontal ring displacement  $>5$  mm is possibly associated with worse pain and function after LC pelvic ring injuries.