

Long-Term Pain and Function in Patients With Unstable Pelvic Fractures Treated with Posterior Screw Fixation: A Prospective Case Series

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Purpose: The primary purpose of this study was to quantify patient-reported pelvic pain and function within 24 months of an unstable pelvic fracture treated with posterior screw fixation. Secondarily, we aimed to identify patient factors associated with increased pain.

Methods: This prospective case series included 88 adult patients with an unstable pelvic fracture (mean age, 42 years [standard deviation, 17]; 68% male). Lateral compression (LC)-1 (32%) and anterior posterior compression (APC)-2 (22%) were the most common fracture patterns. Patients required posterior screw fixation to be included in the study. 78% of patients had additional anterior fixation. The primary outcome was mean pain from 6 to 24 months postinjury measured with the Brief Pain Inventory (BPI). The secondary outcome was function measured with the Majeed Pelvic Outcome Score.

Results: From 6 to 24 months postinjury, the average pain score was 2 on the 10-point BPI scale (95% confidence interval [CI], 1-4). While 81% of the sample reported mild to no pain 24 months after injury, 9% continued to experience severe pain (BPI ≥ 6). The mean pelvic function was 71 on the 100-point Majeed scale (95% CI, 60-82). Almost two-thirds of the patients (63%) attained good to excellent function (Majeed ≥ 70) by 24 months, but 14% remained with poor function (Majeed < 55). A history of chronic pain (mean increase, 1.2 points; 95% CI, 0.0-2.3; $P = 0.05$), initial fracture displacement (≥ 5 mm) (mean increase, 0.9 points; 95% CI, 0.1-1.7; $P = 0.02$), and greater socioeconomic deprivation (mean increase, 0.3 points per decile; 95% CI, 0.1-0.5; $P < 0.01$) were significantly associated with increased pain. Postreduction displacement, reduction quality, and additional anterior fixation were not associated with long-term pain.

Conclusion: The findings of this prospective study suggest the majority of patients with unstable pelvic ring fractures achieve minimal to no pelvic pain and good to excellent pelvic function from 6 to 24 months after injury. However, about 1 in 10 patients experienced severe pelvic pain and poor function 24 months after injury. We found no evidence that modifiable treatment factors were associated with less long-term pain. These data demonstrate that modern fixation techniques result in good pain and functional outcomes for most patients, but an important subset continues to experience poor long-term results.