

Prognostic Value of Preoperative Radiographic Parameters for Sexual and Functional Outcomes in Young Women With Pelvic Fractures

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Purpose: This study aimed to determine the prognostic value of preoperative radiographic measures—specifically pubic symphyseal diastasis, sacroiliac (SI) joint congruity, and/or concomitant sacral fracture—in predicting long-term sexual and functional outcomes in young women with pelvic fractures.

Methods: A retrospective cohort analysis was conducted on 35 female patients age 45 years or younger who were treated both surgically and non-surgically for pelvic fractures. Inclusion criteria required that patients had a minimum follow-up duration of 1 year and a complete pelvic injury radiographic series. Pubic symphyseal diastasis was measured on injury plain radiographs (AP, inlet, and outlet) as the minimum distance between the pubic superior cortical surface of one pubic bone to the corresponding edge of the contralateral side. SI joint congruity was assessed by comparing the joint space between the sacral and iliac surfaces on each side of the pelvis; an SI joint was classified as incongruous if the joint space width difference was greater than 1.5 mm. Concomitant sacral fractures were identified on imaging and recorded. Long-term outcomes were evaluated using two validated questionnaires: the Female Sexual Function Index (FSFI) for sexual outcomes and the Short Musculoskeletal Function Assessment (SMFA) for overall functional status. Patients were stratified based on an FSFI threshold of 26.55 or less, indicating sexual dysfunction. Welch's t-tests and χ^2 tests were used.

Results: The mean age at time of injury was 33.1 ± 8.7 years, and the average follow up was 4.1 ± 2.6 years. Overall, 54.2% (19 of 35 patients) demonstrated FSFI scores of 26.55 or less, outside the normal sexual function range. Mean SMFA score across the cohort was 16.4 ± 22.3 . Patients with SI joint incongruity experienced higher rates of sexual dysfunction (52.8% vs 18.8% [$p = 0.01$]). Patients with joint symmetry had significantly higher FSFI scores (mean: 24.2 ± 3.1 vs 13.9 ± 2.4 [$p = 0.01$]). Sacral fractures occurred in 25 patients (71.4%).

This subgroup demonstrated a trend toward lower sexual function (mean FSFI: 18.45 ± 5.61 vs 25.84 ± 12.09 [$p = 0.09$]). The dysfunction group had a higher mean pubic symphyseal diastasis (10.0 ± 2.1 cm vs 5.28 ± 13.6 cm); however, this difference was nonsignificant ($p = 0.18$).

Conclusion: Initial injury radiographic parameters, specifically SI joint incongruity, demonstrate significant prognostic potential for long-term sexual outcomes in young women with pelvic fractures.