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

Amelia R Goldstein, Nicole Stevens, Abhishek Ganta, Chloe Cecile Fong, Danielle M Olson, Benjamin W Padon, Michael Coons, Sanjit R Konda, Kenneth A Egol

INTRODUCTION: Pelvic ring fractures in young women are associated with long-term physical and psychosocial morbidity, including sexual dysfunction. While radiographic injury patterns are routinely assessed for surgical decision-making, their role in predicting long-term sexual function remains poorly defined. This study aimed to evaluate whether initial radiographic features at the time of injury can predict future sexual dysfunction in premenopausal women.

METHODS:

A retrospective cohort study was conducted at a Level I trauma center. Female patients aged 18–45 who sustained OTA 61A–C pelvic fractures between 2013 and 2024 were identified. Radiographs and CT scans were reviewed for pubic symphyseal diastasis, sacroiliac (SI) joint congruity, pelvic symmetry, and deformity index. Demographic and operative data were also collected.

At final follow-up, patients completed the Female Sexual Function Index (FSFI) and Short Musculoskeletal Function Assessment (SMFA). Sexual dysfunction was defined as FSFI ≤26.55. Statistical comparisons were performed using t-tests, chi-square analyses, and ANOVA. Multivariate logistic regression was used to assess independent radiographic predictors of sexual dysfunction. Analyses were conducted in SPSS Version 29.0 (IBM Corp., Armonk, NY), with significance set at $p < 0.05$.

RESULTS: Forty-five patients met inclusion criteria (mean age 28.6 ± 8.7 years). Operative fixation was performed in 44.4% (n = 20). Mean follow-up was 4.9 ± 3.0 years. Two-thirds (66.7%, 30/45) of patients reported sexual dysfunction. On univariate analysis, wider pubic symphyseal diastasis ($p < 0.01$), SI joint incongruity ($p = 0.04$), and older age at injury ($p < 0.01$) were associated with sexual dysfunction. However, multivariate logistic regression identified only age at injury as an independent predictor ($p = 0.019$). No significant associations were observed between sexual function and pelvic symmetry or deformity index.

DISCUSSION AND CONCLUSION: Although specific radiographic features—such as symphyseal diastasis and SI joint incongruity—are associated with sexual dysfunction on univariate analysis, they lack independent prognostic value. These findings highlight the limitations of radiographic parameters in predicting post-injury sexual health and underscore the multifactorial nature of recovery following pelvic trauma in young women.