

Quantifying Urinary and Sexual Dysfunction Following Pelvic Fracture

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Purpose: Our objective was to quantify the severity of urinary dysfunction (UDys) and sexual dysfunction (SDys), and to evaluate the relationship between UDys, SDys, injury, and treatment factors in patients with surgical pelvic fracture (PF).

Methods: Patients with a surgical PF were enrolled into a prospective study. Patient-reported outcomes (PROs) using the Short Form-36 (SF-36) and UDys and SDys using the International Consultation Incontinence Questionnaire were collected at baseline, 6 months, and 1, 2 and 5 years. Patients were scored on symptoms of voiding and incontinence (women were also scored on filling) to derive a score of urinary function (UF). Sexual function (SF) was scored as a single domain in both genders. Both genders reported how bothersome their urinary (UB) and sexual (SB) symptoms were. For all scores lower is better; asymptomatic patients have a score of zero. Regression analysis (RA) was used to isolate the importance of predictive factors on UF, UB, SF, and SB at 1 year, and the impact of these on quality of life (QOL).

Results: 113 patients were in the cohort: 39 (34.5%) women and 74 (65.5%) men. OTA 61B fractures were diagnosed in 74 (65.5%) of patients, the rest were 61C. Urinary function (UF) in both genders was impacted by pelvic fracture, evident in all domains in men and in the filling domain only in women. At 5 years, UB scores trended from a mean of 5.0 (standard deviation = 8.3) to 26.8 (31.8) ($P < 0.001$) in men and a mean of 6.7 (9.8) to 39.8 (26.7) ($P < 0.01$) in women. SF in men (0.8 [1.9] to 2.8 [3.2]) at 5 years ($P < 0.01$) and women (2.1 [3.1] to 5.0 [3.3]) at 2 years ($P = 0.03$) was impacted. In men SB mean score changed from 2.1 (4.9) to 10.7 (16.0), $P < 0.01$ and in women SB was initially low and fairly stable to 2 years. Overall, men reported more sexual function bother at 6 months and 1 year ($P = 0.01$) than women. RA showed UF in men is predicted by ISS ($P = 0.03$) and 61C fracture (odds ratio [OR] 3.23, $P = 0.04$), and in women is predicted by urinary tract injury at admission (OR 7.57, $P = 0.03$). The overall UF score is predictive of QOL (SF-36 MCS [Mental Component Summary], $P = 0.08$) in men, but not as strongly in women. Both neurologic injury and anterior fixation were identified by RA as predictors for SF and SB in men. For women there were no specific individual predictors of SF, but urological injuries were important in predicting bother ($P < 0.01$). SF (0.02) and SB ($P < 0.001$) were important predictors of overall mental well-being (SF-36 MCS) only in men.

Conclusion: The functional impact of UDys and SDys are more significant in men, but symptoms are significantly bothersome in both genders. Male UDys and SDys are closely tied to neurological injury. Female UDys and SDys are predicted by presence of a urinary tract injury at admission. SDys and UDys are important to overall mental well-being in male patients.