

Variables Associated With Loss of Reduction After Fixation of Traumatic Pubic Symphysis Disruptions

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Purpose: Our objective was to determine what variables are associated with loss of reduction of pubic symphysis injuries after plate fixation.

Methods: A retrospective review of patients treated with plate fixation of traumatic pubic symphysis injuries was performed. Symphysis diastasis on injury, postoperative, and follow-up radiographs was measured.

Associations among patient, fracture, and fixation characteristics and a loss of reduction ≥ 10 mm were analyzed.

Results: The review included 50 patients. The median age was 38.5 years (interquartile range [IQR] 27.7 to 48.5), and a majority were male (80.0%, $n = 40$). A loss of reduction ≥ 10 mm occurred in 18% ($n = 9$), and revision fixation occurred in 6.0% ($n = 3$). On univariate analysis, patients with a loss of reduction, compared to patients without, had a greater BMI (32.2 vs 26.5, $p = 0.001$), increased symphysis diastasis on injury radiographs (46.0 vs 24.0 mm, $p = 0.0001$), and more anterior pelvic space infections (55.6% vs 14.6%, $p = 0.01$). There were no associations among loss of reduction and age, AO/OTA classification, Young Burgess classification, 4-screw vs >4 -screw plate fixation, number of posterior screws, or residual post-fixation symphyseal diastasis ($p > 0.05$). On multivariate analysis, initial symphysis diastasis was the only variable associated with loss of reduction ≥ 10 mm ($p = 0.03$). A symphysis diastasis of ≥ 35.0 mm was found to maximize the sensitivity (88.9%) and specificity (75.7%) for identifying patients who had a loss of reduction.

Conclusion: The severity of initial symphysis diastasis was associated with loss of reduction. A threshold of 35.0 mm of symphysis diastasis maximized the sensitivity and specificity for identifying patients who experienced a loss of reduction.