Clinical Depression (Major Depressive Disorder) Does Not Affect Functional Outcomes in Patients with Tibial Plateau Fractures

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Purpose: Prior studies have demonstrated that Major Depressive Disorder (clinical depression: Diagnostic and Statistical Manual of Mental Disorders, 4th ed [DSM-4]) is not associated with poorer functional outcomes following hip and ankle fractures, but leads to worse outcomes following elective procedures such as total joint arthroplasty surgery. The purpose of this study is to determine if depression is associated with poorer functional outcomes in patients who sustain tibia plateau fractures.

Methods: Patients with a tibia plateau fracture were prospectively enrolled in a registry. Demographic data, medical history, and injury information were collected at time of enrollment. Functional status was assessed using the Short Musculoskeletal Function Assessment (SMFA) at baseline (preinjury), 3 months, 6 months, and 1 year post injury. Any wound complications and reoperations were recorded at each follow-up visit. Injury fracture site depression (mm) and postoperative residual articular incongruity (mm) were obtained from injury and follow-up radiographs. Records were reviewed to identify patients with a diagnosis of clinical depression and who were taking antidepressant medications at the time of their injury. SMFA scores, injury fracture site depression, postoperative residual articular incongruity, complications, and reoperations were compared between patients with and without clinical depression using Mann Whitney U tests or $\chi 2$ tests.

Results: There were 420 patients enrolled in the registry and the mean age was 50.8 ± 15.6 years. 42 (10%) were being treated for depression at the time of their tibia plateau fracture, of whom 34 (81.0%) were treated operatively. Of the 378 patients in the non-depressed cohort, 316 (83.6%) were treated operatively. Depressed patients were older (55.5 ± 12.7 vs 50.3 ± 15.8, $P = 0.05$) and were more likely female (73.8% vs 47.6%, $P<0.01$). There were no differences in injury mechanism or Schatzker classification. At baseline, the clinical depression cohort had worse SMFA scores compared to the non-depressed cohort (5.90 ± 14.41 vs 2.69 ± 8.35, $P<0.01$). There were no differences in total SMFA score or any SMFA subscores at 3, 6, and 12 months. Clinically depressed patients had similar initial fracture site depression and residual articular incongruity as compared to non-depressed patients. 36.3% of operative patients and 28.2% of nonoperative patients had residual articular incongruity. The incidence of wound complications, reoperations, and healing also did not differ between the cohorts.

Conclusion: Despite patients with clinical depression reporting higher (poorer) SMFA scores at baseline, clinical depression was not associated with worse injuries, diminished clinical, or poorer functional outcomes following tibia plateau fractures.