Native Hip Survival and Long-Term Patient-Reported Outcomes Following Acetabular Fracture

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Purpose: The aim of this study was to report long-term native hip joint survival following acetabular fracture and validated patient-reported outcome measures (PROMs).

Methods: 523 consecutive patients with acetabular fractures from 1988-2010 were included. Mean age was 51 years (range, 14-100) and 356 were male (68%). Management included: open reduction and internal fixation (ORIF) in 210 displaced fractures, 4 acute total hip arthroplasties (THAs), and nonoperative management in 209 undisplaced fractures and in 49 displaced/unreconstructable fractures in the elderly. PROMs (OHS [Oxford Hip Score], iHOT [International Hip Outcome Tool], UCLA) were collected at mean 13.2 years (range, 7.9-28.8) when radiographic review and Kaplan Meier survival analyses were also performed.

Results: 61 patients (12%) underwent late THA at mean 7.5 ± 7.6 years, 174 (33%) had died, and 85 (16%) were lost. With end point THA, 10-year survival was 80.8% (95% confidence interval [CI] 74.5-87.1) after ORIF and 95.4% (92.1-98.7) following nonoperatively managed undisplaced fractures (P <0.001). With severe posttraumatic osteoarthritis or THA as the end point 10-year survival was 79.3% (72.8 to 85.8) and 95.4 (92.1 to 98.7), respectively (P <0.001). PROMs were significantly better in nonoperatively managed undisplaced fractures compared to ORIF: OHS (40.2 ± 12.1 vs 34.8 ± 13.7, P = 0.002); iHOT (78.0 ± 25.0 vs 66.1 ± 30.3, P = 0.01), and improvement in UCLA score (-0.9 ± 2.0 vs -2.2 ± 2.5, P = 0.001). Age was the only significant predictor of outcome following ORIF. Comparing patients <45 and those ≥45 OHS (38.4 ± 13.3 vs 28.7 ± 12.3) and iHOT scores (72.6 ± 28.8 vs 55.0 ± 29.9) were significantly better than in patients <45 years (P <0.001) as was 10-year survival: 86.2% (78.8 to 93.5) compared to 61.4 (48.4 to 74.3) (P = 0.015). Letournel classification, hip dislocation, surgical approach, sciatic nerve palsy, and associated fractures were not significant predictors of outcome or survival after ORIF. Following late THA mean OHS was 35.3 ± 13.0. UCLA activity score fell from median 8 to 5 following ORIF (P <0.001), but 37% returned to preinjury levels. Median UCLA score was unchanged in nonoperatively managed undisplaced fractures. Normal hip function (OHS 100%; iHOT >95%) was reported in 13% after ORIF and 33% of nonoperative undisplaced fractures.

Conclusion: The need for ORIF in displaced acetabular fractures reduces native hip survival significantly compared to nonoperatively managed undisplaced fractures, especially in patients >45 years where long-term patient-reported outcomes are also poorer.