Comparison of Primary and Post-Acetabular Fracture Total Hip Arthroplasty Complications at 90 Days and 2 Years: A Nationally Matched Analysis

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Purpose: Acetabular fracture incidence in the US is 40/100,000 yearly and increases as age progresses with an 11% conversion rate to total hip arthroplasty (THA) after acetabulum fixation. We sought to compare the length of stay (LOS) along with THA-specific and systemic complications for primary and post-acetabulum fracture (PAF) THA procedures, excluding polytrauma cases.

Methods: A retrospective PearlDiver database review was performed for patients who underwent primary and PAF THA from 2014 to Q1 of 2021. Both groups were matched at a 1:1 ratio based on age, sex, Charlson comorbidity index, tobacco use, obesity, and diabetes. LOS and complications at 90 days and 2 years were analyzed.

Results: 5026 patients were in each group. Patients with PAF THA had longer LOS (4.3 ± 4.9 vs 3.0 ± 3.1 days, $P<0.01$). Hip dislocations were higher in the PAF group (144 vs 39 [90 days], $P<0.01$, and 193 vs 52 [2 years], $P<0.01$). Periprosthetic fracture was higher in the PAF group (82 vs 19 [90 days], $P<0.01$, and 145 vs 35 [2 years], $P<0.01$). Prosthetic joint infections (PJIs) were higher in the PAF group (52 vs 19 [90 days], $P<0.01$, and 74 vs 31 [2 years], $P<0.01$). Revision THA was higher in the PAF group (109 vs 24 [90 days], $P<0.01$, and 159 vs 43 [2 years], $P<0.01$). Other systemic complications like blood transfusion, deep vein thrombosis (DVT), and surgical site infection (SSI) were higher in the PAF group at both time frames. Pulmonary embolism, cardiac arrest, cerebrovascular accident, myocardial infarction, and renal failure were not significant in either group at either time frame.

Conclusion: This study revealed that, compared to patients receiving primary THA, patients getting PAF THA have extended hospital stays as well as increased chances for hip dislocations, PJIs, periprosthetic fractures, blood transfusions, DVTs, and SSIs at 90 days and 2 years postoperatively. Care must be taken with this cohort, and surgeons should explain the possible complications and expected outcomes to these patients before embarking on surgical procedures.