

Outcomes of Associated Both-Column Acetabular Fractures With and Without a Posterior Wall Fracture

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Purpose: Acetabular fractures are debilitating injuries with treatment and morbidity profiles largely associated with classification schema described by Judet and Letournel. Patterns often exist outside this schema, however, including an associated both-column acetabular fracture (ABCAF, OTA/AO 62C) with a concomitant posterior wall fracture (PWF). This fracture pattern is thought to create significant hip instability; however, little investigation has been done to determine outcomes following surgical repair of these injuries in comparison to ABCAFs with no PWF. This study compares these injuries primarily regarding subsequent conversion to total hip arthroplasty (THA) in order to determine if concomitant PWF is an indicator for poor outcomes.

Methods: This review utilized study groups determined from a database of all 72 ABCAFs in 72 patients treated with open reduction and internal fixation between 2010 and 2017 at 2 Level-I trauma centers. The presence of an ipsilateral PWF was determined radiographically yielding a control group (ABCAF only) of 47 patients and a study group (ABCAF with a PWF) of 25 patients. 27 (60%) control and 18 (40%) study patients were included for final analysis through achievement of 12 months of follow-up and/or subsequent conversion to a THA. Patients who received a THA as their index procedure (n = 5) were excluded. Demographic, injury, treatment, and postoperative course information was collected retrospectively via a chart review for these patients. χ^2 and unpaired t tests were used to compare study and control groups across all factors. A Kaplan-Meier curve was applied to compare survivorship of control and study groups.

Results: Of the 45 patients included, 7 (15.6%) received a subsequent THA although no difference in the rate of conversion between study (n = 4, 22.2%) and control (n = 3, 11.1%) groups was seen (P = 0.412). Results from the Kaplan-Meier curve, however, indicate significantly better survivorship in study group patients compared to control (P = 0.048). This suggests that concomitant PWFs may confer a protective effect in ABCAFs, although this study is likely too underpowered to draw that conclusion. No differences between groups were observed across other treatment and postoperative outcomes, including length of surgery (P = 0.621), complication rate (P = 0.465), and postoperative pain (P = 0.141). The average age of all included patients was 50.5 years, with no difference between groups (P = 0.336). No differences in % male (P = 1.00), average Charlson Comorbidity Index (P = 0.801), or mechanism of injury (P = 0.644) were observed.

Conclusion: ABCAFs with an associated PWF do not appear to confer worse clinical outcomes for patients than those without especially as it relates to ipsilateral joint replacement. This information should aid in treatment planning following these injuries.