

Comparison of Outcomes of Operative versus Nonoperative Treatment of Acetabular Fractures in the Elderly and Severely Comorbid Patient

Kempland Walley, BS¹; Paul Appleton, MD¹; Edward Rodriguez, MD²;

¹Beth Israel Deaconess Medical Center, Boston, Massachusetts, USA

²Beth Israel Deaconess Medical Center / Harvard Medical School, Medfield, Massachusetts, USA

Background/Purpose: Acetabular fractures in the elderly and severely comorbid patient can be associated with high morbidity and mortality. However, differences in outcomes of acute open reduction and internal fixation (ORIF) versus nonoperative care of acetabular fractures in this patient population remain unclear. This retrospective study assesses morbidity, mortality and return to baseline ambulation of operative fixation versus nonoperative care of acetabular fractures in a subgroup of elderly (>75 years) and severely comorbid younger patients (>65 years) to evaluate outcomes after acute operative intervention versus nonoperative. Our hypothesis was that both nonoperatively and operatively managed patients exhibit poor return to baseline ambulatory status and similar mortality rates at 1 year.

Methods: A retrospective review of 243 patients who sustained an acetabular fracture between April 2005 and November 2014 was performed. 86 patients met inclusion criteria: age >75 with or without comorbidities, or age >65 if complicated by two or more medical comorbidities including diabetes, active cardiac disease (coronary artery disease, congenital heart disease, or past surgical intervention), active pulmonary disease (chronic obstructive pulmonary disease, asthma, cystic fibrosis, or pneumonia), neurologic disease (Alzheimer disease, dementia, Parkinson, paraplegia), malignancy, end-stage renal disease or dialysis, obesity marked by a body mass index (BMI) >30 kg/m², and end-stage liver disease. Outcomes measures evaluated were 1-year mortality, duration of hospital stay, return to preinjury ambulation status, and early treatment failure marked by conversion to a total hip arthroplasty (THA) within 1 year of treatment.

Results: 37 patients with acetabular fractures were treated with surgical fixation and 49 were treated nonoperatively. Operative patients did not demonstrate a statistically significant difference in mortality within 1 year of treatment compared to nonoperatively treated patients ($P > 0.05$; Table 1). Operative patients demonstrated a statistically significant increase in early treatment failure marked by a conversion to a THA within 1 year when compared to conservatively treated patients ($P < 0.01$; Table 1). No differences in age, duration of follow-up, hospital stay, or ability to return to baseline ambulation at latest clinical follow-up were found between groups ($P > 0.05$ for all; Table 1). However, nonoperatively treated patients had a higher incidence of Alzheimer disease/dementia and Parkinson compared to operatively treated patients ($P < 0.05$).

Conclusion: Initial nonoperative treatment does not preclude staged elective arthroplasty in those patients who develop symptomatic posttraumatic osteoarthritis and are able to undergo this procedure despite noting that early revision in our group was less frequent after nonoperative care.

Table 1. Demographic and Clinical Outcome Variables

Variable	Operative (n = 37)	Non-Operative (n = 49)	p-value
Age, years (range)	78 (66-94)	81 (65-94)	<i>P</i> > 0.05
Total of younger patients (less than 75 but greater 65 years) with 2 or ore comorbidities, n (%)	7 (19%)	12 (24%)	<i>P</i> > 0.05
Follow-up, months	14 (1-60)	16 (1-60)	<i>P</i> > 0.05
Length of stay, days	8.3 (1-19)	8.6 (1-25)	<i>P</i> > 0.05
Return to baseline ambulation status at latest follow up (%)	24%	29%	<i>P</i> > 0.05
Conversion to THA, n (%)	5 (14%)	1 (2%)	<i>P</i> < 0.01*
Mortality, n (%)	7 (19%)	10 (20%)	<i>P</i> > 0.05

Numerical variables were compared using student t test. Categorical variables were compared using Fischer's Exact Test. *denotes statistical significance.