

Outcomes of Acetabular Fractures Operated by Newly Graduated Orthopaedic Trauma Surgeons

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Purpose: The treatment of acetabular fractures represents one of the most complex topics in orthopaedic trauma. Current literature evaluates outcomes of acetabular fractures treated by master surgeons, but outcomes of acetabular fractures performed by surgeons in the beginning of their careers are unknown. The goal of the study is to report the clinical and functional outcomes of acetabular fractures treated with open reduction and internal fixation (ORIF) by orthopaedic trauma fellowship-trained surgeons during the first 5 years following their fellowship completion.

Methods: We retrospectively reviewed patients with acetabular fractures treated with ORIF by our newly graduated orthopaedic trauma surgeons at our Level I trauma center from 2018-2021. Inclusion criteria include patients 18 years or older with an acetabular fracture treated with ORIF. Exclusion criteria include percutaneous fixation, nonoperative management, and planned acute total hip arthroplasty. Chart review was used to record injury patterns, operative information, complications requiring return to the operating room, and conversion to arthroplasty. Reduction quality was evaluated by 2 independent reviewers with grade A given for 0-2 mm step-off, B for 2-4 mm step-off, and C for > 4 mm step-off. HOOS JR (Hip Disability and Osteoarthritis Outcome Score for Joint Replacement) scores were collected at 1 year.

Results: There were 68 patients (54 male, 14 female) with 69 acetabular fractures. The average age was 51 ± 21 years. The 3 most common fracture patterns were posterior wall (32%), associated both column (23%), and transverse posterior wall (17%). Reduction grading was 71% A, 10% B, and 19% C. The rate of unplanned return to the operating room was 28% due to revision ORIF, irrigation and debridement, heterotopic ossification excision, implant removal, or conversion to total hip arthroplasty. 10 patients (14.5%) required conversion to total hip arthroplasty within 3 years. Peri-operative 30-day mortality rate was 4% (3 patients). Mean HOOS JR at 1 year was 78.1 ± 19.2.

Conclusion: Acetabular fractures treated with ORIF by newly graduated orthopaedic trauma surgeons demonstrated modest outcomes. The learning curve for this technically challenging operation is longer than 5 years.

Table 1. Fracture outcomes

Reduction grading	
A 0-2 mm	71% (N=49)
B 2-4 mm	10% (N=7)
C > 4 mm	19% (N=13)
Unplanned rate of return to the operating room	29% (21 RTOR instances in 20 patients)
Conversion to total hip arthroplasty	15% (N=10)
Irrigation and debridement	6% (N=4)
Implant removal	4% (N=3)
Revision open reduction internal fixation	3% (N=2)
Hematoma requiring IR drain placement	1% (N=1)
Heterotopic ossification excision	1% (N=1)

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device they wish to use in clinical practice.