

Acetabular Fracture Reduction: Experience Matters!

Amanda Schroeder, MD¹; Rafael Kakazu, MD²; Steven Dailey, MD¹; Caleb Phillips, PhD³; Frank Avilucea, MD⁴; **Michael T. Archdeacon, MD¹**

¹University of Cincinnati Orthopaedics, Cincinnati, Ohio, USA

²University of Cincinnati, Cincinnati, Ohio, USA

³University of Colorado - Boulder, Boulder, Colorado, USA

⁴University of Cincinnati Academic Health Center, Cincinnati, Ohio, USA

Purpose: Our objective was to investigate the influence of surgeon experience on open reduction and internal fixation (ORIF) of acetabulum fractures with regard to quality of reduction, estimated blood loss (EBL), operative time, and number of postoperative complications.

Methods: This is a retrospective evaluation of a prospectively collected acetabular fracture database from a single, fellowship-trained surgeon at an academic Level I trauma center. The quality of reduction of all acetabular fractures treated with ORIF between September 2001 and December 2014 was assessed using postoperative radiographs. A total of 715 patients sustained 716 consecutive acetabular fractures that were treated operatively during this period and are included in the study. The correlation between surgeon experience and outcome measurements was evaluated as a continuous variable using logistic regression analysis. A *P* value of 0.05 was considered statistically significant.

Results: There were no differences among years of experience in regard to EBL or postoperative complication rate (*P* >0.05). Percentage of anatomic reductions was directly correlated with years in practice (*r* = 0.780, *P* <0.001). For each additional year of experience, 1.3% more anatomic reductions were produced. Also, the rate of imperfect versus poor reductions increased over time when reductions were nonanatomic (*P* <0.05). Operative time was negatively correlated to years in practice (*r* = 0.133, *P* <0.001), with operative time decreasing by 3.2 minutes with each subsequent year of experience.

Conclusion: We found that quality of reduction of acetabular fractures is directly correlated with surgical experience; for each additional year of experience, an average of 1.3% more anatomic reductions were produced. Operative time is inversely proportional to surgical experience, with a mean reduction of 3.2 minutes annually. No significant difference was found for surgical experience with regard to EBL or number of complications.

Table 1. Surgeon Experience vs. Quality of Reduction

