

**Outcomes of Trochanteric Osteotomies for Acetabular Fracture Surgery***Andrew Dubina; Niluka Wickramaratne, BSE; Robert V. O'Toole, MD;**Theodore T. Manson, MD;**R Adams Cowley Shock Trauma Center, Department of Orthopaedics,  
University of Maryland School of Medicine, Baltimore, Maryland, USA*

**Background/Purpose:** Trochanteric osteotomies are used to improve surgical exposure during open reduction and internal fixation of acetabular fractures when used in conjunction with standard approaches. The total hip arthroplasty literature has reported nonunion rates as high as 30% with trochanteric osteotomies; however, few data exist regarding the outcomes of trochanteric osteotomies for acetabular fracture surgery. Our primary hypothesis was that patients who received trochanteric osteotomies during open reduction and internal fixation of an acetabular fracture would have low rates of complications such as nonunion of the trochanteric fragment or need for removal of symptomatic hardware. A secondary hypothesis was that hip abduction precautions are not necessary in digastric type osteotomies.

**Methods:** A retrospective review was conducted of a prospectively collected database at an academic trauma center to identify patients with all acetabular fractures between July 2002 and June 2010 (n = 734 fractures) who required trochanteric osteotomies (n = 64, 8% of fractures). 47 of the fractures with trochanteric osteotomies met inclusion criteria of adequate follow-up (>56 days) to evaluate healing. No excluded patient had a complication. Fractures were classified by the attending orthopaedic surgeon using the Letournel-Judet classification system and grouped as 7 simple and 40 associated fractures. The study cohort of patients included 12 unigastric and 35 digastric osteotomies. Of the unigastric trochanteric osteotomies, 5 (42%) were for extended iliofemoral and 7 (58%) were for Kocher-Langenbeck approaches. Only 7 of 35 (20%) digastric osteotomies were given hip abduction precautions in the postoperative period. The primary outcome measure in this study was complete radiographic union of the osteotomy site as determined by an independent fellowship-trained orthopaedic trauma surgeon and maintenance of hardware of the trochanteric osteotomy site at final follow-up.

**Results:** All study patients demonstrated radiographic union of the trochanteric osteotomy site (100% union rate, n = 47). Only 20% of the digastric trochanteric osteotomies were given hip abduction precautions postoperatively yet they all (n = 35) healed uneventfully. No significant difference was found in the number of patients who had their trochanteric osteotomy screws removed between our data and a historical control (13% vs. 20%,  $P = 0.43$ ).

**Conclusion:** Despite the infrequent application of abduction precautions that are intended to protect the osteotomy site and reduce the risk of nonunion or fixation failure, our data demonstrate a 100% union rate (n = 47) of trochanteric osteotomies at 8 weeks postoperatively. Additionally, it appears it may be safe to not use hip abduction precautions in patients with digastric trochanteric osteotomies. There are multiple protective factors against nonunion in this study population compared with prior arthroplasty patients as trauma patients are younger with better healing potential and are more likely to be non-weight bearing in the postoperative period, which might protect the osteotomy. Regardless, it appears that trochanteric osteotomies do not have a significant nonunion rate or a large rate of symptomatic hardware removal and that digastric osteotomies may be safe to manage without hip abduction precautions.

See pages 99 - 147 for financial disclosure information.