

**Posterior Wall Acetabular Fracture Fixation Without Lag Screws***Eric Chen, MD, PhD<sup>1</sup>; Paul Tornetta, III, MD<sup>1</sup>**<sup>1</sup>Boston University Medical Center, Boston, Massachusetts, USA*

**Purpose:** Posterior wall fractures occur with a shearing mechanism and fixation with independent lag screws and a buttress plate is considered the standard of care. However, the fracture is usually oriented close to the sagittal plane, mandating that lag screw fixation perpendicular to the fracture is at a severely acute angle to the retroacetabular surface. We sought to examine the effectiveness of peripherally placed underbent buttress plating without lag screws for the treatment of posterior wall acetabular fractures.

**Methods:** We reviewed a consecutive series of patients with isolated posterior wall acetabulum fractures all treated with a peripherally placed, underbent buttress plate to provide a compression of the fragment to the bed and resist posterior displacement of the head. Pre-operative radiographs and CT scans were reviewed and the percent of the posterior wall intact, estimated fracture fragment width, posterior wall comminution, and whether the fracture apex extended to the acetabular roof were recorded. Postoperative radiographic evaluation included the quality of reduction, presence of any fixation in addition to the buttress plate, and the distance of buttress plate from acetabular rim. Complications were also documented.

**Results:** We reviewed 63 consecutive patients, (54 M; 9 F) aged 17-83 years (average 39) with an average body mass index of 30 who sustained OTA type 62-A1 posterior wall acetabulum fractures. Clinical and radiographic follow-up averaged 709 and 620 days, respectively. 75% of the patients were treated with buttress plating only. Additional mini-plates more medially to support fragmented cortical retroacetabular cortical fragments were used liberally and antiglide plate was used superiorly to support extended superoanterior fractures when present. There were no losses of reduction in the series. One patient had pseudosubluxation on postoperative day 1, and was treated with femoral traction for 4 weeks. Six cases of heterotopic ossification and 3 cases of low-grade osteonecrosis were seen in follow-up. At final radiographic follow-up, the affected side joint space averaged 0.57 mm less than the contralateral side. There were no infections in the series.

**Conclusion:** This series demonstrates that posterior wall fractures can be effectively managed without lag screw fixation using an underbent peripherally placed buttress plate. The advantage of this method is the avoidance of lag screws close to the articular surface that may later create a more challenging conversion to total hip arthroplasty if needed and the more biomechanically sound peripheral position of the plate to resist posterior head translation.