

Intrapelvic Tubular Buttress Plating for Supplemental Fixation of Acetabular Fractures

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Purpose: Although techniques for buttress plating of acetabular fractures have been detailed in a few prior reports, description and results of this fixation method remain limited in the published literature. At our institution, orthopaedic traumatologists have been using a novel technique of 1/3 tubular buttress plating to assist in treating a variety of acetabular fractures. This case series presents a surgical technique as well as postoperative results, for using 1/3 tubular plates as provisional reduction tools in an intrapelvic approach to treating a variety of acetabular fractures.

Methods: We performed a retrospective review of all acetabular fracture operations performed by fellowship-trained orthopaedic traumatologists at a single Level-I trauma center, over a 5-year period. Fractures were classified by the Letournel and AO systems. We included cases where 1/3 tubular buttress plate fixation was used in fractures involving the anterior column. We reviewed postoperative outcomes including hardware failure, conversion to arthroplasty, and ambulatory status.

Results: 216 cases were reviewed (January 1, 2014 to December 31, 2018). 46 fit our inclusion criteria, where tubular buttress plating was used in fractures involving the anterior acetabulum (average 49.3 years, 29 males, 17 females, body mass index 37.2 kg/m²). We had outpatient follow-up on 40 patients (average 11.2 months). Average time to reach ambulatory status was 4.9 months. 96.8% of patients were able to ambulate with or without an assistive device, and 80% of patients had returned to their preinjury ambulatory status. Two patients required conversion to total hip arthroplasty, and 1 patient required revision for displaced hardware.

Conclusion: We find this technique to be a useful method for fracture fixation, yielding quality reductions and successful postoperative outcomes. This study presents a guide for the technical specifics and applications. This case series demonstrates high rates of return to ambulatory status, and details rates of failure.