

## 'Retainer' Mesh Plate Technique' Augmenting Unstable and Comminuted Posterior Acetabular Wall Fracture Fixation

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**Purpose:** Our objective was to report fracture fixation by a retainer mesh plate for treating unstable comminuted posterior acetabular wall fracture. We hypothesize that the retainer mesh plate augmentation of fixation would result in a more stable construct that captures all the bony wall fragments, offering better biologic healing.

**Methods:** Patients with comminuted posterior acetabular wall fractures presenting with unstable posterior fracture hip dislocation are ideal for this type of fixation. Noncomminuted, stable posterior wall fractures as well as those associated with displaced posterior column fractures that needed fixation were excluded. All the patients were operated via Kocher-Langenbeck approach, preserving remaining soft-tissue attachments to the posterior wall fracture fragments. After making sure no intra-articular bone and soft-tissue fragments existed, hip joint is reduced with marginal impaction corrected. The posterior wall bone fragments are reduced into near anatomical position and held with provisional Kirschner wires (K-wires). The titanium mesh plate (off-label use) contoured to the shape of the posterior wall of the acetabulum is glided over the K-wires and fixed with 2.7-mm fully threaded screws (6 to 7) of appropriate length thus fixing the bone fragments and stabilizing the mesh plate under fluoroscopy. This construct is further stabilized with posterior wall plate and screws along with fibrin and calcium phosphate composite grout, further augmenting the comminuted posterior wall acetabular fracture fixation.

**Results:** Four patients with unstable posterior fracture dislocation of the hip joint who had comminuted posterior wall fracture were treated by this "Retainer" mesh plate method. Short-term clinical and radiologic results at 6-month follow-up were noted. All 4 patients achieved full range of painless hip joint motion and returned to preinjury level of activities of daily life. There are no surgery-related complications such as re-dislocations, sciatic nerve palsy, or heterotopic ossification. Radiologically, no fracture fragment displacement, bony fragment subsidence, or joint collapse were noted at the latest follow-up.

**Conclusion:** Retainer mesh plate augmenting the fixation of comminuted posterior wall fracture appears to offer a stable construct that may provide better biologic healing by maintaining accurate reduction of the fracture fragments and their cartilage component, thus playing a critical role maintaining articular integrity.