

MINIMALLY INVASIVE STABILISATION SURGERY OF UNSTABLE PELVIC RING FRACTURES

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Introduction: Approaches to the pelvis are challenging as the pelvis is the transition zone between the appendicular skeleton and the axial and provides the route for transit of the neurovascular bundles to the lower limbs. The proximity of the fractures to neurovascular bundles can result in catastrophic complications during fracture exposure, reduction or fixation.

Discussion: A 19-year-old male with no known medical illness presented to the Emergency department following a road traffic accident and sustained unstable pelvic ring fracture, splenic and liver injury, left adrenal hematoma, bilateral lung contusion and parietal extradural hemorrhage. Anterior pelvic ring was fixed first using modified Stoppa approach. Right superior pubic ramus fracture fixed with locking recon plate. Traction was then applied to left lower limb to reduce the left hemipelvis. Left superior pubic ramus fracture was then fixed using retrograde intramedullary pubic screw technique. The patient was turned to a prone position for pedicle screw fixation into both PSIS. The proper length of the rod is chosen after measuring the distance and inserted through the sub-back fascia. The adjustment of distraction or compression was performed according to the dislocation to complete the surgery.

Conclusion: Surgical fixation mainly focused on the posterior pelvic ring, which contributes about 60% of the overall pelvic ring stability. The anterior ring is assessed for fixation if required following posterior stabilization. Patients with unstable pelvic injury traditionally associated vertical instability as well. The biomechanical stability for posterior pelvic fixation construct and revealed pedicle screw construct with one iliosacral screw was the stiffest followed by two iliosacral screws, single iliosacral screw and pedicle screw construct alone. In conclusion, the use of pedicle screw construct for posterior pelvic ring and combination of modified Stoppa approach for anterior pelvic ring fixation is shown to be less invasive, has less blood loss, and shorter operation time.