

The Subcrystal Pelvis External Fixation: The Hospital Sungai Buloh Experience

Tan YY, Kesavan R, Azlan MS

Department of Orthopaedics & Traumatology, Hospital Sungai Buloh

INTRODUCTION

Traumatic disruption of pelvic ring is usually as a result of high-energy injury and it is a life-threatening injuries. The initial application of pelvic external stabilization had been evolving from the conventional anterosuperior technique to more recently, subcrystal pin technique. We are presenting three case of pelvic injury, which were managed using subcrystal method of pelvis external fixation

MATERIALS

Case 1: A 25 year-old female who was injured in a MVA, sustained multiple long bone fractures including a vertical shear with left sacroiliac joint disruption and bilateral superior and inferior pubic rami fracture. Subcrystal pelvic external fixation and left SI joint screw fixation was performed. Pelvic ring was stable and no second surgery was required.

Case 2: A 20 year-old male involved in MVA and sustained open book pelvic injury with left SI joint disruption and left sacral alar fracture. External fixation of pelvic using subcrystal technique was performed immediately for initial stabilization. Subsequently, patient was undergone plating of symphysis pubis and screw fixation of the left SI joint.

Case 3: A 24 year-old male involved in a motor vehicle collision, he suffered from open book pelvic injury with bilateral SI joint disruption. His pelvis was immediately stabilized by external fixation using subcrystal method and it was kept as definitive management.

DISCUSSION

The precise role of external fixators in management of pelvic ring fracture is still evolving. The anterosuperior technique (through iliac wing) is challenging in obese patient and patient with intra-abdominal injury which require open surgery. Subsequently, supra-acetabular external fixation was introduced, and biomechanical studies have proved that this method gives better stability

in region of SI joint. Most recent, subcrystal type of external fixation was developed by Solomon et al, shows that there is no significant anatomic structures are at risk when inserting a subcrystal pin. The correct placement of pin is guided by superficial landmark (ASIS and IT), which fluoroscopy may not be required. In our experience, subcrystal external fixation is ergonomic to the patients and there are no incidences of pin site infections.

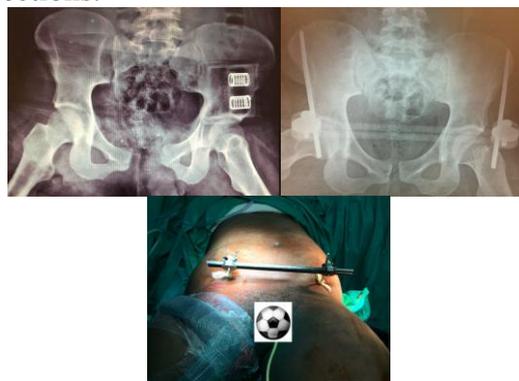


Figure 1-3: An open book closed with Subcrystal external fixator

CONCLUSION

Subcrystal pelvic external fixation provide a distinct advantages, ranged from easier correction of pin placement, tolerability of frame work, good stability, without the need of image intensifier, allow all range of ambulation and last but the least, the overall lower rate of complication rates.

REFERENCES

1. Pavlin Apostolov et al., Methods and Techniques of Percutaneous External Fixation in Pelvic fracture. Journal of IMAB
2. Lucian B. Solomon et al., The Subcrystal Pelvic External Fixator: Technique, Results, and Rationale. J Orthop Trauma 2009; 23:365–369