

FUNCTIONAL OUTCOME OF EARLY EXTERNAL FIXATION IN PELVIC FRACTURE

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ABSTRACT

Background: The behavior of pelvic ring fracture following surgical fixation has been very sparsely studied. Pelvic ring injuries, depending on their severity had been treated by variety of closed method. The purpose of the study is to assess the short-term functional outcome of pelvic ring fracture following surgical fixation. **Material and Methods:** Present prospective study consist of 62 patient of pelvic fracture admitted in department of orthopedics, NSCB medical college and hospital Jabalpur (M.P) during the period of Oct. 2010 to Sep. 2011. All patient of type A (stable) fracture treated by conservative method. Out of 40 patient of unstable pelvic fracture (involving pelvic ring) 14 were treated by surgical method. Out of 14 patient 4 were treated by external fixation, 8 by internal fixation, and 2 by combined external and internal fixation. Functional outcome assessment done by Majeed Scoring System.^[1] **Results:** Functional outcome score in surgically treated patient is excellent in 7 patients, good in 4, fair in 2, and poor in 1 patient with the minimal 3 month follow-up. Pain is the most common complaint after 3 month of surgical fixation, it is seen in 4 patients (28.57%) but only 1 patient changes their job because of this pain. **Conclusion:** Pelvic ring injury is a serious injury and can lead to long term problems significantly. Any unstable type pelvic ring injury should be treated by operative methods.

KEYWORDS: Surgical fixation.**INTRODUCTION**

Pelvic fracture constitute 3% of all skeletal injuries.^[2] Among poly trauma patients the incidence is about 25%.^[2] Henderson^[3] (1989) followed 26 patients with major pelvic disruption and found low backache in 50%, limp in 32%, and work disability in 43% of patients. Tornetta² et al.(1996) achieved a high long-term success rate with operative management of pelvic fractures while Mirada^[4] et al. found no difference in the outcome among operatively and non-operatively managed cases of pelvic fractures. The actual outcome is likely to be much more adversely affected with the cultural practices of sitting and squatting. So pilot study was planned to assess the short term functional outcome following surgical fixation in pelvic ring injury, in Indian scenario.

MATERIAL AND METHOD

Present prospective study consist of 62 patient of pelvic fracture admitted in department of orthopedics, NSCB medical college and hospital Jabalpur (M.P) during the period of Oct. 2010 to Sep. 2011. An anteroposterior (AP) x-ray of the pelvis was included in the initial radiographic examination of all patients with blunt trauma. The pelvis has a remarkable ability to recoil to a near-normal alignment after trauma. This elastic recoil can mask severe instability. Fractures noted on the AP x-

ray should prompt further investigation of the pelvis with inlet and outlet views.

All patients with unstable type of pelvic injuries are planned for surgery, but those patients come to inclusion criteria of study planned for further surgical management. 14 patients were treated by surgical method in this study. All had unstable type pelvic injury. There were 7 patients with type B and 7 with type C pelvic injury. All patients in the study had single column fixation for their injury. Out of 14 patient 4 were treated by external fixation, 8 by internal fixation, and 2 by combined external and internal fixation. All unstable pelvic fracture managed conservatively till the date of operation. Conservative management includes bed rest, pelvic belt, skeletal traction etc.

RESULT

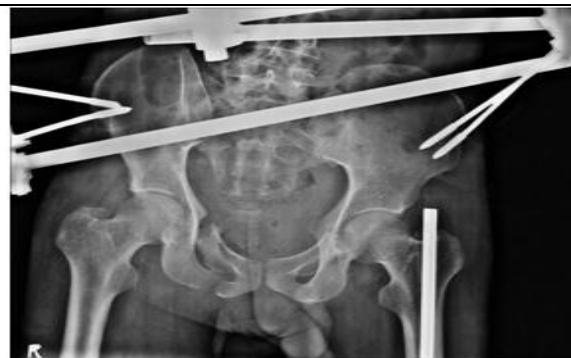
Higher incidence was observed in young active person in 3rd 4th and 5th decades (74.19%). The incidence was more in males than female (M:F= 1.8:1). Fall was the commonest (56.45%) mode of injury in patient with pelvic fracture followed by RTA (road traffic accident). While RTA was the commonest (53.85%) mode of injury in male patient. Out of 62 patients of pelvic fracture, 40 (64.51%) have unstable type of injury. Anteroposterior

compression injuries (53.23%) were the commonest type of injuries. Out of 14 patients 1 (7.14%) got infection at operated site in the form of pin tract infection. Persistent pain seen in 4 (28.57%) operated patients. Limb length discrepancy seen in 1 (7.14%) patient. This discrepancy was 10 mm. Average time to start mobilization after surgical fixation was 19 days (range 1-62 days) for all operated patients, 10 days (range 1-24 days) for patient with type B pelvic injury, and 28 days (range 3-62 days) for patients with type c pelvic injury. Follow time for all patients was range from 3 months to 8 months.

Majeed functional outcome score¹ in surgically treated patient is excellent in 7 patients, good in 4, fair in 2, and poor in 1 patient with the minimal 3 month follow-up. Pain is the most common complaint after surgical fixation, it is seen in 4 patients (28.57%) but only 1 patient changes their job because of this pain.



Pre op x-ray



Post op x-ray shows good compression at fracture site.



At 1 and half after fixate application pt start doing his all work with fixator insitu and functional majeed score 62.



At 6 month follow-up pt is patient walk sit and doing his all routine work with functionalmajeed score 86.



Pre op x-ray



Post op x-rays shows fixation of acetabulum with well molded reconstruction done



At 2 month follow-up patient start doing his household work with support .patient had pain-full external rotation with functional majeed score 66



At 6 month follow-up patient start doing his all routine work without support and pain with functional Majeed Score 80

DISCUSSION

Historically, pelvic ring injuries, depending on their severity had been treated by a variety of closed methods. Unstable pelvic injuries treated by these conventional measures often result in significant disability, moreover the mortality can reach 21.8%.^[5,6,7,8] There was a growing body of evidence that the application of an external skeletal frame will reduce venous and bony bleeding and improve tamponade by reducing and maintaining the pelvic volume to the extent that other interventions are rarely required.^[9,4,7,10] Recently, biomechanical studies showed that external frame could not ensure sufficient stability to allow mobilization without the risk of re-displacement of the fragments particularly those with vertical instability. External fixation can be used temporarily in vertically unstable injury as a part of emergency treatment to allow the patient to be placed with trunk in the upright position to improve ventilation.^[5,3,11,9,12,13] External fixation used as permanently in Tile's type B (partially unstable) pelvic injury. Our results agree with other studies stating that anterior or posterior fixation, or both could restore excellent stability and adequate consolidation of the unstable (Type-C) pelvic injuries with subsequent decrease in morbidity and mortality.^[6,13,14] They were mobilized relatively earlier without significant risk of re-displacement of the fragments. Early mobilization minimized the complications associated with prolonged recumbency in patients of the study. It has been

emphasized that surgical treatment should be carried out 5-7-days post trauma when the patient general status allows.^[13,14] It is the author's opinion to perform internal fixation for unstable pelvic injuries as soon as the general condition stabilized even up to 6 weeks after the injury. The functional results are often affected by the associated skeletal or extra skeletal injuries as well as other variables.^[5,12,13,8]

CONCLUSION

Surgery should be carried out whenever the general condition of the patient allows even up to 6-weeks. Any unstable type pelvic injury should be treated operatively. Displaced pubic rami fracture best treated by external fixator and it give good functional outcome from the next day. Tile's type B unstable fracture should be treated by external fixation because patient becomes self dependent early and good functional outcome within 2 months. it greatly facilitates nursing care allow early mobilization of patient limits many early and late complication associated with conservative management (recumbence). Tile's type C vertically unstable (>10mm displacement) injury should be treated by internal fixation because an external fixator does not correct the malalignment. External fixator give poor functional outcome in first 2 months. Acetabular fracture presenting late (upto 6 weeks) can be treated by ORIF (if pt is non weight bearing after injury). With ORIF(open reduction and internal fixation) we can achieve good reduction and it

delays requirement of T.H.R. So late presented acetabular fracture is not a contraindication for ORIF. We can achieve good reduction intra operatively. Early result shows good functional outcome following ORIF of acetabular fracture.

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