Neglected Intra-articular Proximal Tibia Fracture: Good Functional Outcome After Operative Stabilisation

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**Abstract**

**Introduction:**
We consider worthwhile reporting a case of neglected intra-articular fracture treated surgically after a period of 8 months, since it was hard to find a literature regarding surgical management of neglected fractures around proximal tibia.

**Case report:**
Our patient is a 45 years old gentleman who presented with a fracture proximal tibia 8 months old, treated by traditional bone setter. He was not able to use his right lower limb and on examination there was fracture proximal tibia which was intra-articular with gross displacement. Since the position was not acceptable with gross deformity we decided to reduce surgically. On one year follow up there was a good functional outcome post surgically with minimal lateral collateral ligament laxity.

**Conclusion:**
To conclude, surgical stabilisation of a neglected proximal tibia fracture can yield good functional outcome. Although our patient had a good functional outcome, we need more number of cases to come to a conclusion regarding management of neglected intra-articular proximal tibia fractures and to formulate a protocol.

**Introduction**

**Background:**
Being one of the major weight bearing bones of lower extremity, fractures involving proximal tibia affect function and stability. Fractures involving proximal tibia may be either intra-articular or extra-articular. Although a lot of literature is available regarding classification, treatment modalities, timing of surgeries and selection of fixation methods, universally accepted treatment modalities are still not available for certain types of proximal tibial fractures. We consider worthwhile reporting a case of neglected intra-articular fracture treated surgically after a period of 8 months, since it was hard to find a literature regarding surgical management of neglected fractures around proximal tibia.

**Case Report(s)**
We encountered a 45 years old gentleman, who was brought to out-patient department with history of fall from height (20 foot tree) 8 months back with complaints of inability to use his right lower limb. There was no history suggestive of head injury. The patient was treated by a traditional bone setter who had immobilized the limb in extension for a period of two months using bamboo sticks. He started walking 6 weeks after removal of native splint, but was not able to fold his knee and had severe pain around right knee while bearing weight. He also noticed deformity around right knee. Then he had gone to a hospital where he was advised surgery, but had absconded due to fear of surgery. He presented to us 8 months after injury.

On examination he was moderately built and nourished, with no other significant findings in general physical examination. He was not a diabetic or a hypertensive. Local examination revealed a swollen knee with laterally subluxated tibia. Knee was in varus with significant tenderness in the medial tibial condyle and palpable fracture line. Knee was kept in 20 degrees of flexion and no further movement was elicitable and attempts were painful. Varus stress test was positive. Cruciates were stable in 20 degrees of flexion. There was no distal neurovascular deficit.

Radiography revealed a Hohl’s Type II fracture-subluxation of the knee which is an entire condyle fracture with fracture line beginning in the opposite compartment and extending across the tibial eminence. Since the alignment and position of fragments were not satisfactory, it was decided to treat the patient surgically. Before, proceeding for surgery it was thought to use lower tibial skeletal traction for a period of four weeks and initially 6 kilograms were used which was gradually increased to 11 kilograms(patient’s threshold) every two days finally. The traction was maintained for a period of two weeks. A femoral distracter was used intraoperatively and conventional anteromedial approach was used. The fracture fragment was exposed, released and was...
aligned. Articular congruity was checked and bone graft from ipsilateral iliac crest was used for subchondral reinforcement at fracture site. A buttress plate was used for stabilisation. Reduction was satisfactory intraoperatively and after stabilisation collaterals were checked. An exaggerated tibio-femoral opening of less than 10 degrees was noted when compared to contralateral site, so it was considered not to go for a lateral collateral ligament repair at same sitting. Intraoperative range of motion attainable was 0 to 120 degrees.

Patient started knee flexion on day 2 and gradually increased. Non weight bearing mobilisation was allowed for 8 weeks and after visualisation of callus formation partial weight bearing was started. Full weight bearing was started from 14 weeks. There was no extensor lag at one year and flexion was possible up to 110 degrees. Although, he complaints of occasional pain on exertion, with a short brace he is now able to carry out all his day to day activities and has also returned to a job.

Discussion

The majority of tibial plateau fractures are secondary to high-speed motor vehicle accidents and falls from heights.1, 2 Tibial plateau fracture results from direct axial compression, usually with a valgus (more common) or varus (less common) moment, and indirect shear forces.3 The direction, magnitude and location of the force, as well as the position of the knee at impact, determine the fracture pattern, location, and degree of displacement.4 Although plenty of literature is available regarding tibial plateau fractures, treatment of neglected fractures had not been discussed in detail elsewhere. So it was considered not to go for a lateral collateral ligament repair at same sitting. Intraoperative range of motion attainable was 0 to 120 degrees.

Intra-operatively a femoral distracter was used to achieve reduction. A medial T- buttress plate was used for fixation. Injury to the collateral ligaments has been reported to occur in 7% to 43% of tibial plateau fractures, and rupture of the anterior cruciate has been reported in up to 23% of high-energy injuries.7 Meniscal injuries have been reported in up to 50% of tibial plateau fractures; in split-type fractures, the meniscus may be incarcerated within the fracture site.10, 11 & 12 Ligamentous injuries may be difficult to diagnose on initial examination during the acute phase. Varus and valgus stress testing of the knee in near-full extension performed under fluoroscopy with sedation in the emergency department or under general anaesthesia in the operating room may be of help.13, 14 Any widening of the femoral-tibial articulation greater than 10Å, upon stress examination indicates ligamentous insufficiency.7 Our patient had lateral collateral ligament laxity but it was not more than 10 degrees opening up and so it was considered to manage conservatively.

Conclusion

To conclude, surgical stabilisation of a neglected proximal tibia fracture can yield good functional outcome. Although our patient had a good functional outcome, we need more number of cases to come to a conclusion regarding management of neglected intra-articular proximal tibia fractures and to formulate a protocol.
References

Illustrations

Illustration 1

Preoperative radiograph

Illustration 2

Postoperative radiograph
Illustration 3

Extension without lag

Illustration 4

Flexion upto 110 degrees
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