Management of Calcaneal Fracture with the Ilizarov Technique

Many methods exist for reduction of intra-articular calcaneal fractures with joint depression including, open and closed techniques with internal and external fixation.

Ilizarov External Fixator

This approach allows for stable fixation, rigid compression and early radiographic healing.

Using the Ilizarov technique, excellent reduction is achieved and immediate post-operative weight-bearing is allowed.

- Two cases of intra-articular calcaneal fractures closed reduced with the application of external fixation devices are presented.
- Anatomic reduction of deformities as evidenced by clinical examination and radiographic findings were appreciated in both patients. Functional capabilities improved rapidly and discomfort levels were greatly reduced. Adequate bony healing was noted radiographically at four weeks in both patients.
- Traditionally, surgical treatment for severe calcaneal fractures has included ORIF with subsequent casting and immobilization and non-weight bearing for a period of up to twelve weeks.
- An advantage of using external fixation devices is the avoidance of extensive soft dissection. Remodeling of the pedal deformities may also be achieved by means of reducing pre-existing soft tissue, osseous, and biomechanical conditions.

Using external fixation devices, excellent compression and rigid immobilization are achieved and immediate post-reduction weight-bearing is allowed. Further, the ability to achieve additional compression or distraction at the level of the deformity is allowed. Rapid bony healing is also observed along with improvement of clinical symptoms.

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Special Acknowledgement
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PATIENT RESULTS

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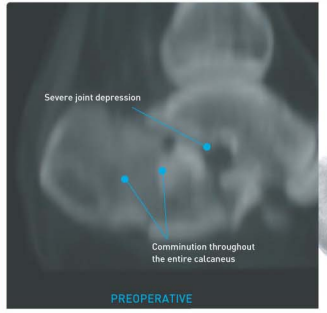

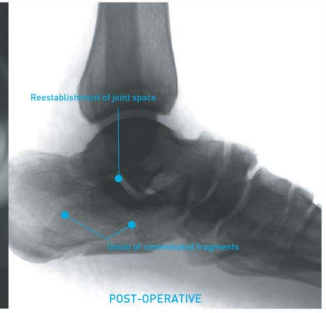

Preoperative condition
Patient suffered an acute intra-articular left calcaneal fracture secondary to a fall. The injury is fixated three weeks status-post fall.

Post-operative condition
Patient is status-post repair of calcaneal fracture with subtalar joint arthrodiastasis by application of a spatial Taylor external fixator.

Long-term outcome
External fixator is removed after ten weeks. The patient reported no post-operative complications. The calcaneus is noted to be in a rectus position. Patient is ambulating pain-free.

Resolution of symptoms and evidence of radiographic healing are appreciated without complications following 10 weeks of external fixation.

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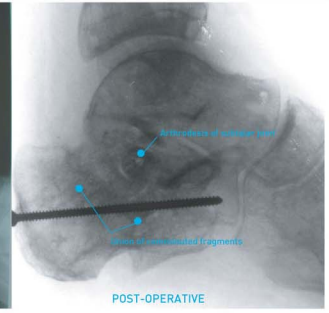

Preoperative condition
Patient is four months status-post ORIF of an intra-articular left calcaneal fracture. Patient presented with malunion of the fracture, severe calcaneal valgus, and a fibrous talocalcaneal coalition.

Post-operative condition
Patient required removal of majority of internal hardware, resection of fibrous coalition, subtalar joint arthrodesis, and percutaneous tendo-achilles lengthening. Pat was placed in an Ilizarov external fixator, with full weight bearing privileges.

Long-term outcome
External fixator was removed ten weeks after the procedure. Satisfactory bony healing was evident four weeks status-post procedure. No post-operative complications were noted by the patient. Calcaneal position is greatly improved from preoperative condition.

Reduction of osseous deformities from trauma and subsequent unsatisfactory surgical result with symptom-free function and ambulation.