

## Management of gunshot-induced proximal tibia fracture with Ilizarov external fixators

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### INTRODUCTION:

Gunshot injuries of the extremities with bone destruction and soft tissue disruption are associated with significant morbidity, prolonged periods of functional incapacity and hospitalization. These injuries represent a major challenge to orthopedic surgeons to attain successful outcome. We report a patient with gunshot-induced proximal tibia and fibula fracture which was treated with Ilizarov external fixator.

### REPORT:

A 34 years old male presented with a shot over his right knee with extensive wound over anterior knee. X-ray showed comminuted proximal tibia and fibula fractures with bone loss. He underwent multiple debridement and Ilizarov external fixator applied.

Patient defaulted follow-up for three years due to MCO and came back with shortening of 5cm compared to left lower limb. However, he able to ambulate without support and able to resume his work as a fisherman.

Recently, he underwent corticotomy for tibial lengthening and mechanical axis realignment.



Figure 1 (a) & (b): Initial x-rays

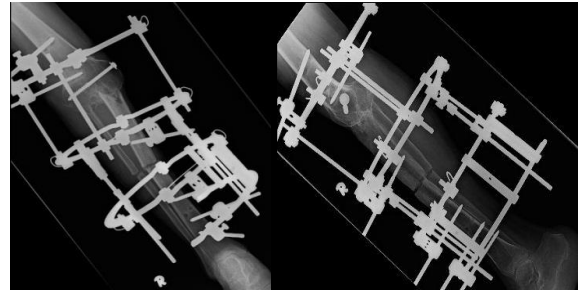


Figure 2: X-rays post corticotomy and mechanical axis realignment

### CONCLUSION:

High-velocity gunshot often lead to extensive soft tissue damage and comminuted fractures whose reduction and maintenance with external fixators, as proposed by many authors [1], are difficult to achieve. On the other hand, tensioned transosseous wires in Ilizarov system allow firm fixation and olive wires help to align the comminuted fragments with closed technique. Ilizarov method offers greater mechanical stability and allows progressive reduction, obviating the need for a second intervention in case of malalignment of the fragments during initial surgery. Immediate functions of the affected limb is also possible with Ilizarov frame. Smith and Coney reported 22% incidence of nonunion in nine tibial shaft fractures due to gunshot which was treated with external fixators, meanwhile 45% of them requiring walking aids to ambulate [1]. In contrast, our patient has a better functional outcome than the reported in the literature. Therefore, Ilizarov is such a versatile tool for limb salvaging.

### REFERENCES:

1. Smith DK, Cooney WP (1990) External fixation of high energy lower extremity injuries. J Orthop Trauma 4:7-18