

## Revolutionizing Ankle Joint Salvage: Ilizarov Ring Fixator with Limited Open Reduction and Internal Fixation for Complex Trimalleolar Fractures and Severe Skin Injury – A Compelling Case Report

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### INTRODUCTION:

Trimalleolar fractures are some of the most severe fractures of the ankle joint region, difficult to treat, and often result in the loss of ankle joint function. Trimalleolar fractures constitute 10.56% of the fractures in that area and injuries associated with damage to the skin and soft tissue account for 11.55% [1]. In cases of major trauma with severe skin damage, two-stage treatment may also be implemented, with the first stage involving the use of an external fixator, followed by delayed internal fixation. In our patient, closed trimalleolar fractures with severe skin damage were treated using a single-stage approach, combining limited open reduction internal fixation and an Ilizarov ring fixator.

### CASE REPORT:

A 55-year-old gentleman with no significant medical illnesses presented to the emergency department with a chief complaint of right ankle pain and swelling after being involved in a motor vehicle accident. Physical examination revealed an edematous, deformed, exquisitely tender right ankle with overlying skin damage. Computed tomography of the right ankle showed a complex trimalleolar fracture dislocation [Figure 1].

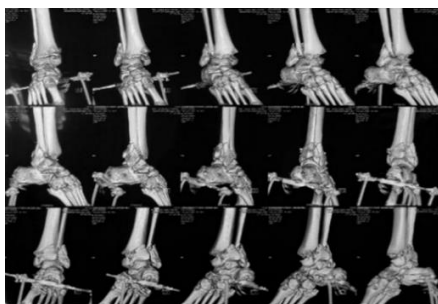


Figure 1: CT reconstruction right ankle

Right ankle open reduction and internal fixation of the posterior and lateral malleolus, Ilizarov ring fixation, and olive wire interfragmentary compression of the right medial malleolus were performed [Figure 2a-b]. The hinge system was initiated at 6 weeks to allow ankle movement in the sagittal plane [Figure 3].



Figure 2: Radiographs of right ankle

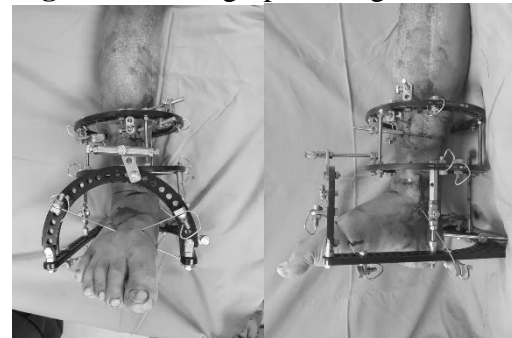


Figure 3: Ilizarov ring construct

### CONCLUSION:

The Ilizarov technique for ankle joint fracture repair promotes complete healing, minimizes tissue trauma during surgery, and reduces patient stress compared to two-stage treatment. It facilitates effective post-operative care, ensuring optimal recovery and early ankle joint motion in the sagittal plane.

### REFERENCES:

1. Multicenter follow-up study of ankle fracture surgery. Xu HL, Liu LM, Li X, et al. *Chin Med J.* 2012;125:574–578