

MANAGEMENT OF COMPOUND GAP NON-UNION OF TIBIA BY DISTRACTION OSTEOGENESIS WITH ILIZAROV FIXATOR : A CASE REPORT

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INTRODUCTION

- The treatment of tibia bone loss can be challenging because of associated co-morbidities such as soft tissue problems infection, deformities, adjacent joint contractures and socio-economic factors.
- Different surgical options for the treatment of bone loss have been recommended like bone transport, vascularized fibular graft & induced membrane.¹
- Distraction of callus over osteotomised bone by preserving periosteum overlying the bone, gradual distraction will lead to formation of new bone as the callus passes through all the phases of bony maturation.²
- Living tissue when subjected to slow steady traction becomes metabolically activated in both the biosynthetic and proliferative pathways.
- The distraction osteogenesis method has the potential to correct deformity, bone and soft tissue loss and limb length discrepancy simultaneously.³

AIM

To assess outcome of corticotomy and distraction with ring external fixator in the management of a case of compound gap non-union of tibia

METHODS

23 yr old Male with alleged history of fall from height.
sustained open fracture both bones of right leg distal 1/3rd
with 7cm bone loss

Initially managed by thorough wound debridement & tibia
temporarily stabilized with ankle spanning external fixator.

Presented **3 months after injury** with infected non-union
of right tibia with 7cm gap

Patient was explained the details of planned procedure and
shown ring external fixator to be applied.

Fracture site freshened and stabilized with Ring fixator frame.
Corticotomy was done at proximal metaphysis of tibia.



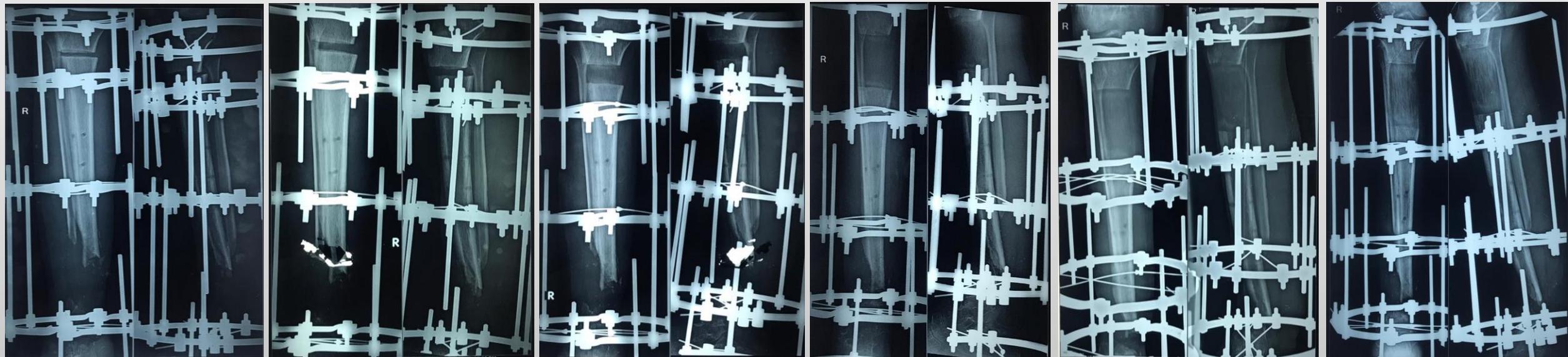
Distraction was started at non-union site at 0.5mm/day, 0.25mm 2 times a day for 1 month.



Distraction at corticotomy site started on 10th day post-operative at the rate of 1 mm/day, 0.25 mm 4 times a day.



Patient was followed-up each month clinically. Radiographs were done at each follow-up.



Follow-up
after 1 month

After
2 months

After
3 months

After
4 months

After
5 months

After
6 months

RESULTS

- Limb length of 7cm was achieved as a result of gradual distraction.
- Good function of limb was regained by regular exercises and weight bearing during entire period of 6 months.
- Regeneration of bone by callus distraction was good



CONCLUSION

Ilizarov Fixator has advantages of continuous compression to achieve union, lengthening to fill bone gaps and equalize lengths, correct deformities, and it is a promising technique in the management of gap non-union of tibia.

ACKNOWLEDGEMENTS

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