

## A COMBINED ACUTE CORRECTION OF TIBIA MALUNION AND GRADUAL EQUINUS CORRECTION IN A VASCULAR-BYPASSED LIMB

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### INTRODUCTION:

A combined tibia malunion and gradual correction of ankle deformity is a complex and challenging surgery. Deformity correction of the lower limb requires thorough knowledge of anatomical parameters. This is an aspiring case of a combined acute oblique plane deformity correction and gradual equinus correction in a vascular-bypassed limb using ilizarov external fixator.

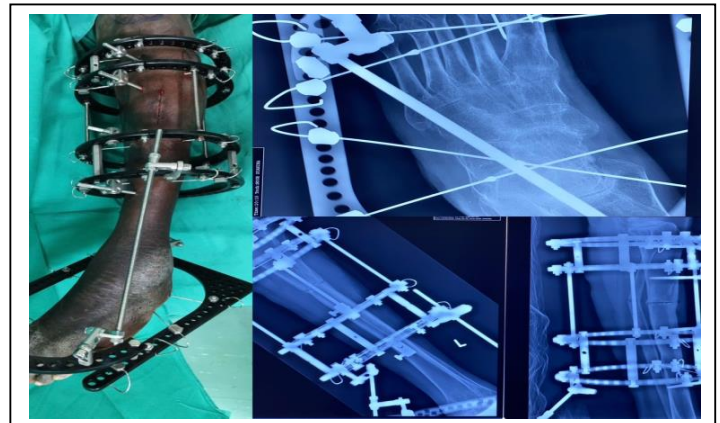
### REPORT:

A 29-year-old man, who is semi-dependent with crutches presented with a varus left leg and ipsilateral equinus ankle resulting from previous his injury. In June 2019, he sustained a closed fracture of the left tibia complicated with popliteal artery injury and common peroneal nerve injury. He was treated with leg fasciotomy, vascular bypass surgery and spanning external fixator. Pre-operatively, the centre of rotation of angulation (CORA) was measured from radiograph using the malalignment test based on Paley et al.<sup>1</sup> Plain radiographs revealed tibia malunion with varus angulation of 19 degrees. He underwent a corrective osteotomy of the left tibia, fibulectomy and gradual correction of the left ankle via ilizarov external fixator. Intra-operatively, closed wedge osteotomy was performed to achieve good cortical contact while avoiding tension of prior vascular bypass. Early outcome at 2 weeks follow-up revealed no loss of tibia reduction and clinical improvement of ankle equinus deformity.

### **Figure 1: Pre-operative image of left leg with varus and ankle equinus deformity**



**Figure 2: Post-surgery correction of varus deformity & ankle equinus with IEF**



### CONCLUSION:

The “law of tension stress” states that under effect of slow and gradual distraction bone and soft tissues would regenerate. The IEF is a stable circular external fixator with gradual corrections provides good outcome avoiding insult to soft tissue and surrounding vasculature.

### REFERENCES:

1. Dias RS, Harshavardhan JKG, Tibial Deformity correction by Ilizarov method. Int J Res Orthop 2018; 4;321-5
2. Khurshid Ahmad, Results of Ilizarov External Fixation in Rigid Equinus Deformity: An Experience of 30 patients; Orthopedia Traumatologia, 2018; Vol 20