

# A NEGLECTED ANKLE FRACTURE: DISTAL FEMORAL LOCKING PLATE FOR TIBIATOLCALCANEAL FUSION

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## INTRODUCTION:

Traumatic ankle fractures are a common presentation, however due to their location minimal soft tissue coverage and blood supply; these fractures pose a surgical challenge to the orthopedic surgeon. Management of the soft tissue injury usually takes precedence thus occasionally fixation of these fractures is delayed resulting in avascular necrosis of the talus, deformity and arthritic changes of the ankle joint.

## METHODS:

We report a case of a 33-year-old gentleman, a chronic smoker who was involved in a road traffic accident and sustained multiple injuries to his right lower limb including an open degloving injury of his right ankle with distal tibia, fibula and talus fractures. Due to the nature and extent of his injury management of the soft tissue took precedence requiring multiple debridements, vacuum dressings and subsequent skin grafting. After adequate soft tissue healing, the patient had developed avascular necrosis of the talus as well as nonunion of the distal tibia and subsequently underwent distal fibula osteotomy and tibiotalocalcaneal arthrodesis (TTCA) of the right ankle using a distal femoral locking plate thru a lateral ankle approach. Post operatively the patient was kept on a below knee backslab and reviewed at two weekly intervals.

## RESULTS:

Healing however was complicated with a surgical site infection 2 weeks post operatively requiring multiple debridement and vacuum dressing application as well as intravenous antibiotic therapy for 2 weeks. The fixation remained stable and subsequent follow up and serial x-rays showed radiographic evidence of callus formation at fusion site at 2 months post op. The patient is not yet weight bearing and is still undergoing follow up.



Preoperative & Post-Operative X-rays



Intraoperative plate fixation

## DISCUSSIONS:

TTCA is a difficult surgery requiring strong fixation methods to increase fusion rates.<sup>1</sup> Several methods of fixation have both been used for TTCA including screws, intramedullary nails, blade plates, external fixation and humeral locking plates.<sup>2</sup> Chi Zhang *et al.* reported that there are higher fusion rates using a humeral locking plate compared to a retrograde nail.<sup>1</sup> Lawrence *et al.* used a femoral locking plate for TTCA and reported that the contour of the Synthes distal femoral locking plate when placed with the condylar portion against the lateral aspect of the calcaneum, mimics the anatomy of the surgical site as well as provides more holes for placement of locking screws into the calcaneum as compared to an inverted locking proximal humerus plate.<sup>3</sup>

## CONCLUSION:

TTCA is a complicated surgery that requires good pre-operative planning and careful patient education towards cessation of smoking, good hygiene and wound care post operatively to prevent post-operative infections. The use of locking plates for TTCA is accepted and provides good fusion outcomes.

## REFERENCES:

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