

Open Trimalleolar Fracture Of The Ankle: A Case Report

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INTRODUCTION:

Open ankle fractures account for about 2 % of all ankle fractures. The most common causes of ankle fractures are twisting injury and fall, followed by sport injury¹. Open trimalleolar fractures dislocation is not common and usually associated with high energy injury like motorvehicle accident. We report our experience in managing this kind of fracture which is quite rare but very relevant to our daily trauma practice.

CASE REPORT:

A 19 years old gentleman sustained injury at the right ankle in a motorvehicle accident. Examination revealed the right ankle were swollen, deformed, tender and associated with 0.5 cm size puncture wound at the medial aspect of ankle. His radiography showed displaced trimalleolar fracture with dislocation of ankle joint. He was started on antibiotic cefuroxime and planned for wound debridement and arthrotomy washout of right ankle, screw fixation of medial and posterior malleolus and syndesmotic joint as well as plating of right lateral malleolus. Patient was positioned supine with a sandbag below his right hip. Operation was done stepwise with the help of image intensifying. The fibula was plated anatomically first, followed by screw fixation of medial malleolus, posterior malleolus and lastly the syndesmotic joint. Patient was discharged well on day 3 of admission and advised for non weight bearing for 6 weeks. The fracture united by 6 weeks; syndesmotic screw was removed at 8 weeks and patient attained full range of motions right ankle without pain by 12 weeks.

DISCUSSIONS:

Ankle fractures account for about 9% of all fractures, indicating a significant portion of trauma workload¹. The two commonly used classifications of ankle injury are Denis Weber AO classification and the Lauge-Hansen classification. Generally, displaced trimalleolar fractures are treated surgically and the aim of fixation is to achieve a stable anatomical reduction of talus in the ankle mortise and

correction of the fibula length as a 1mm lateral shift of the talus in the ankle mortise reduces the tibiotalar contact area by 42%² and shortening of the fibula length by 2mm will lead to significant joint contact pressure¹. Fixation of the medial and lateral malleolus are well established, but, fixation of posterior malleolus has been debated among surgeons; however, most orthopaedic surgeons will fix the posterior malleolus if it is greater than 25% of the distal articular surface³. Trimalleolar fracture is unique in such a way that the fixation should be done stepwise and meticulously as the outcomes including the operation time, soft tissue management and posttraumatic arthritis depend on them.

CONCLUSION:

Generally, various surgical technique can be used to fix ankle fractures but they should be individualized and preoperative planning and soft tissue handling are the upmost important factors in determining the outcome of the treatment.

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