

TECHNICAL TIP: TRIMALLEOLAR FRACTURE AND FIXATION OF THE MEDIAL MALLEOLUS USING A BONE ANCHOR AND A TRANSOSSEOUS TUNNEL WITH A TENSION BAND TECHNIQUE

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Introduction

A 28-year-old sustained a trimalleolar fracture after a football injury. A decision to proceed with open reduction and internal fixation was made and concerns were raised in regards to the small medial malleolar fragment

Case Report

The posterior and lateral fractures were dealt with through a modified posterolateral approach. When addressing the medial malleolar fragment through a standard medial approach, it became early on apparent that there was no sufficient room to proceed with cannulated screws. Due to the lack of a hook plate in our institution, we proceeded with a 7mm bone anchor that was placed through the fracture site in the cancellous bone substance of the medial malleolar distal fragment. A unicortical screw was placed 10mm proximally to the fracture site on the medial side of the distal tibia and a transosseous tunnel was drilled with a 2mm drill from proximally to distally exiting in the fracture site. An Ethilon 1 suture was passed through the tunnel in a medio-lateral fashion and was used as a suture passer to shuttle the bone anchor sutures through the tunnel. Then, we reduced the fracture, holding it gently with pointed reduction forceps and tightened the bone anchor sutures around the head of the screw we had previously placed, thus achieving a relatively stable construct and a reasonable compression. The patient was then placed in a below knee backslab for 6 weeks, fully non weight bearing and proceeded to full healing and full recovery

Discussion

We aim to bring our technical tip into consideration as a viable fixation alternative, especially in institutions where fixation implant diversity is minimal.

References

Parada SA, Krieg JC, Benirschke SK, Nork SE. Bicortical fixation of medial malleolar fractures. *Am J Orthop (Belle Mead NJ)*. 2013;42(2):90-92.

Loveday DT, Arthur A, Tytherleigh-Strong GM. Technical tip: fixation of medial malleolar fractures using a suture anchor. *Foot Ankle Int*. 2009;30(1):68-69. doi:10.3113/FAI.2009.0068

Georgiadis GM, White DB. Modified tension band wiring of medial malleolar ankle fractures. *Foot Ankle Int*. 1995;16(2):64-68. doi:10.1177/107110079501600202

