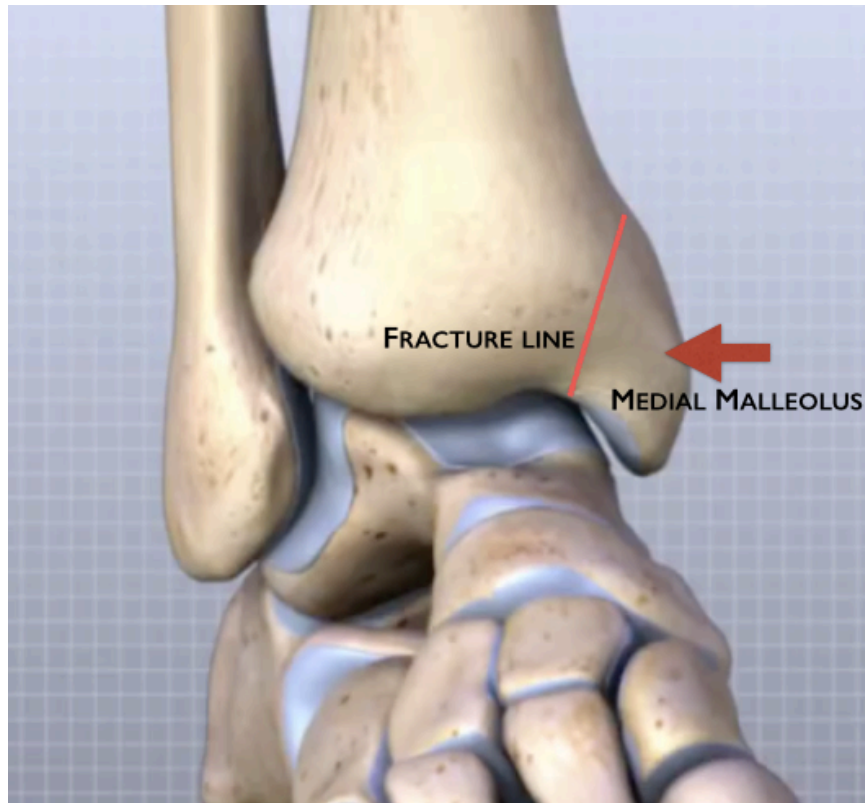


Medial Malleolar Stress Fractures

An uncommon but not to be missed injury

Dr. Ruben Branson



Incidence:

Medial malleolar stress fractures are relatively uncommon 0.6-4.1% of all stress fractures¹ but can cause significant morbidity and lost game time. These fractures occur in runners and running sports and are more common in skeletally mature athletes

Clinical presentation:

Stress fractures of the medial malleolus (Inside part of the ankle – see diagram) should be suspected in patients involved in athletic and running sports who have experienced persistent and unexplained pain over the medial malleolus.

In football codes there may be an association between medial malleolar stress fractures and anterior ankle impingement with one theory being that the stress fracture may be the end stage of chronic anteromedial ankle impingement secondary to spurs². There should be a high index of suspicion in worsening symptoms of anterior impingement with medial malleolar pain.

The fracture line is usually runs vertical from the tibial plafond, although may run obliquely through the medial malleolus and may extend to the external cortical surface³.

Medial malleolar fractures are inherently unstable and prone to non-union. They should therefore be considered a high-risk stress fracture.

Investigation

Medial malleolar stress fractures are generally not visible on Xrays. MRI scans have a high sensitivity and high specificity for bone stress^{4,5}. CT scans may be needed to further evaluate the full extent of the fracture line and assess cortical bone.

Medial malleolar stress fractures with no fracture line visible on Xray or CT may be treated with aggressive immobilisation (strict non weight bearing / immobilization below knee cast or boot for 4- 6 weeks).

Stress fractures with a fracture line demonstrated on X-ray or CT require surgical intervention - open reduction and internal fixation (ORIF). This remains the treatment of choice as healing can take up to 8 months with conservative treatment^{6,7}. In elite athletes ORIF can lead to early recovery and return to sport^{6,7,8,9}. Anterior ankle impingement should be treated at the same time.

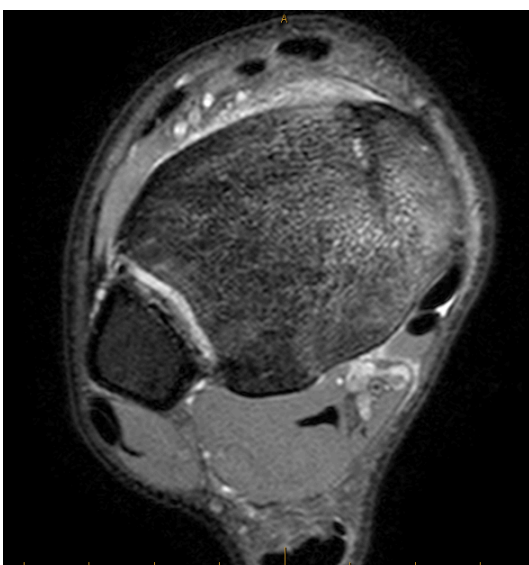
“The key to diagnosing and treating medial malleolar stress fractures appropriately is a high index of suspicion and careful clinical examination looking for bony tenderness on the medial malleolus.”



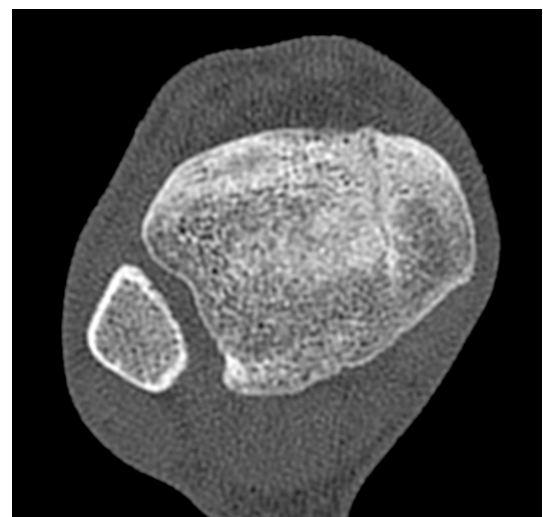
MRI Coronal



CT Scan Coronal



MRI Axial T2



CT Axial

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