

Introduction

This term describes a hyperextension injury to the first metatarsophalangeal joint. The term “turf” relates to the artificial playing surface that has been blamed in part for this injury.

Seen in most sports played on artificial turf it is more prevalent in contact sports or sport where contact can occur more frequently. The mechanism of injury is that of forced hyperextension however the coupling of this movement with increased foot fixation (especially on artificial surfaces) places the foot in a vulnerable position. Due to the cleat penetration into the turf the foot becomes fixed and not free to recover from this harmful position.

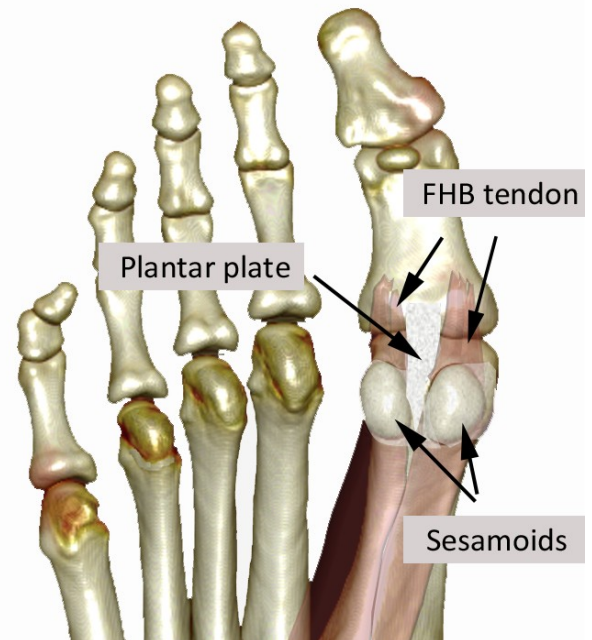
Etiology

There are usually several structures that yield under this load making the condition often complex to treat. Dorsally the joint will become impinged with excessive compression of the articular surfaces. This presents as joint line tenderness and usually an obvious dorsal joint swelling. Plantarly, the flexor hallucis brevis tendons (whilst enveloping the sesamoids) extend into the proximal phalanx. Discrete tendonopathies are very common however worse still a fracture of the sesamoids may occur with this injury particularly debilitating.

Injuries to the plantar plate are also commonly sustained. The plantar plate is a fibrocartilagenous thickening that restricts metatarsophalangeal joint hyperextension. If the forces are excessive then this plate can tear and the metatarsosesamoid ligaments also damaged. Should a valgus force to the hallux occur at the time of injury then the medial collateral ligament may also become strained.

Treatment

X-rays are often the first investigation for the injured athlete with ultrasound investigation likely if the X-ray is NAD and yet still significantly painful then an Ultrasound or MRI are considered



Delicate anatomy of the plantar MTP joint

appropriate. Irrespective of these findings it is usual for treatment to commence with a period of offloading. Depending upon the severity of the condition this would involve anything from a cushioned insole to a moon boot. Taping is usually effective as this can work well at limiting dorsiflexion of the hallux whilst adding a form of compression to the joint.

In recalcitrant cases it may be necessary to refer for an orthopaedic opinion. This would usually be when the athlete presented with a sesamoid fracture or plantar plate tear. Note that both of these pathologies may in fact respond to an appropriate treatment regime without the need for surgery.

Take home messages

- Forced hyperextension injury
- Usually involve multiple pathologies to the area
- X-ray should include axial sesamoid views
- Taping to restrict hallux range of motion
- Offloading strategies from simple padding to orthotic control