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Lateral Midfoot Pain in a Basketball Player

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A 17-year-old male basketball player sustained a left foot injury during sudden change of direction and backing on the lateral foot margin, but with no mechanism of distortion, was referred for MRI of the foot (Figure 1). He ceased all the training activities due to severe pain and feel of instability in the region of the lateral foot aspect. A month before the injury, he had had intense trainings two times a day with no complaints. On admission, four weeks after the injury, moderately antalgic gait with sparring of the left foot was seen. Mild swelling of the left foot in projection of the calcaneo-cuboid joint with significant palpable tenderness of the plantar projection of the cuboid was demonstrated. Painful and limited inversion and adduction of the left foot was shown. No neurological or vascular abnormalities of the left foot were noted.

Question 1. What abnormalities are shown in the Figure 1?

Question 2. What is the mechanism of injury and which sports activities are prone the most to this kind of injury?

Question 3. Which enthesopathy is frequently associated with this type of injury?

Question 4. What are treatment options for this entity?

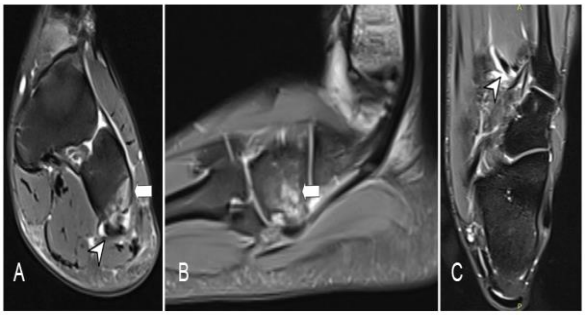

Figure 1

Answer 1. Figure 1 shows bone marrow oedema seen affecting the latero-plantar ridge of the cuboid (Figure 1A and 1B, arrow) in terms of stress reaction with associated peroneus longus tendon sheath effusion seen below (Figure 1A, arrowhead) and extending to the level of the 1st metatarsal attachment (Figure 1C, arrowhead) in keeping with tenosynovitis. Given findings comprise the clinical entity named cuboid syndrome that is believed to be caused by repetitive or strenuous eversion of the cuboid leading to calcaneocuboid joint subluxation [1].

Answer 2. There are three recognized mechanisms of the cuboid syndrome: lateral ankle sprain,

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overuse peroneal tendinopathy causing repetitive cuboid eversion, and levering of the lateral foot across a protrusion in the ground while running. Long distance runners and ballet dancers are the most frequently affected, however there is a report of an 18-year-old basketball player suffered the same condition [2].

Answer 3. Achilles enthesopathy is significantly associated with the cuboid syndrome, especially in patients with underlying inflammatory arthropathy. The cuboid forms a pulley for the peroneus longus tendon and it is proposed that the fibrocartliage located between the tendon and bone serves as functional enthesis which is antigenic target in rheumatoid arthritis. Interestingly, these patients usually had no localized pain or tenderness on the cuboid, unless there was an associated stress fracture [3].

Answer 4. Manual reduction is the first line management for this entity in terms of pushing the cuboid dorsally followed by subsequent physical treatment with high intensity laser therapy and exercises for foot strengthening. Also, cuboid pad placement in the early recovery is advised so as to prevent further cuboid subluxation [2]. The patient had uneventful recovery with full ability for basketball activities four months after the treatment commencement.

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