IOP - Images

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Case presentation

Seventy-two-year old male who suffers domestic accident due to fall from height (second step of stepladder, approximately 30 cm) with traumatism which included twist and plantar flexion of the midfoot. He consults the ER where he is subject to AP and lateral X-rays, which are interpreted as "normal" (not shown). He is prescribed rest and per os anti-inflammatory drugs. Since symptoms persist, he attends a second consultation and he is prescribed MRI and, afterwards, CT scan.

Findings and interpretation of the imaging studies

The patient's MRI images show the main disorders focused on the Lisfranc joint, where it shows edema-hyperemia in every bone component (Figure 1). It also shows a fracture at the level of the base of the 2nd metatarsal bone. The fracture fragment involves the plantar third of the base, whereas the remaining bone shows minimal lateral-dorsal displacement (Figure 2). The bases of the 3rd through 5th metatarsal bones also show minimal degree of lateral-dorsal displacement (Figure 3).

With respect to soft tissues, there are peri-articular inflammatory changes, and the rupture of the Lisfranc ligament stands out (C1-M2), characterized by changes in the signal and margins blur (Figure 4). On the other hand, there is edema in the dorsal superficial soft tissues of the midfoot and forefoot (Figure 5).

The foot CT scan confirms bone findings, outlining the limits of the fragment of the base of the 2nd metatarsal bone (Figures 6 and) and shows the gap between the bases of the first and second metatarsal bones (Figure 8).

Resolution of the case on page 334.

Figure 1. Fat-Suppressed Proton Density-Weighted coronal MRI showing bone marrow edema in the first and second foot-cuneiform bones, and also in the bases of the metatarsal bones, especially in the first, second and fourth ones.

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Figure 2. T1-Weighted axial MRI showing bone fragment detached from the base of the second metatarsal bone (white arrow).

Figure 3. T1-weighted axial MRI showing mild lateral displacement of the bases of the second, third and fourth metatarsal bones.

Figure 4. Fat-Suppressed Proton Density-Weighted coronal MRI, which fails to show the C1-M2 interosseous ligament in its expected topography. The signal should be compared to the C2-C3 (arrow point) and the M2-M3 and M3-M4 interosseous ligaments (asterisks).

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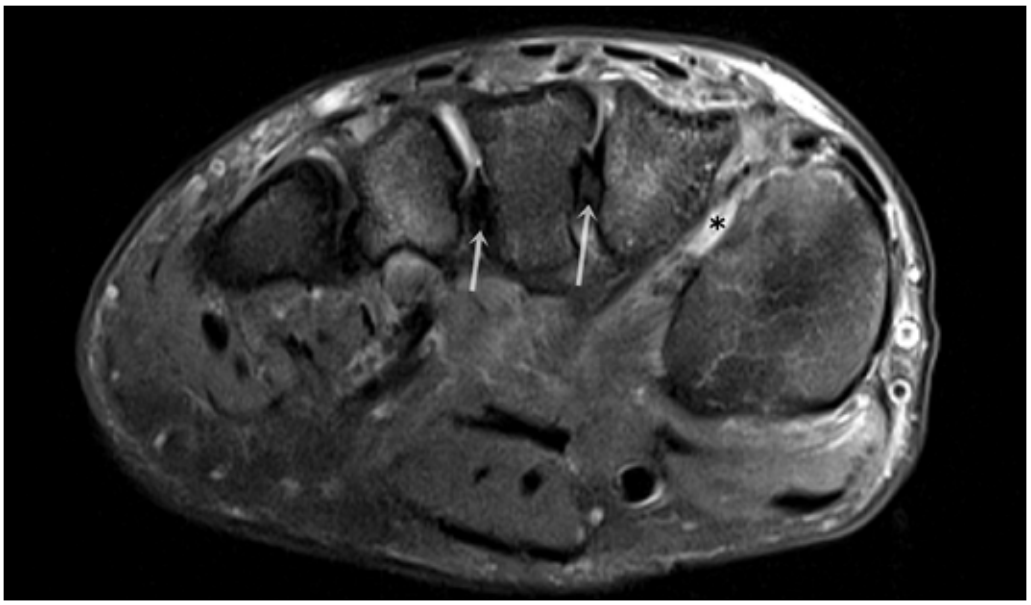

Figure 5. Fat-Suppressed Proton Density-Weighted coronal MRI showing edema in dorsal superficial soft tissues and increased signal in the Lisfranc space (asterisk). It also shows the normal aspect of the M2-M3 and M3-M4 interosseous ligaments (arrows).

Figure 6. Axial CT scan outlining the bone fragment originated in the base of the second metatarsal bone.

Figure 7. 3-D CT scan. The same finding as Figures 2 and 6's, represented in 3-D reformat (arrows).

Figure 8. Axial CT scan. The arrow point shows the gap between the first and the second metatarsal bones.

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