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Dorsal Midfoot Interosseous Compression Syndrome (DMICS)

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Introduction

Dorsal Midfoot Interosseous Compression Syndrome (DMICS) is recognized by many physicians around the world as a relatively common cause of dorsal midfoot pain.We experienced DMCIS patient and through the clinical experience, we want to share the case and review the causes, diagnosis, and treatment of the disease.

Case Report

A 58 years old female with recalcitrant foot dorsum pain for over 1 year was referred to the foot clinic. She complained of pain along with the dorsal aspects of her left midfoot joints during weight-bearing activities. Upon taking the history, she pointed to the area of the metatarsal-cuboid joint as the source of most of her pain. The pain generally worsens with increased weight-bearing activities and either occur just before heel off and at the initiation of propulsion of walking gait. She has had several injections with a steroid and physical therapy for pain before visit foot clinic but there was no improvement of the pain. On physical examination, there is discrete tenderness along the dorsal joint lines of the metatarsal-cuboid joint but no tenderness along the dorsal aspects of the extensor tendons with dorsiflexion resistance applied at the digits. Edema is not present at the dorsal midfoot area. There is no pain with forceful manual dorsiflexion of the forefoot on the rearfoot. However, there is very significant pain with plantarflexion of the forefoot on the rearfoot. On the biomechanical evaluation of her foot, there is moderate rearfoot valgus and ankle instability on her left foot. She couldn't do the squat position due to short Achilles tendon and showed flattened medial arch on the podoscopy. On the imaging study, there was no bony or soft tissue abnormality on her feet (Fig1, 2). We prescribed stretching exercise for her short Achilles tendon and ordered custom made foot orthosis for support her medial and lateral longitudinal arch. After 1 month later, her foot pain was much improved from VAS 7 to VAS 3 on ADLs and VAS 0-1 after 3months later.

Conclusion

It is the repetitive trauma at these dorsal midfoot joint surfaces with each step which causes the pain from DMICS. Treatment revolves around both reducing the inflammation

to the dorsal midfoot joints and trying to eliminate the mechanical factors causing the increased flattening moments on the medial and lateral longitudinal arches. All patients with DMICS have very significant pain with plantarflexion of the forefoot on the rearfoot. Walking barefoot or in low-heeled shoes usually exacerbates the pain, while walking in shoes that are loosely tied with an increased heel height usually eases the pain.

Fig 1. Foot AP X-rays shows no bony abnormalities except mild osteoarthritis on both 1st MP joint.

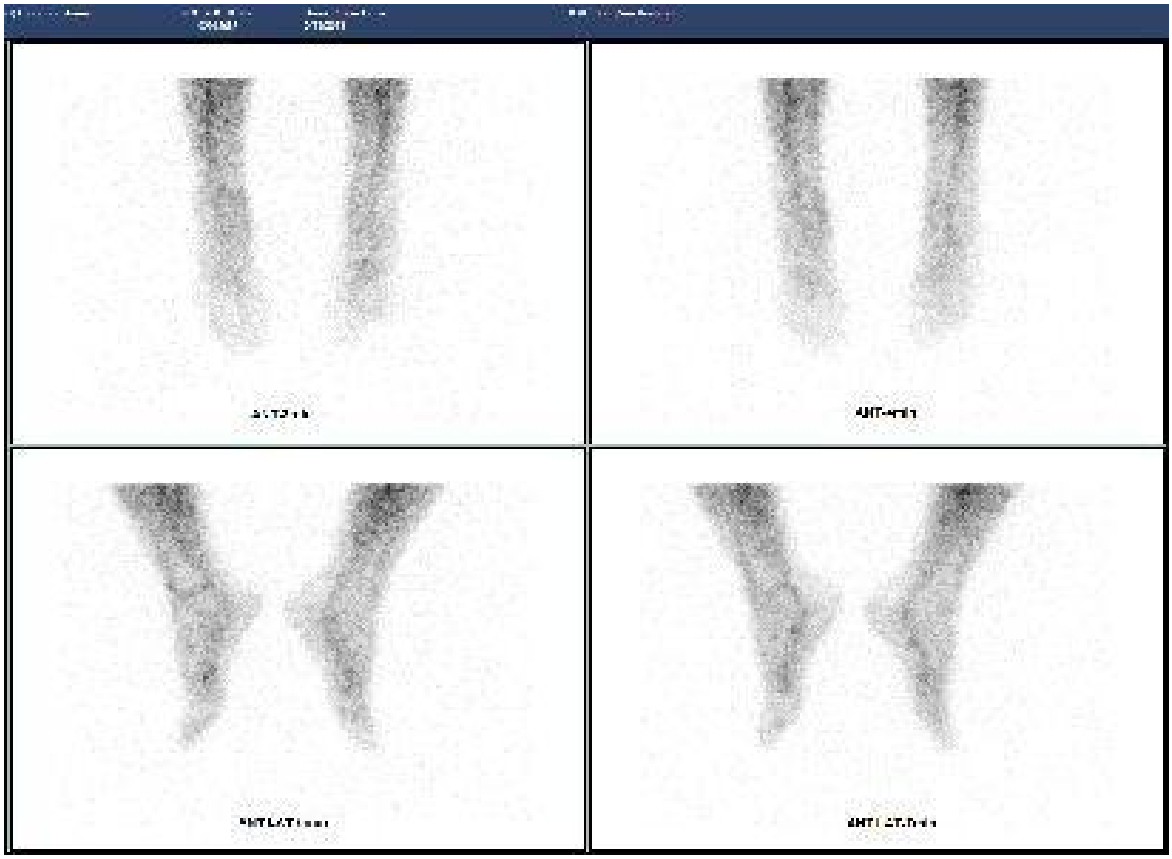

Fig 2. Three phase bone scan shows no asymmetric radiotracer uptake.

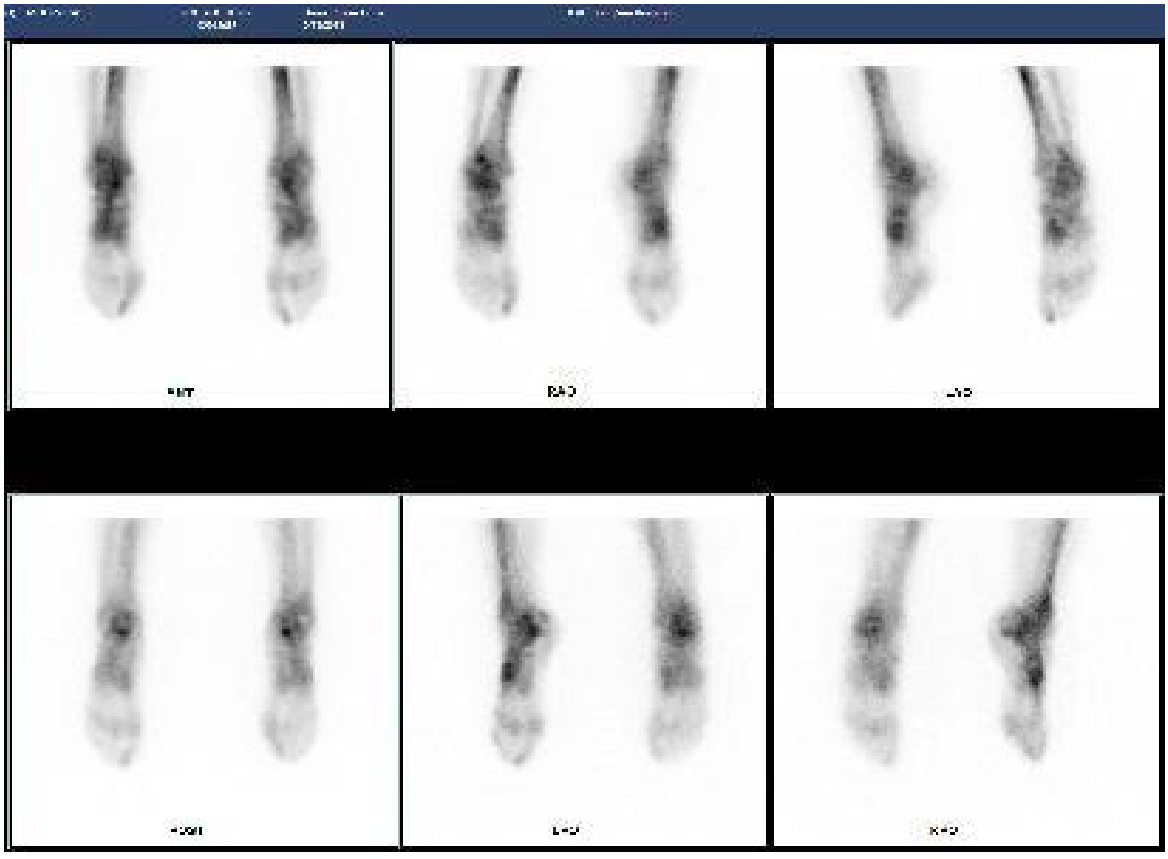

Fig 3. Three phase bone scan shows no abnormally increased radioactivity.