

통증 및 근골격재활

게시일시 및 장소 : 10 월 18 일(금) 08:30-12:20 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 10:00-10:45 Room G(3F)

## **P 1-136**

### **Freiberg infraction misconceived as a metatarsophalangeal joint arthritis: A Case Report**

Kun Woo Kim<sup>1\*</sup>, Kyung Jae Yoon<sup>1</sup>, Jong Geol Do<sup>1</sup>, Jin Tae Hwang<sup>1</sup>, Jae Hyeong Choi<sup>1</sup>, Jin Woo Suh<sup>1</sup>, Yong Taek Lee<sup>1†</sup>

Kangbuk Samsung Hospital, Department of Rehabilitation Medicine <sup>1</sup>

#### **Introduction**

Freiberg disease, also known as a Freiberg infraction, is a form of avascular necrosis in the metatarsal bone of the foot. It generally develops in the second metatarsal, but can occur in any metatarsal bone. Physical stress causes multiple tiny fractures which impair blood flow to the end of the metatarsal resulting in the osteonecrosis. It is a rare condition, occurring most often in young women and athletes. It usually presents as metatarsal pain, and is often difficult to be diagnosed in early stage. Here, we describe a case of Freiberg infraction in second metatarsal bone, which was initially misconceived as other mimicking disease including metatarsophalangeal (MTP) joint synovitis and metatarsalgia.

#### **Case Description**

A 24 year-old woman visited the department of orthopedic surgery in a tertiary-care hospital with right forefoot pain. The pain had developed 3 weeks ago, and she had visited a local clinic and underwent plain radiograph. A plain radiograph showed subtle flattening and sclerotic change in second metatarsal head, which was regarded as normal at initial interpretation. (Fig.1). Ultrasonography revealed the synovial hypertrophy and increased joint effusion in the second MTP joint space (Fig.2). The patient was diagnosed as second MTP joint synovitis and was referred to our hospital. There was no trauma history, and she worked mostly in a standing position. On physical exam, there was local tenderness on second metatarsal head without redness or heating sensation. The patient was diagnosed with metatarsalgia and treated conservatively with non-steroidal anti-inflammatory drug (NSAID) and short leg splint for 3 weeks. Despite of 3 weeks of splinting, the symptom did not improve and she underwent magnetic resonance imaging (MRI). On MRI, there was an ill-defined low signal lesion in second metatarsal head on proton density-weighted image and surrounding diffuse bone marrow edema on T2-weighted image, suggesting Freiberg infraction (Fig. 3-A,B). The patient received NSAID treatment, however, the symptom sustained in her activity of daily living. She visited foot clinic in our department because of persisting pain. We prescribed crutches to avoid the impact on forefoot. She suspended from work and the pain started to improve gradually.

After the sharp pain was relieved, we prescribed the rigid carbon fiber insole with metatarsal dome to relieve pressure under the metatarsal heads. The pain continued to improve and the patient returned to work. Her symptom maintained improved state with slight discomfort. Six months later, she re-visited our clinic. She reported that the pain had remained tolerable state for the last six months, while taking analgesics occasionally. On follow-up MRI, the low signal lesion slightly reduced in extent and the bone marrow edema decreased compared to previous imaging (Fig. 3-C,D).

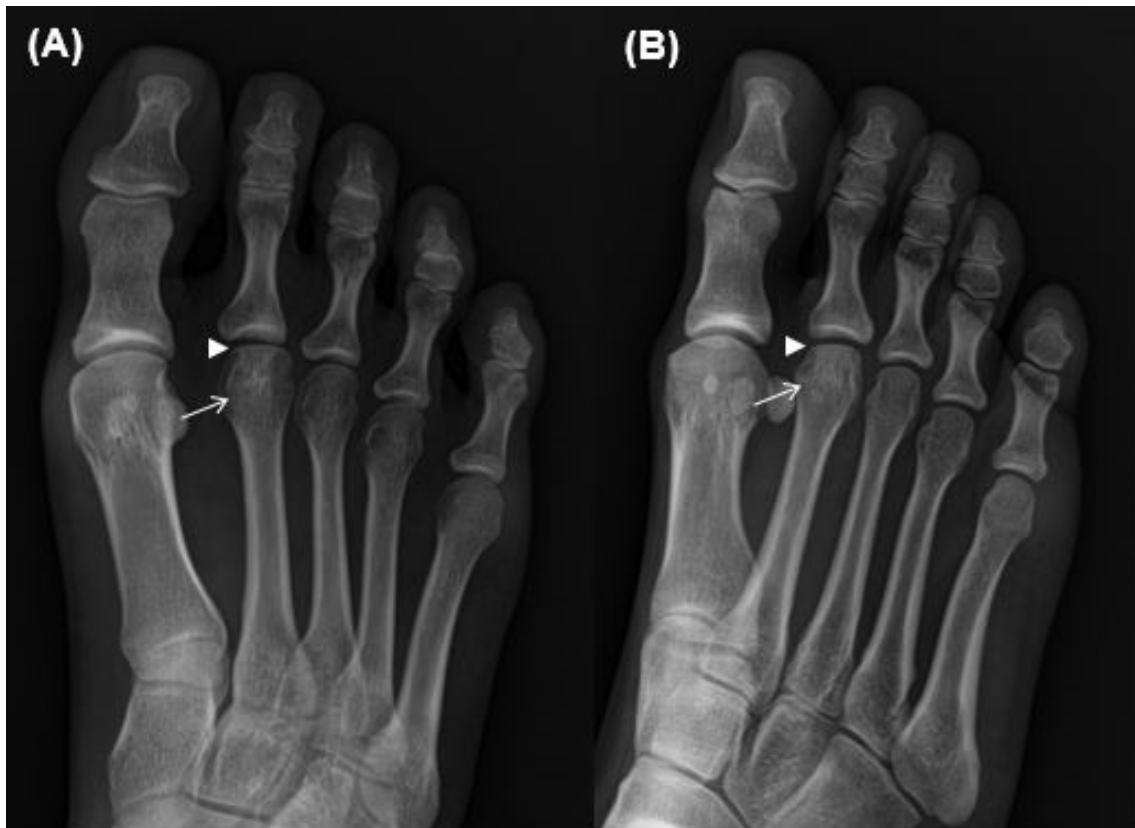


Fig. 1 The plain radiograph of right foot

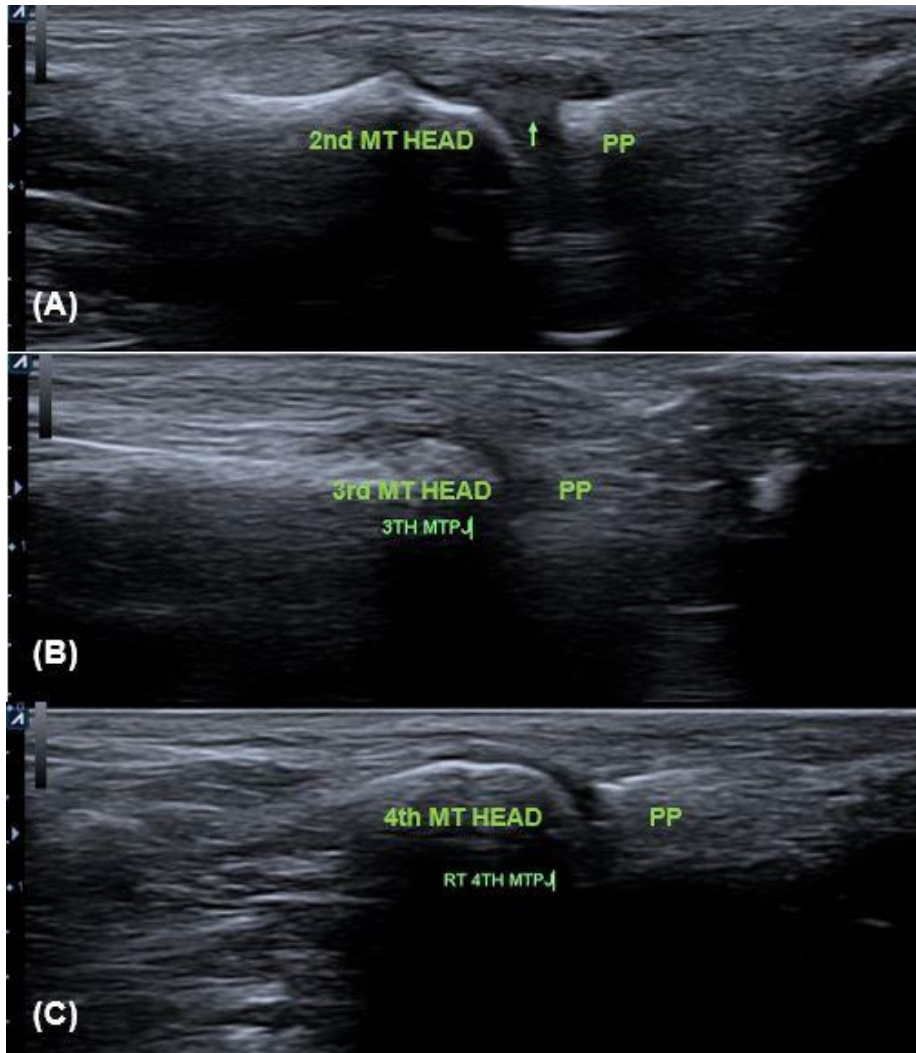


Fig. 2 Ultrasonography of right MTP joints

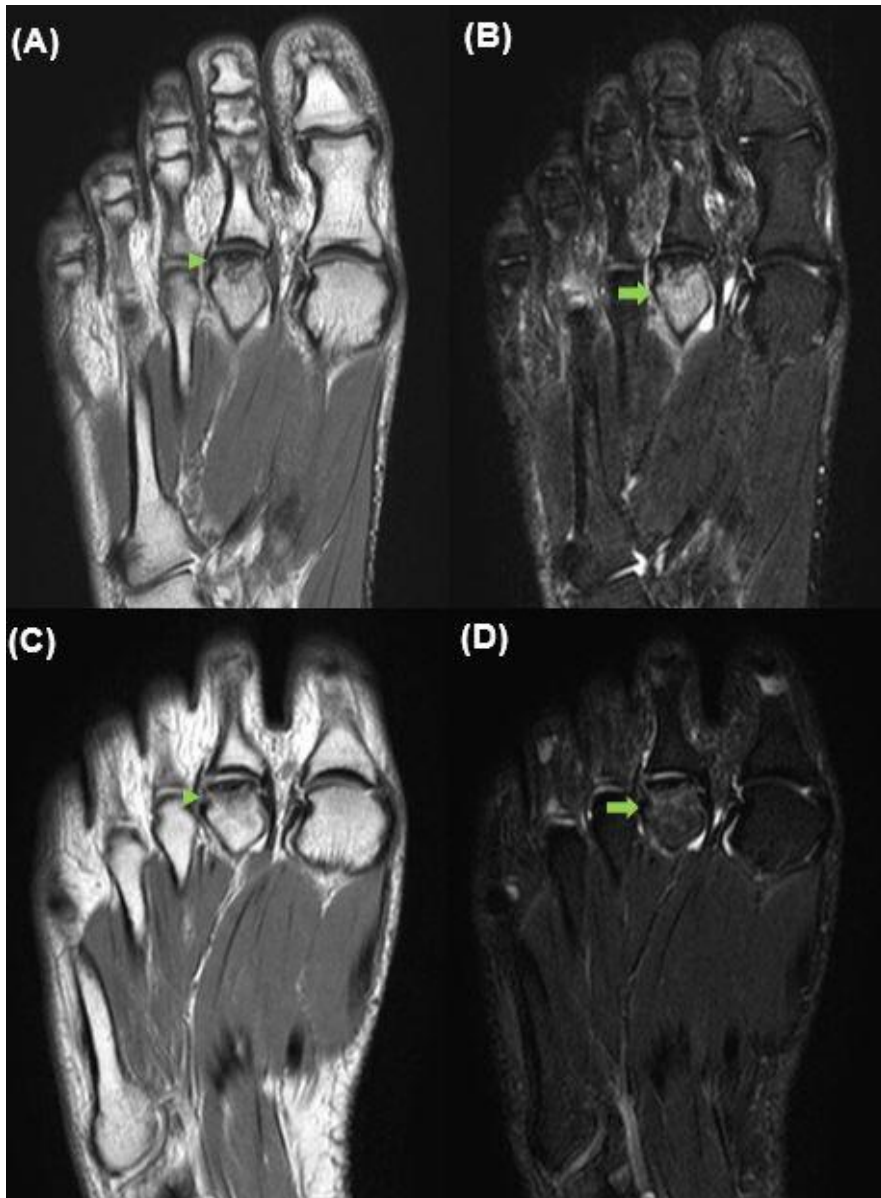


Fig. 3 Initial and follow-up MRI