

# A Case of Painful Os Styloideum in the Midfoot (Tarsal Boss)

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## INTRODUCTION

Lumps on the dorsal site of the foot are a frequent finding and can represent accessory bones, malunited fragments of previous bone fracture, osteophytes, soft tissue masses or fluid collections. They can manifest as pain or limited motion. Irritation from shoes and straps or sport activities can result in significant discomfort [1].

## CASE PRESENTATION

A 24-year-old patient presented with pain in the right midfoot, between the first and second metatarsals proximally, which lasted for a year and a half. He also experienced a tingling sensation in his big toe. The pain worsened during riding a bike, running or walking. He denied a previous injury. He expressed pain to palpation in the space between bases of first and second metatarsals. The transverse arch of the foot appeared flattened.

MRI examination demonstrated a small bone fragment at the dorsal aspect between the first and second tarsometatarsal joint with a bone marrow edema signal as well as some edema signal of the surrounding soft tissues on the fluid sensitive sequences. The marrow signal of adjacent bones had normal intensity. The signal intensity of both toe extensor tendons running near the fragment was preserved. The patient was referred to the orthopedic surgeon for further workup.

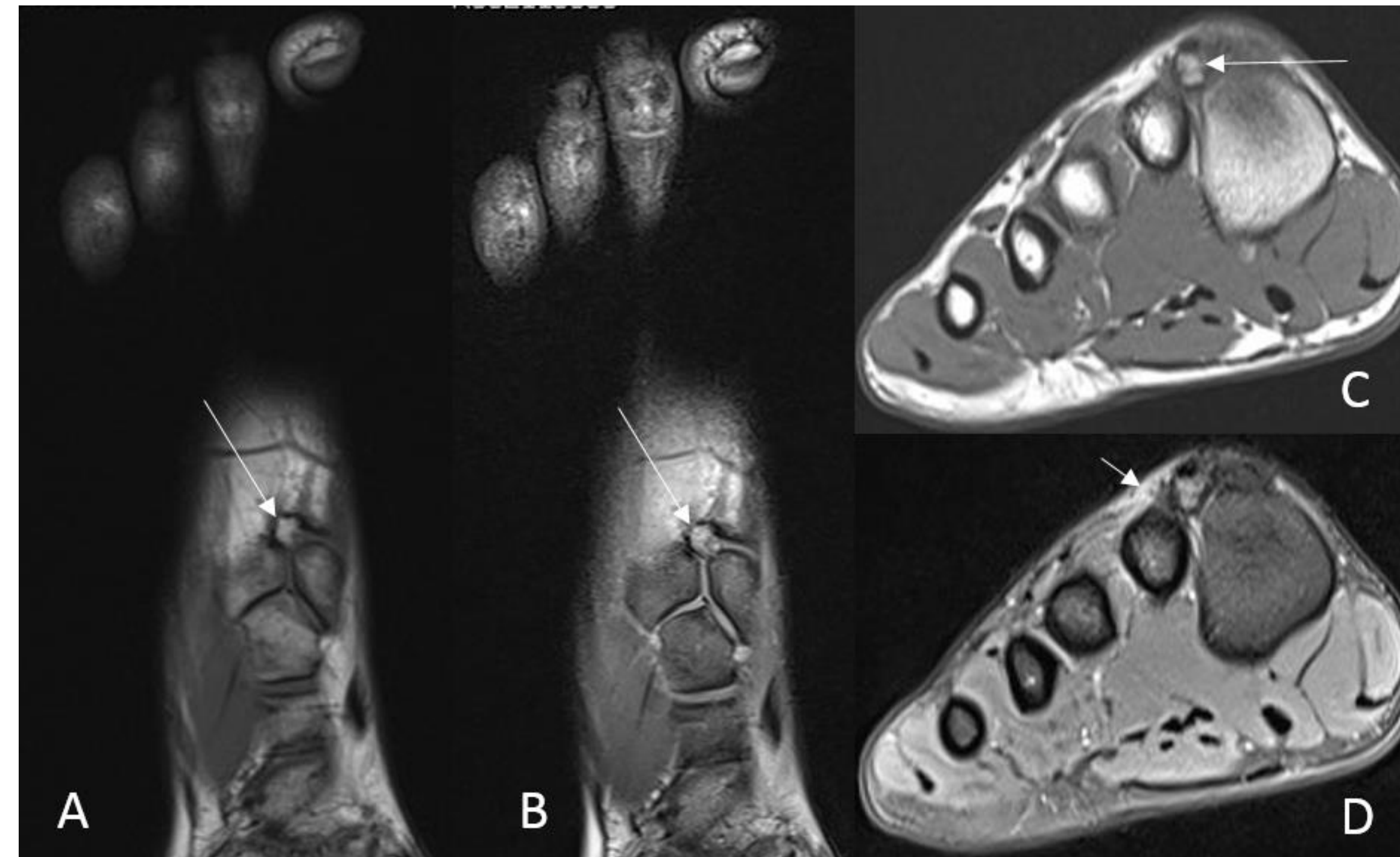


Figure: Tarsal os styloideum. MRI of the right foot.

Coronal proton-density (PD) images without (A) and with (B) fat suppression, transverse T1 (C) and PD fat-suppressed (PDFS) (D) images demonstrate bone fragment at the dorsal aspect between the first and second tarsometatarsal joints (long arrows). On sagittal images (not shown) the fragment was not visible owing to the slice thickness limitation. Note the high signal intensity of the fragment on PDFS images (B,D) indicating bone marrow edema of the fragment. Also note the increased PDFS signal (short arrow in D) indicating a possible soft tissue edema, although it could also be attributed to the incomplete fat suppression, which is possible in this location.

## DISCUSSION

The search in PubMed with keyword „os styloideum“ yielded 26 results with common overlap with results of the search with keyword „carpal boss“. The search with added word „tarsal“ yielded only two results, respectively, both describing dorsal osteophytes or bony spurs rather than a true bone fragment.

In the presented case, the bony fragment could represent an old abrasion. However, the patient categorically denied any injury to the foot and no defects of the neighboring bones were identified on MRI.

The tingling sensation in the first toe which patient described could represent a possible entrapment of the deep peroneal nerve [5,7].

## CONCLUSIONS

To the best of our knowledge, this is the first documented case of a bone fragment in the midfoot dorsal next to the first and second tarsometatarsal joints, a so-called tarsal boss, with the edema of the bone marrow and surrounding soft tissues as well as clinical symptoms of deep peroneal nerve compression.

### References:

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