Atypical Foot Pain in a 26-year-old Male

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PATIENT HISTORY

CHIEF COMPLAINT:

26-year-old male long-distance runner presents to clinic complaining of

- Pain over inferomedial aspect of right foot
- Pain near navicular prominence
- Duration: 6 months
- Aggravated by running
- Refractory to oral nonsteroidal anti-inflammatories

Concomitant Illnesses:

- Plantar fibroma
- Chronic plantar fasciitis

PHYSICAL EXAMINATION

- Vital signs: noncontributory
- Inspection: no lesions or erythema
- Palpation: Tenderness noted on the inferomedial aspect of right foot at the insertion of the posterior tibial tendon on the navicular bone
- No evidence of effusion
- Lower extremity muscular strength 5/5
- Right ankle: Pain free; full active and passive ROM
- Biomechanical gait analysis: significant weakness of gluteus medius muscle
- No distal sensorimotor deficits

DIAGNOSTIC WORKUP

IMAGING:

X-ray of the right foot revealed

- Type II accessory navicular bone

MRI of the right foot demonstrated

- Subchondral edema in the type II accessory navicular;
- Subchondral marrow edema in the anterolateral talar dome

Figure 1. Density noted on radiograph off right foot

WHAT IS YOUR DIAGNOSIS?

A. Posterior Tibial Tendonitis

B. Navicular Stress Fracture

C. Accessory Navicular Syndrome

D. Mueller-Weiss Syndrome

Excluded Differentials:

- Posterior Tibial Tendonitis – Pain is typically over posterior aspect of medial malleolus but no evidence of tendon involvement was found on MRI
- Navicular Stress Fracture – No evidence of primary navicular etiology on MRI
- Mueller-Weiss Syndrome – spontaneous osteonecrosis of primary navicular, no evidence of primary navicular etiology on MRI

Final Diagnosis:

- Accessory Navicular Syndrome
- Aggravation secondary to trauma, chronic irritation from footwear rubbing against bone, or overuse with poor biomechanics
- Presents with medial-sided foot pain, TTP at insertion of posterior tibial tendon, +/- swelling
- Treatment: Typically oral anti-inflammatories, physical therapy, or surgery in refractory cases

DISPOSITION

TREATMENT

- Oral non-steroidal anti-inflammatories were unsuccessful
- Foot and lower leg strengthening exercises were unsuccessful
- Patient prescribed topical 1% diclofenac sodium gel for pain
- Physical therapy was prescribed to address gluteus medius weakness and correct biomechanical imbalance

FOLLOW-UP

- Patient's pain responded well to topical 1% diclofenac sodium gel.
- Physical therapy was progressive.
- Overall condition significantly improved with time

REFERENCES

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ABSTRACT

Accessory navicular syndrome (ANS) is a symptomatic aggravation or inflammation of an accessory navicular bone. It is the second most common accessory ossicle of the foot. There are three variants, of which type II is the most common. It is large and forms a fibrocartilage synchondrosis, or immovable cartilaginous joint, with the navicular. Of the three variants, type II has the greatest propensity to become symptomatic. Often times, as in this case, the etiology stems from poor biomechanics; it may also occur secondary to trauma.

Patients typically complain of medial sided foot pain and swelling, as well as tenderness to palpation at the insertion of the posterior tibial tendon (PTT) on the navicular. X-rays will reveal an accessory navicular bone. Magnetic resonance imaging (MRI) will likely demonstrate subchondral edema in the accessory navicular. Generally, this condition is treated with non-steroidal anti-inflammatories (NSAIDs) for pain and physical therapy to correct biomechanical deficiencies. In more severe cases, immobilization may be utilized in conjunction with physical therapy. Surgical intervention may be necessary for refractory cases.

In this case, a 26 year-old-male long-distance runner presented with a six-month history of pain over the inferomedial aspect of his right foot near his navicular. His pain was worse with running, particularly on initial foot strike. The injury was refractory to foot and ankle strengthening exercises, NSAIDs and rest. He also had a known history of right foot plantar fibroma and chronic plantar fasciitis.

On physical exam the patient was tender to palpation over the inferomedial aspect of the right foot at the insertion of the PTT on the navicular bone. There was no evidence of effusion. He demonstrated full muscular strength and pain-free active and passive range of motion of the ankles. He was a mild pronator.

Biomechanical gait analysis revealed significant weakness of the gluteus medius. Radiographs revealed a type II accessory navicular of the right foot. MRI demonstrated subchondral edema in the type II accessory navicular and subchondral marrow edema in the anterolateral talar dome.

This patient's symptoms were treated successfully with 1% topical diclofenac sodium gel. His gluteus medius weakness was addressed with physical therapy exercises that focused on hip abduction.

Musculoskeletal pain can be complex. The slightest disturbance in the body's biomechanical structure can cause damage further along the kinetic chain. When treating musculoskeletal injuries, providers are cautioned that the site of pain may not be the origin of injury.