MSK CASE CONFERENCE

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History

- 19 year old male football player with no past medical history presenting for 3 days of right ankle pain and swelling after being kicked in posterior foot and having eversion injury.
Foot Radiographs 8/22/17
MRI 8/22/17

Axial
PDFS
Findings

- Os naviculare with pseudoarthrosis with the navicular bone. Edema within the navicular bone and synchondrosis.
- Small amount of fluid around posterior tibial tendon, which is otherwise normal.
Os naviculare syndrome

- Os naviculare is generally a normal anatomic variant
- However can have medial foot pain.
- Associated with flat feet and posterior tibial tendon insufficiency.
Os naviculare

- Seen in approximately 12% of population.
- Three types of accessory navicular bones:
  - Type 1: 30% of os naviculare. 2-3 mm sesamoid bone in the posterior tibial tendon. AKA os tibiale externum.
  - Type 2: 50-60% of os naviculare. Secondary ossification center of navicular located over the medial pole. Ossicle is often triangular shaped and located 1-2 mm from the medial navicular. Connected to navicular tuberosity by a fibrocartilage or hyaline cartilage layer.
  - Type 3: It is a prominent navicular tuberosity. Thought to be fused Type 2 os naviculare.
- Type 2 can be symptomatic and have medial foot pain
| Type 1 | - Also known as os tibiale externum  
- Sesamoid bone embedded within the distal portion of posterior tibial tendon  
- Usually asymptomatic |
|--------|---------------------------------------------------|
| Type 2 | - Triangle shaped accessory bone attached to the navicular tuberosity by a 1-2 mm layer of fibrocartilage  
- May cause posterior tibial tendon dysfunction |
| Type 3 | - Fused accessory navicular bone resulting in a prominent navicular tuberosity called a cornuate or hooked navicular  
- Traditionally symptomatic because of the prominence |
MRI of painful Type 2 accessory navicular bone/os naviculare syndrome

- Edema within the accessory navicular bone and synchondrosis suggestive of inflammation and destruction of the cartilage cap

- Posterior tibial tendon abnormality
Treatment

- Treatment is often nonsurgical involving immobilization, ice, NSAIDs, steroid injections, physical therapy and orthotic devices.

- If symptoms are refractory to nonsurgical therapy surgery may be performed. The surgery involves excision of the accessory navicular bone.
References


- [http://www.acfas.org/footankleinfo/Accessory_Navicular_Syndrome.htm](http://www.acfas.org/footankleinfo/Accessory_Navicular_Syndrome.htm)