

Case Report

Bilateral Accessory Navicular Bone Excision in an Elderly Female: Case Report and Review of Literature

Arora MK^{1*}, Madaan E², Madaan U³ and Gupta A⁴¹Department of Orthopedics, Narayana Superspecialty Hospital, Gurugram, Haryana, India²Department of Non Invasive Cardiology, Park Hospital, Gurugram, Haryana, India³Department of Radiodiagnosis, Mullana Medical College, Ambala, Haryana, India⁴Department of Orthopedics, Indian Spinal Injury Center, Gurugram, Haryana, India

*Corresponding author: Arora MK, Department of Orthopedics, Narayana Superspecialty Hospital, Gurugram, Haryana, India

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Abstract

The authors present a case of 55 year female who presented with pain on medial aspect of both feet. The patient had been diagnosed as having accessory navicular bone since last 3 years. She underwent conservative treatment for about a year. However, when her symptoms did not resolve, she was taken up for accessory navicular excision surgically.

Keywords: Accessory Navicular Bone (ANB); Os Naviculare; Ossification

Introduction

Accessory Navicular Bone (ANB) is a normal variant which is present in 10-14% of population [1-3]. It also goes by the name of Os naviculare/ Os tibiale Externum. It is usually found incidentally as this bone is often asymptomatic in about 99% of patients having ANB [1-3]. This bone is characteristically positioned anatomically and if symptomatic, can lead to flat feet or posterior tibial tendon insufficiency. It is more common in females and has autosomal dominant inheritance.

Case Report

A 55 year old lady presented to us with complaints on pain on medial side of bilateral feet. She had already been diagnosed as a case of bilateral accessory navicular bone elsewhere. She was on conservative treatment for pes planus since last 3 years. Initially she got relief but the pain worsened after some time so much so that she became a household ambulator. The radiographs (Figure 1) were taken which showed type 2 ANB. She was then planned for ANB excision on both sides in single sitting. Incision was given on medial aspect of dorsum of foot centering over navicular bone. The synchondrosis was identified by inserting 26 gauge needle into the joint and confirming in image intensifier. The tibialis posterior tendon sheath was also identified over accessory navicular bone and carefully erased as little as possible. After dissecting soft tissues from the accessory navicular bone, it was taken out (Figure 2). The tendon sheath was sutured back over the native navicular bone (Figure 3). Complete excision was confirmed by taking images from C arm during surgery and by x rays after surgery (Figure 4). The wound healed well (Figure 5) and post op recovery was uneventful. At the last follow up of about 15 months, the patient is doing well. She has now become a community ambulator and can walk without much pain with shoes having medial arch support.

Discussion

The navicular bone normally has a single center of ossification



Figure 1: AP and Lateral view of both feet showing accessory navicular bone.



Figure 2: Showing accessory navicular bone from both feet.



Figure 3: Showing dissected tibialis posterior tendon from accessory navicular bone, which was again reattached to main navicular bone.

which appears at around 3 years of age and fuses at 13 years of age. The secondary ossification center which forms navicular tuberosity,



Figure 4: Showing x rays of both feet after surgery.



Figure 5: Showing status of wound after 2 weeks.

if fails to unite gives rise to accessory navicular bone. The shape of navicular bone resembles like a boat. It articulates proximally with head of talus, laterally with cuboid and distally with medial, intermediate and lateral cuneiforms. It gives rise to calcaneonavicular ligament also known as spring ligament. The posterior tibial tendon inserts medially and if involved, is responsible for most of the complaints related to ANB.

Our patient was 55 year old female who presented to us with complaints of pain on medial side of both feet. She had exhausted all forms of conservative treatment but her symptoms persisted. The ANB if symptomatic can lead to medial arch pain and cause flat foot which our patient had on examination.

ANB is classified into three types radiographically

Type 1: Sesamoid bone in the substance of tibialis posterior insertion

Type 2: Separate navicular bone attached to native navicular via synchondrosis

Type 3: Complete bony enlargement

Type 2 ANB is the most common presentation among all types. Pain is caused by repetitive strain in synchondrosis due to the pull by tibialis posterior [4]. Inadequate immobilization at this stage will further lead to aggravation of symptoms.

The tibialis posterior is plantar flexor and invertor of foot. It also acts as dynamic stabilizer of medial longitudinal arch of foot. In case of ANB, continuous and repetitive stretches applied to navicular bone by tibialis posterior tendon causes pain and often leads to posterior tibial tendon insufficiency which further leads to medial arch collapse leading to flat foot. The heel then turns into valgus and forefoot in

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abduction leading to “Too many toes “ sign [5] If it continues for a longer time, the patient may present with complete rupture of tibialis posterior tendon. In our case also, the patient had flat feet both sides and tenderness over ANB. At this junction, the authors tend to point out that injecting corticosteroids locally over ANB further leads to more chances of tendon rupture, hence should be absolutely avoided. Although the diagnosis of ANB can be made clinically if patient presents with pain over navicular bone with collapsed medial arch, but x rays are still needed to show the presence of ANB. Besides making a clear cut diagnosis, x rays will also help to rule out arthritic changes in other joints of foot. MRI will show edema and inflammation, synchondrosis and associated tears of the tibialis posterior tendon.

The mainstay of treatment for ANB is conservative. Surgical treatment is reserved for those cases who do not respond to conservative treatment [6]. The conservative treatment includes rest, ice compression, medial arch support and NSAIDS, while the surgical treatment include tendon debridement and reconstruction, excision of ANB.

Conclusion

Our case highlights the importance of surgical management in recalcitrant cases of ANB. Early diagnosis can lead to better management of these cases. ANB should always be considered in patient presenting with medial side foot pain. Of course, the conservative treatment remains first line of treatment in majority of the patients.

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