

OS NAVICULARE ACCESSORIA - A CASE REPORT. TYPES, FREQUENCY AND CLINICAL SIGNIFICANCE

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Summary

A clinical case of accessory navicular bone is reported. Accessory navicular bone is a common anatomy variation with clinical significance. It has been classified in three types which have different incidence. Previous reports suggest that accessory navicular bone is present in approximately 5 to 14% of general population. Type I accounts for approximately 30% of all and type II and III account for 70% of all accessory navicular bone. The importance of this anatomy variation is determined by its high frequency and clinical impact.

Key words: accessory, navicular, bone

Introduction

The navicular bone is located between the talar head posteriorly and the three cuneiforms anteriorly. The medial surface of the navicular projects inferiorly to form the navicular tuberosity, an important site for tendon attachment. The ossification of the navicular begins during the fourth postnatal year. Accessory navicular is a separate ossification center for the tuberosity of the navicular that is present in approximately 5 to 14% of the general population [1].The accessory navicular produces a firm prominence on the plantar-medial aspect of the midfoot. The accessory navicular has been classified into three types.

Case report

A case of 30-th years old woman is reported. She complained of chronic foot pain centered over the medial longitudinal arch. Because of that she was advised by her physician to visit an orthopedist. During the orthopedic examination good common mood, flattening of the transverse



Fig.1. Radiograph of the reported case

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arch and pain at the medial side of the left foot was detected. Accessory navicular bone type II was shown by conventional X-ray examination (Fig. 1).

Surgery treatment was recommended. By dorso-medial approach the accessory navicular bone was extirpated. No transposition of tibialis posterior tendon was made. The patient complains disappeared

Discussion

The accessory navicular has been classified into three types with different incidence in general population. Type I is a rarely symptomatic, pea-sized sesamoid bone located within the distal portion of the posterior tibial tendon that accounts for about 30% of all (Fig. 2). Type II, the most frequently symptomatic type, is an accessory bone united to the navicular by a syndesmosis or synchondrosis (Fig.3) On

radiographs, this ossicle is triangular or heart shaped and approximately 8 x 12 mm. Type III is a large accessory bone that results from fusion of a type II with the body of the navicular and appears like a hard prominence on the medial longitudinal arch. (Fig. 4) Type II and type III account for about 70% of all accessory naviculars [2]. The accessory navicular bone can become the cause of chronic or acute pain over the medial side of foot. The symptoms often appear after physical or sport activities connected with forceful plantar flexion and/ or pronation. There may be a coexistent flatfoot, but there is no conclusive evidence of a cause-and-effect relationship between the two conditions [3]. The X-ray view of accessory navicular bone is a reason about a differential diagnosis between this condition and a fracture of navicular bone especially of the similar anamnesis. Because of all accessory navicular bone is an anatomy variation with a clinical significance.



Fig. 2. Type I of accessory navicular bone

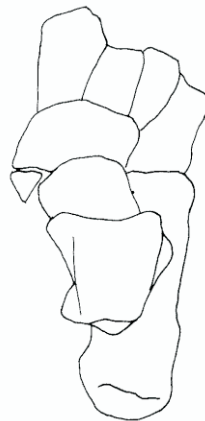


Fig. 3. Type II of accessory navicular bone

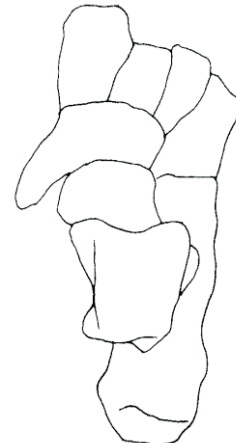


Fig. 4. Type III of accessory navicular bone

References

1. Dobbs MB, Walton TRN. Autosomal Dominant Transmission of Accessory Navicular. Iowa Orthop J. 2004;24:84–5.
2. Grogan DP, Gasser SI, Ogden JA. The painful accessory navicular: a clinical and histopathological study. Foot Ankle. 1989;10:164–9.
3. Keles Coskun N, Arican RY, Utuk A, Ozkani H, Sindel T. The incidence of accessory navicular bone types in Turkish subjects. Surg Radiol Anat. 2009. Epub 2009 Apr 15. [about 1 p.]. Available from: <http://www.springerlink.com/content/41042268641w4k43/>