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A case of accessory navicular bone syndrome

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Abstract
The accessory navicular bone is a surnumerary bone of the tarsus whose symptomatic form remains infrequent. Ignorance of this syndrome often results in delayed diagnosis and differs in the establishment of adequate treatment. We report the observation of a 14-year-old athlete with localized pain in the medial face of the left foot. The radiological assessment showed an accessory navicular bone associated with a infiltration of the soft tissues. Clinical improvement was noted after sports rest and after non steroidal anti-inflammatory therapy. Through this work, we recall the clinico-radiological and therapeutic aspect of navicular bone syndrom.

Keywords: Accessory navicular bone, imaging, Pain Foot

Introduction

Foot pain affects 20% of the population [1] whose origin is multiple because of the anatomical complexity of this region. Among them, accessory navicular bone syndrome. It is a supernumerary bone of the tarsus. It derives from a center of secondary ossification of the posteromedial tuberosity of the navicular bone. The lack of knowledge about this syndrome leads to a frequent diagnosis delay of a few months, or even years [1, 2], and thus delays the introduction of an adequate treatment.
Through this work we will carry out a review of the literature concerning the clinico-radiological and therapeutic aspect of this syndrom.

2. Case presentation

This was a 14-year-old boy referred to the P radiology department for localized pain in the medial aspect of his left foot. Sportsman (football). He had no particular pathological history.
The clinical examination revealed swelling at the medial tuberosity of the navicular bone, painful on palpation and the inverted inversion of the foot. . It was not objected to any foot deformation.
The radiological assessment carried out showed an accessory navicular bone associated with a soft tissue thickening compared to the CT scan (figure 1 and 2) suggesting an accessory navicular bone syndrome.
There was good improvement in symptoms with oral non-steroidal anti-inflammatory drugs with sports rest.

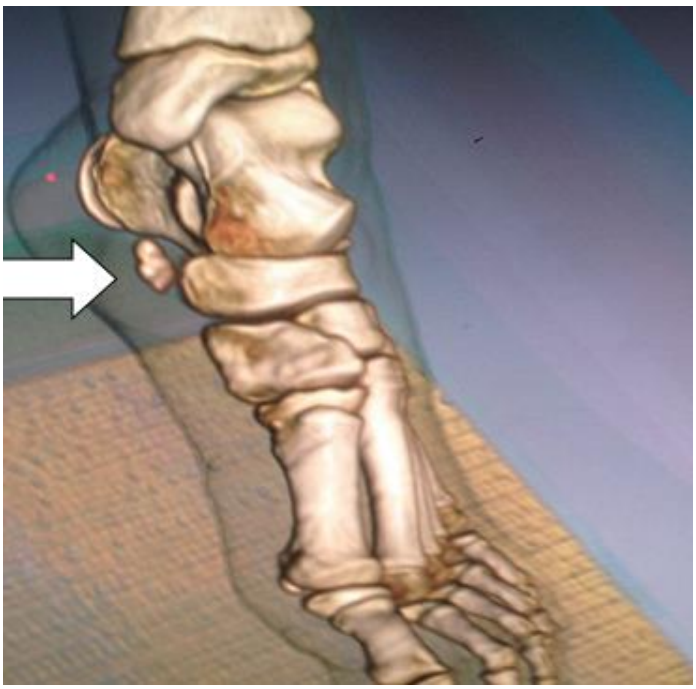

Fig 1: right foot scanner, 3D reconstruction Visualization of a surnumerary bone next to the navicular bone (white arrow)

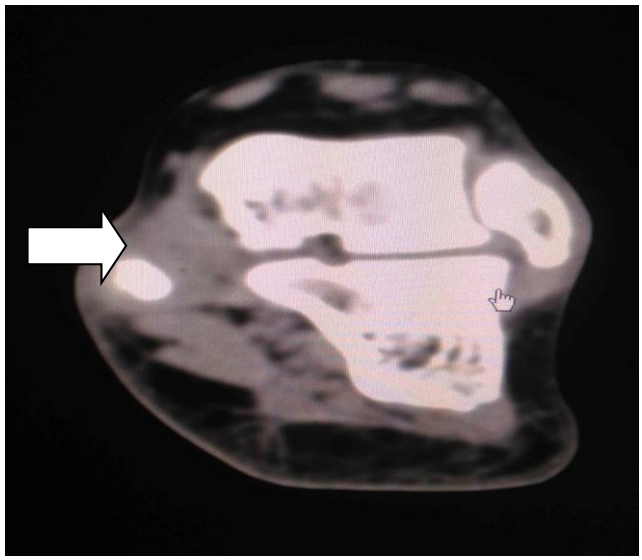

Fig 2: left foot scanner, in soft part window: Infiltration of the soft tissues next to the accessory navicular bone (white arrow)

3. Discussion

Accessory navicular bone is relatively rare with a frequency of about 4 to 21% in the general population [3], and is bilateral in 50 to 90% of cases [2-4]. It occurs after ossification of a fibro-cartilaginous sesamoid between 9 and 11 years of age and remains mostly asymptomatic [5]. Accessory navicular bone syndrome mainly affects young female subjects [2, 6].

Clinically, accessory navicular bone syndrome is characterized by progressive pain in the medial margin of the foot [7], localized tenderness in the medial aspect of the navicular bone, and pain in stretching and contraction of the posterior tibial tendon [2]. This syndrome occurs mainly following microtrauma on synchondrosis, especially in athletes [7]. It can also appear suddenly after a trauma "ankle eversion" [2] and thus simulating a fracture [4].

The standard X-ray in two faces and 45 ° oblique views the accessory navicular bone. But the radiological visualization of an accessory navicular bone is insufficient to attribute the symptoms to it. In our case the patient was referred directly for a foot CT-scan. However, the correct analysis of a standard radiograph coupled to the clinic could suggest the diagnosis. Magnetic resonance imaging makes it possible to make a positive diagnosis and remains the examination of choice for a better radiological analysis. It highlights synchondrosis, tendinopathy of the posterior tibial and thickening of the soft parts adjacent to the accessory navicular bone which appear hypo signal in T1 and hyper signal in T2. Imaging also makes it possible to define 3 types [4, 8-9]:

- Type I (30%): small, round or oval bone sesamoid in the thickness of the TTP, located between 3 and 5 mm from the navicular bone;
- Type II (50%): triangular, 8 to 12 mm thick, with a base lying between 1 and 3 mm from the navicular bone, which it joins by a fibro-cartilaginous synchondrosis or a cartilaginous pseudarthrosis ;
- Type III (20%): fusion of the sesamoid with the medial tubercle of the navicular, giving a prominent navicular tuberosity
- In our case, because of the non-availability of MRI, the clinical context and the CT examination of the foot allowed to evoke the diagnosis found an accessory navicular bone and a thickening of the soft parts opposite.

The initial treatment is medical: athletic rest, analgesic and oral nonsteroidal anti-inflammatory medication and repeated local icing are required. Cortisonic infiltration is indicated if oral treatment is not effective [5, 8]. In case of failure of a well-conducted medical treatment for six months, surgical management is proposed: simple excision of the accessory navicular bone with anatomical suture of the posterior tibial tendon if necessary [10]. Postoperative complications are rare and more than 90% are asymptomatic at the 6th postoperative month [2, 11].

4. Conclusion

Symptomatic accessory navicular bone is an uncommon pathology. The clinical and radiological context makes it possible to make the positive diagnosis and thus to establish an adequate treatment.

5. References

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