

PAINFUL ACCESSORY NAVICULAR IN CHILDREN - CASE PRESENTATION

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Abstract

Accessory bones, called sesamoid bones, may be occasionally located in the foot. Such a situation is seen in the case of accessory navicular. Its presence is mostly asymptomatic, in some cases in teenagers and adults and more rarely before this age, leading to pains in the leg. This paper presents the case of a 10 year girl experiencing such a pathology that was managed surgically.

Key words: accessory navicular, leg pain, child, surgical treatment

Introduction

There are situations in which, either in hand or leg, by a congenital anomaly, the number of bones is greater than normal, as sesamoid bones are present. This may sometimes cause problems. The accessory navicular bone (*os navicularum* or *os tibiale externum*) is an additional bone or a piece of cartilage located on the inner side of the foot, near the head of the navicular bone, frequently incorporated in the posterior tibial tendon or, more rarely, connected through fibrous or cartilaginous tissue to the navicular. Girls are more often affected by this anomaly^{1,2}.

Not all the individuals with this accessory bone have symptoms³. The symptoms appear when the accessory navicular bone is too large or when a traumatism causes an injury in the fibrous tissue between the navicular and accessory navicular bones, leading to a phenomenon similar to a fracture considered to be the cause of the pain⁴. As the posterior tibial tendon attaches to the accessory navicular, it is constantly stretching the bone, causing with every step a greater displacement between fragments.

Trauma that triggers the pain may be an ankle sprain or irritation from shoes by rubbing. Many patients with accessory navicular syndrome also have flat feet that will put more pressure on the posterior tibial tendon, which can produce inflammation or irritation of the accessory navicular. Signs and symptoms of accessory navicular may appear during adolescence, when the bones are maturing and the growth cartilage is developing into bone. However, sometimes symptoms do not occur until adulthood.

Signs and symptoms of accessory navicular syndrome include: a visible bony prominence on the inner side of the foot, local hyperaemia, swelling, and vague bone pain, usually occurring during or after activity periods.

Diagnosis is commonly suggested by medical history and painful sensitivity within the area of the head of the navicular bone. Radiological examination is needed to allow the surgeon to visualise the accessory navicular. No other

tests are generally required, but MRI or CT can be useful in order to establish the relationship between accessory navicular and posterior tibial tendon^{5,6,7}.

The treatment may be non-surgical in order to improve the symptoms. The following may be used: immobilisation by plaster splint, use of boots when walking, which allow the affected area to rest and reduce inflammation, use of an ice bag covered with a thin towel applied on the affected area in order to reduce swelling, oral non-steroidal anti-inflammatory drugs (NSAID), such as ibuprofen, may be prescribed. Orthotically, devices that fit into the shoe and provide support for the plantar arch may be used, and these may play an important role in the prevention of symptoms in the future. Even after a successful treatment, the symptoms of accessory navicular syndrome sometimes reappear. When this happens, non-surgical approaches are usually repeated, often followed by surgical intervention when it seems that all non-surgical approaches failed to control the issue and the pain becomes unbearable.

Surgical treatment of this condition involves removing the accessory bone (this additional bone is not necessary for normal foot function), remodelling the area, and repairing the posterior tibial tendon to improve its function.

The most commonly used procedure to treat the symptomatic accessory navicular is Kidner procedure: a small incision is made on the area in which the accessory navicular is palpated; the bone is then detached from the posterior tibial tendon and excised⁸. Posterior tibial tendon is re-inserted on the remaining normal navicular. Skin incision is closed with threads; bandage and immobilisation by plaster splint are applied. Use of crutches for several days is recommended after surgery and the suture threads are removed within 10 to 14 days.

In some cases, as the one presented hereinafter, the accessory navicular is placed in the thickness of posterior tibial tendon. Thus, undoubling the proximal tendon from the insertion on the navicular bone is sufficient for its excision.

Case presentation

M.H., 10 years of age, female, addresses the pediatric orthopedics department for pain within the projection area of the right navicular head, debuting approximately two months before, and the pain is accentuated by excessive walking. Local swelling, painful sensitivity at palpation, and discrete skin hyperaemia are observed at the objective exam.

The radiological exam reveals the presence of a bony formation of approximately 5 mm diameter (sesamoid bone) located posterior to the head of right navicular bone –

accessory navicular, confirmed by CT scan (fig 1). Laboratory investigations indicated normal values.

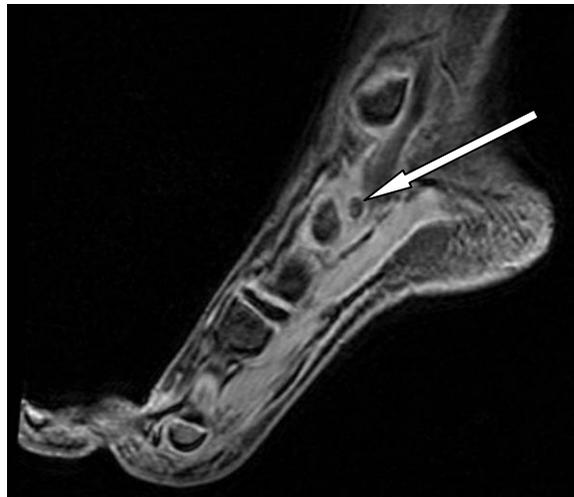


Fig 1. Radiological and CT aspect of accessory navicular.

Surgery is performed under general anaesthesia. An incision centred on the insertion of posterior tibial tendon on the head of navicular bone is made. After the tendon is isolated, cranially to the insertion on the navicular bone may be seen a thickening of the navicular bone by incorporating

the sesamoid bone. The tendon is undoubled, the accessory navicular is excised (fig 2) and the tendon is rebuilt with individual suture threads, haemostasis, and skin suture with individual threads.

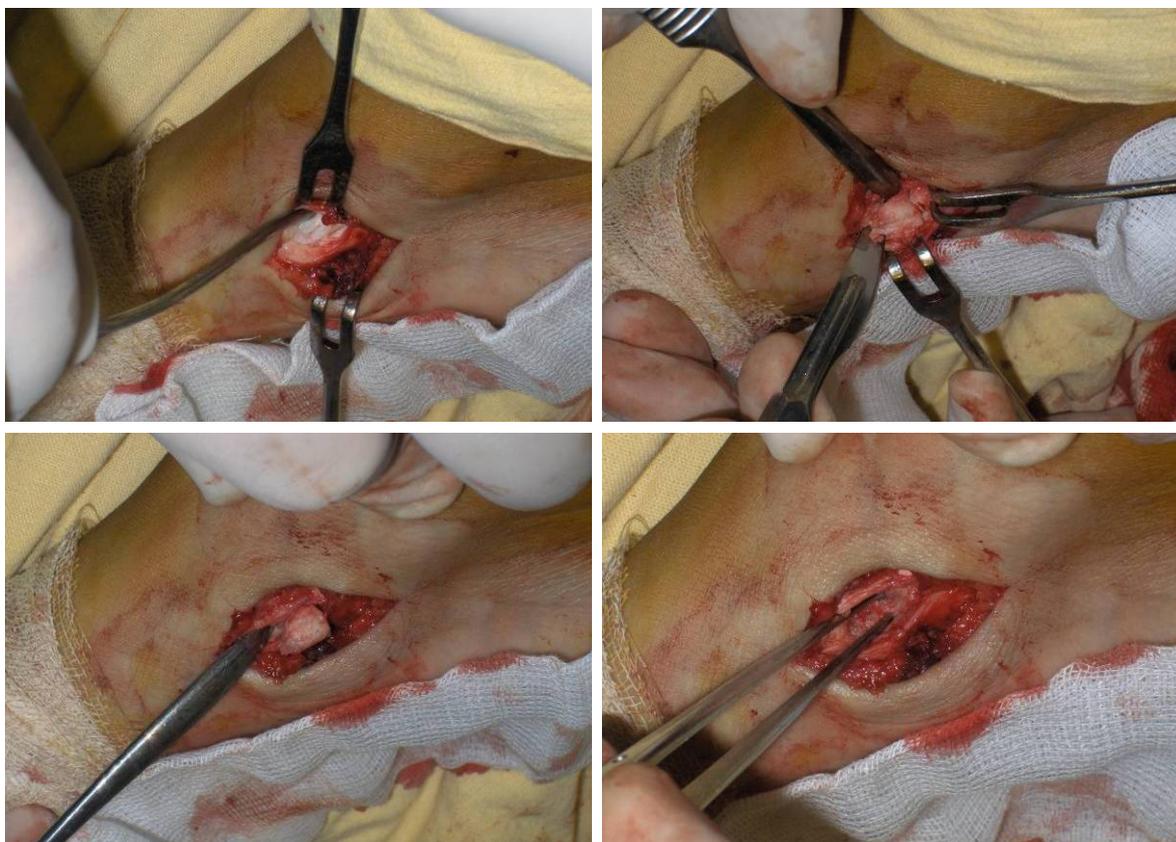


Fig. 2 Intraoperative aspects.

After surgery, a radiological exam is performed in order to confirm complete excision of accessory navicular (fig 3) and the foot is immobilised by plaster splint for three weeks, with bandage at two-three days and removal of

suture threads after 10 days. Three weeks after, the patient starts walking with crutches for two weeks. Subsequent periodic check-ups show good healing with relieve of symptoms.



Fig. 3 Postoperative radiological exam.

Conclusions

1. Existence of accessory navicular, frequently asymptomatic, may sometimes cause pain of the foot.
2. Although clinical signs commonly appear mainly in females during adolescence or adulthood, it is possible to clinically start earlier, at 10 years in this case.

3. Accessory navicular may be located within the thickness of posterior tibial tendon, without affecting its insertion on the navicular bone, for the excision of the sesamoid bone being sufficient to longitudinally undouble the tendon.
4. Post-operative recovery is full and rapid, with relieve of painful symptomatology.

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