



Osteomyelitis of the accessory navicular bone in the foot. A case report

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The accessory navicular is one of the most symptomatic bones of the foot. Osteonecrosis and fracture of this bone have been previously described. We report a case of osteomyelitis of an accessory navicular bone in a young girl, to make treating clinicians aware of this rare possibility.

INTRODUCTION

Patients with bone and joint infections usually present with pain, limp, fever and toxæmia to the Accident and Emergency department or to their general practitioners. Sometimes the diagnosis of osteomyelitis can be challenging due to its atypical presentations and may be missed on the first presentation. Thus a high index of suspicion is an important factor in achieving early diagnosis.

The accessory navicular is one of the most symptomatic bones of the foot. Osteonecrosis and fracture of this bone have been previously reported (4, 5). We describe an unusual case of osteomyelitis of an accessory navicular bone. No similar case seems to have been reported so far in the literature.

CASE REPORT

An 11-year-old girl presented to our accident and emergency department with a one-day history of pain in her left foot. She had attributed this pain to a minor trauma at school two days previously. She could weight bear after the injury, but developed pain and limp the next day. On presentation to the accident and emergency department, she was afebrile, walked with an antalgic gait and had dif-

fuse swelling with tenderness on the medial aspect of her foot and ankle. There was limitation to the range of movement of the ankle joint. Plain radiograph of ankle and foot failed to show any abnormality (fig 1). A diagnosis of ankle sprain was made and a double tubi-grip was applied. The patient returned to the A&E department the next day because of poor pain control and throbbing pain that disturbed her sleep. She was afebrile on examination and still had a tender swelling on the medial aspect of the foot. The movements at the ankle joint were restricted and painful. No blood tests were performed, as the working diagnosis was ankle sprain. The patient was given a plaster backslab, which she preferred because of better pain control. She was then referred to the orthopaedic clinic.

When she was seen in the orthopaedic clinic two weeks following the onset of her symptoms, her pain had improved and she was able to walk on the lateral border of her foot. Her systemic examination was normal but there was a discharging sinus on the medial aspect of the foot. Plain radiographs

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Fig. 1. — Radiograph of the foot on presentation.



Fig. 2. — Radiological appearance two weeks later.

showed disintegration of the accessory navicular bone (fig 2). The erythrocyte sedimentation rate, peripheral leucocyte count and C-reactive protein levels were normal at this stage. The diagnosis of osteomyelitis was made. Pus swabs grew *Staphylococcus aureus* sensitive to flucloxacillin. She underwent excision of the disintegrated accessory navicular bone the same day. Intra-operative cultures grew the same organism and the histology confirmed the diagnosis of osteomyelitis. Post-operatively she was started on a six-week course of flucloxacillin.

On final review, six months postoperatively, the wound had healed well without any residual problems and her foot had normal function.

DISCUSSION

The accessory navicular bone is one of the most symptomatic accessory bones of the foot. It is located on the medial aspect of the arch of the foot, in close association with the navicular bone. Its incidence is reported to be around 10-14% (2, 5). It is formed as a congenital anomaly when the tuberosity develops from a secondary ossification centre. Three distinct types of accessory navicular have been described, based on its relation with the navicular bone and the tibialis posterior tendon. Type 1 is usually asymptomatic with no attachment to the navicular. Type 2 is separated from the navicular bone by a fibrocartilaginous plate and is fre-

quently symptomatic. A bony bridge unites to the navicular bone in type 3. A symptomatic accessory navicular is frequently caused by injury, which may be due to tension shearing or compressive forces transmitted through the tibialis posterior tendon (2). Osteonecrosis and fracture of the accessory navicular have been described in the literature (4, 5).

The most common site for haematogenous osteomyelitis is the growing end of long bones but as this case report shows, it can involve any bone. Trauma and bacteraemia together are considered as risk factors for childhood osteomyelitis. Studies have demonstrated that trauma increases the susceptibility of bone to osteomyelitis when there is concurrent bacteraemia (7), which can be a daily event in children. So it is not uncommon to have patients with osteomyelitis presenting with a history of trauma ; this can sometimes be misleading and prevent early diagnosis. Trauma in this case may only have contributed to focus the patient's attention to the underlying problem. The classical presenting symptoms of osteomyelitis are bone pain, limp, fever and toxæmia. However a significant proportion of children with osteomyelitis do not fit this clinical stereotype, as they may not have any systemic symptoms on presentation (6). A high index of suspicion is the key for early diagnosis.

Unexplained bony pain, especially night pain should alert the clinician to a possibility of infection or a neoplastic cause, both of which should be ruled out (3). Appropriate imaging and diagnostic

tests should be initiated without delay. Early appropriate treatment leads to reduction of morbidity. It has been shown that administration of antibiotics within forty-eight hours of the onset of illness leads to higher cure rates with a single course, without the need for surgical intervention (1). Plain radiographs and inflammatory markers should be part of the first assessment ; if there is still uncertainty about the diagnosis, these patients should have close follow-up with repeat imaging and check of inflammatory markers.

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