Kohler's disease

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A 3-year-old girl presented with a history of intermittent and acutely worsening left foot pain with inability to bear weight. There was no history of trauma, fever or systemic illness. There was diffuse swelling and warmth over the dorsum of the left foot but no erythema or focal tenderness. Full blood count and C-reactive protein were within normal limits. Plain films demonstrated irregular sclerosis and collapse of the navicular bone ossification centre with surrounding soft tissue swelling in keeping with a diagnosis of Kohler's disease. (Figure 1.)

First described in 1908, Kohler's is a rare bone disorder of the foot, resulting from osteochondrosis of the navicular bone which affects boys five-fold more often than girls, classically between the ages of 3-7 years.[1] Osteochondrosis is a consequence of osteonecrosis of ossification centres in skeletally immature patients, caused by local ischaemia.[2] The navicular plays a role in stress distribution upon weight bearing [3] and it is this increased mechanical pressure which is thought to impair the navicular's blood supply.[2]

With its insidious onset and rarity, diagnosis could be missed or delayed. X rays alone may confirm the diagnosis but if required, a bone scan will show decreased uptake on the affected side [4], and MRI will show an oedematous pattern within the navicular bone.[2] The prognosis is excellent owing to the navicular's radial arrangement of blood supply.[1] Patients demonstrate complete and spontaneous clinical recovery with conservative management, though the use of short leg casting has been shown to decrease symptom duration. [5]

Legend: 'AP and oblique imaging of the foot demonstrating that the navicular bone is flattened (sometimes described as 'wafer-thin'), sclerotic and slightly fragmented in appearance.

References:

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