Kohler’s disease

Clinical Presentation

A 4 year old male child presented to our orthopedic outpatient department with complaints of pain while walking and prolonged standing in both feet (right and left) for the last 5 months. The parents also noticed swelling over inner aspect of right foot.

Figure 1 - Clinical photograph showing the heel valgus and an abnormal bony prominence over the anteromedial aspect of right foot.

Figure 2 - Radiograph showing sclerosis and diminished size of the navicular bone of right foot.

Questions

1. What is the diagnosis?

2. What are the differential diagnosis?

3. What is the management?
Discussion

Osteochondrosis of the navicular was originally described by Kohler\(^1\) in 1908. He noted that appearance of ossification center of the navicular between the ages of 1.5 and 2 years in females, and between 2.5 and 3 years in males. He found abnormalities of ossification, varying from minor irregularities in the size and shape of the navicular to gross changes indistinguishable from osteochondrosis. These abnormal ossifying nuclei were more common in late-appearing ossification center of the navicular. Waugh\(^3\) described the blood supply to the navicular. He postulated that delayed ossification might be the earliest event in the changes leading to irregular ossification, and suggested that the delayed ossification of the navicular subjects it to more pressure than the bony structures can withstand. Abnormal ossification may be a response of the unprotected, growing nucleus to normal stresses of weight-bearing.\(^4\) If osseous vessels are compressed as they pass through the junction between cartilage and bone, ischemia results, and leads to reactive hyperemia and pain.

References

1. Kohler A. “About a common and so far apparent unknown illness of individual childlike bones”. \textit{Verh deutsch Röntg-Ges} 1908; 4: 110.