

Clinical Quiz

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Kohler's disease

Clinical Presentation

A 4 year old male child presented to our orthopedic out patient 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 of 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?

Clinical Quiz

Answers

1. This 4-year-old male child has Kohler's disease¹ of right foot- a relatively rare finding in children. The right heel was in Valgus, and an abnormal bony prominence was present on anteromedial aspect of right foot (Figure 1). Patient has bilateral flat feet.
2. It is important to rule out other conditions with a similar appearance: cerebral palsy and congenital pes planus. **Diagnosis.** Kohler's disease is a clinicoradiological diagnosis requiring the presence of pain and tenderness in the area of the tarsal navicular, associated with roentgenographic changes of sclerosis and diminished size of the bone² (Figure 2). Appearance of multiple ossification centers without an increase in density should not be confused with Kohler's disease, and that roentgenographic findings similar to Kohler disease in an asymptomatic foot should be considered an irregularity of ossification.
3. **Management.** This is a self-limiting condition. Symptomatic treatment along with medial arch support is required. Surgery is indicated when disabling symptoms persist. Arthrodesis is the only operation of value, and the calcaneocuboid joint is included as most of its function is lost when the talonavicular joint is fused.

Discussion

Osteochondrosis of the navicular was originally described by Kohler¹ 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. Waugh³ 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

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