Rare cause of paediatric wrist pain unmasked by minor trauma

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DESCRIPTION
A 10-year-old girl was referred to paediatric rheumatology with a 6-month history of a painful, swollen left wrist associated with functional limitation and disturbed sleep. She initially had a minor fall, and X-rays at the time showed no bony abnormalities (figure 1). Blood tests were normal, including inflammatory markers and autoimmune screen. Wrist MRI showed significant synovial thickening and avascular necrosis of the left lunate (figure 2). She received non-steroidal anti-inflammatory and physiotherapy, but a year later, continues to have chronic regional pain with allosthy and hyperalgesia.

Kienböck disease, an eponym for avascular necrosis of the lunate bone, is of unknown aetiology and incidence.¹ The proposed trigger is trauma in those with a susceptibility due to natural skeletal and vascular variations.² It is the most common cause of adult aseptic osteonecrosis of the upper extremity, usually in dominant hands of men aged 20–40 years.³ Paediatric Kienböck is rare, presenting as pain, stiffness, swelling and reduced power, often after an innocuous fall. Diagnostically, this is challenging because the mechanism suggests

Patient’s perspective
Our patient received non-steroidal anti-inflammatory and physiotherapy, but a year later, continued to have chronic regional pain with allosthy and hyperalgesia. Despite this, she remains upbeat and continues to live a normal childhood and has coped well with the recent increase in computer usage and typing associated with remote schooling as a consequence of school closures during the COVID-19 pandemic.

Learning points
► Kienböck disease is an eponym for avascular necrosis of the lunate bone. It is of unknown aetiology and incidence, but the proposed trigger is trauma in patients with a skeletal and vascular susceptibility. In the majority of cases (approximately 80%), there is a significant association with negative ulnar variance.
► Kienböck disease is a rare paediatric diagnosis, but the most common cause of adult aseptic osteonecrosis of the upper extremity, usually affecting the dominant hands of men aged 20–40 years.
► Kienböck disease can develop insidiously and should, therefore, be considered in both adults and paediatric patients presenting with a chronic non-resolving or partially-resolving wrist trauma.
a soft tissue injury whereas the chronicity mimics juvenile idiopathic arthritis.

Radiographical severity is defined by Lichtman classification and used to guide non-curative surgical or conservative management. This aims to relieve pressure on the lunate bone and restore perfusion. Anti-inflammatory medications are offered prior to surgical joint levelling to reduce pain, swelling and deformity.

We emphasise that clinicians consider this rare, destructive pathology in their differential diagnosis for paediatric chronic wrist pain and swelling, especially in those presenting weeks after a seemingly innocuous hand trauma.

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