On-line Case Report

Slipped upper femoral epiphysis – a case of a ‘dodgem hip’

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ABSTRACT

A 15-year-old male patient of slim habitus presented three times over 3 days to the emergency department. Four weeks prior to the first attendance, he apparently injured his left knee in a sudden jolt whilst going on a ‘bumper car’ (dodgems) at a funfair. Since this incident, he had walked with a limp due to the pain in his left knee. He had sustained a slipped upper femoral epiphysis (SUFE) through this unusual mechanism of injury.

Keywords : SUFE – Slipped upper femoral epiphysis – Slipped capital epiphysis – Paediatric limp

A 15-year-old male patient of slim habitus presented three times over 3 days to the emergency department. Four weeks prior to the first attendance, he injured his left knee in a sudden jolt whilst going on a ‘bumper car’ (dodgems) at a funfair. Since this incident, he had walked with a limp due to the pain in his left knee. He had no previous medical history.

On his first presentation, the left knee was examined with no positive findings. X-ray of the knee revealed no bony injury. The patient was discharged home with analgesia. The second time he presented, the left hip was also examined and a hip X-ray was taken (Fig. 1). This showed a slipped upper femoral epiphysis (SUFE). The patient was given a pair of crutches and referred to fracture clinic. This patient then presented for the third time due to worsening knee pain. He was then referred to the orthopaedic team.

A magnetic resonance imaging (MRI) scan done on the left hip revealed a SUFE with partial closure of the

Figure 1 Hip X-ray with slipped upper femoral epiphysis seen to left hip.

epiphysis (Fig. 2). The right femur was normal. Opinion from a consultant radiologist was sought, who agreed that these findings would be consistent with a 4-week-old injury due to the bone oedema.

The affected hip was subsequently fixed with a single cannulated screw (Fig. 3).

Discussion

SUFE was first described in 1572 by Ambroise Pare, a French barber surgeon.¹ It is described as displacement of the upper femoral epiphysis from the metaphysis through

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Figure 2 MRI scan showing SUFE of left hip.

Figure 3 Single cannulated screw to left hip.

the physis. It commonly affects 1:50,000 with a 3:2 male to female predisposition,^{2,3} left to right hip disposition, respectively, and commonly affects boys aged 12–15 years and girls aged 10–13 years.⁵ Other risk factors include obesity, race, endocrine and, more rarely, trauma.⁴ The biomechanics behind the slipped upper femoral epiphysis in trauma are due to increased shear forces in a parallel direction to the epiphysis resulting in slippage.² These patients may present with antalgic gait, hip pain or knee pain (due to compression of the obturator nerve).⁶ In a suspected case of SUFE with any of the above risk factors, both the hip and knee should be examined. There is usually obligate external rotation with flexion of the hip,

Table 1 SUFE classification²

Acute	Symptoms less than 3 weeks Remodelling is not seen on imaging
Chronic	Symptoms greater than 3 weeks Remodelling is seen on imaging
Acute on chronic	Prodromal symptoms for greater than 3 weeks with sudden exacerbation of pain Remodelling is evident on imaging

limited range of motion and a possible shortening of the limb. The patient may also have a Trendelenberg gait.³ Based on the onset and presentation, SUFE can be classified into three groups (Table 1).²

Complications include avascular necrosis, chondrolysis and osteoarthritis.² Treatment includes *in situ* fixation with a cannulated screw. If slip is severe, osteotomy is preferred. Contralateral fixation may be an option if they have risk factors.⁷ SUFE is a relatively common disorder but is frequently missed due to the unusual presentations. This patient complained of knee pain though in retrospect, the mechanism of injury does support the diagnosis of a SUFE. The emergency physician needs to be vigilant to avoid this pitfall.

Conclusion

All cases of SUFE should be referred promptly to the orthopaedic surgeon, to prevent progression of the slip from minor trauma or stress.

References

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