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**Case Report**

# Delayed diagnosis of traumatic posterior hip dislocation in a 6-year-old girl with 6 years follow up: a case report

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## ABSTRACT

Though uncommon, cases of traumatic hip dislocation have been reported in children worldwide. Averagely, it is recommended that the acceptable duration for reduction after such dislocations is about 6 hours. Even with that there is about 5% documented chance of developing avascular necrosis of the head of the femur. The incidence of avascular necrosis increases with delayed relocation of the femoral head. We report a case involving a 6-year-old girl with a 2-week delayed diagnosis of a left posterior hip dislocation that was reduced and followed up for 6 years.

**Keywords:** Children, Dislocation, Delayed, Hip, Traumatic

## INTRODUCTION

Traumatic hip dislocations in children are uncommon.[1-3] Minor injuries such as a trivial fall whilst the child is playing may result in dislocation depending on the age.[3-7] Avascular necrosis (AVN) occurs in 3–6% of dislocations if reduction is performed within the first 6 hours; however, the incidence rises up to 66% if the reduction is performed 24 hours or more after the dislocation.[8] Awareness, early identification and management are therefore critical to long term prognosis.

## CASE REPORT

We report on a 6-year-old girl who sustained hip pain following a fall while playing. She was sent to a district hospital about 2 hours after the injury and was admitted, given painkillers and X-rays of the hip requested. She was discharged home after 3 days on admission. She reported at our facility 14 days after the initial injury when her parents noticed she still had the hip pain and the leg also internally rotated.

On arrival, physical examination revealed the affected limb was flexed at the hip, internally rotated, adducted and shortened by 2 cm (Figure 1).

**Figure 1: Initial presentation.**

Both lower limb pulses were palpable and equal. There was no motor or sensory deficit on neurological exams. All other findings were normal. Accompanying plain radiographs of the hip confirmed the clinical diagnosis of a left posterior hip dislocation (Figure 2).

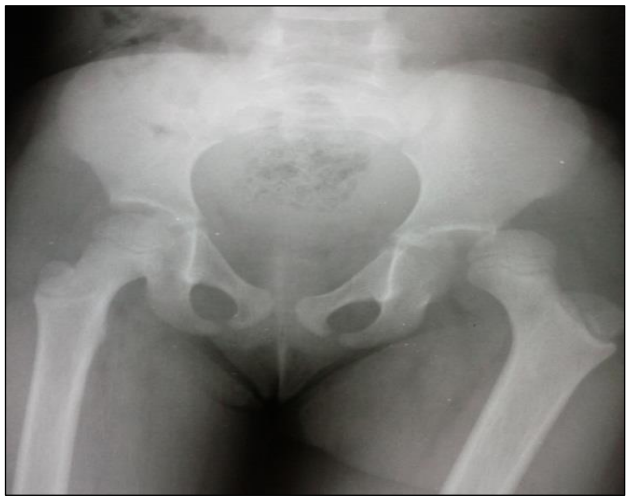

**Figure 2: Initial x-ray showing dislocated left hip.**

The child was taken to theatre immediately and under general anesthesia, the dislocation was reduced closely using a technique described by Allis (Figure 3). The hip was stable post reduction.

**Figure 3: Post reduction.**

Plain films confirmed a congruent reduction (Figure 4). Although the post-reduction X-rays showed concentric reduction, there was asymmetric joint space widening hence a CT scan was done to determine the presence of any acetabula fragments or femoral head fractures.

CT scan (Figures 5 and 6) confirmed a congruent reduction of the joint. No fractures were noted in the acetabulum.

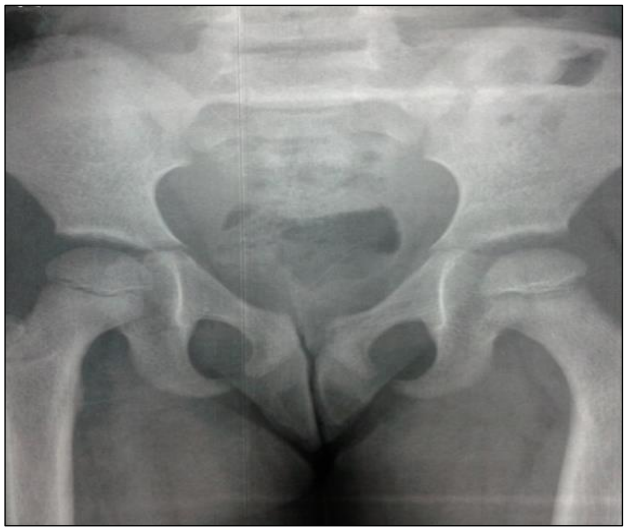

**Figure 4: Post reduction X-ray of the hip.**

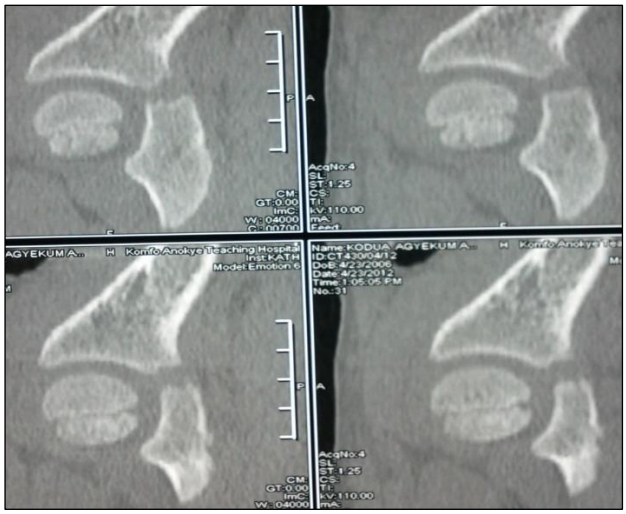

**Figure 5: Sagital view of CT scan of hip.**

**Figure 6: Axial views of CT scan of hip.**

Physiotherapy was commenced with the patient allowed weight bearing as tolerable. She was discharged home after a week. At 6 months (Figure 7) and 6 years (Figure 8) follow up, she had painless full range of motions, no limping. Plain x rays showed no early signs of avascular necrosis.

**Figure 7: X-ray of both hips at 6 months follow up.**

**Figure 8: X-ray of both hips at 6 years follow up.**

## DISCUSSION

### *Clinical presentation*

Posterior dislocations present with the hip in flexion, adduction, internal rotation and shortening of the affected limb. It may be possible to palpate the dislocated hip posteriorly. Anterior dislocations (extremely rare) present with the hip in extension, abduction and external rotation. This makes the diagnosis pretty obvious clinically.

Nevertheless, there has been reported cases of delayed or missed diagnosis of this condition.[5,7,16,17] This may be due to the patient having other life-threatening injuries which ends up diverting attention from the dislocation or the health facility not been able to diagnose the problem and that was the case with our patient.[2,5,17]

Sciatic nerve injury, usually a neurapraxia is the commonly seen nerve injury with reported incidence of (5%-20%).[1,3,4,7,11] Therefore thorough vascular and neurological examination with proper documentation must be done for medico-legal reasons.

### *Imaging*

Good quality radiographs should be obtained to confirm the diagnosis of a hip dislocation and a congruent reduction and to exclude the presence of fragments in the joint space. CT scan or MRI should be obtained when there is evidence that the hip joint is not concentrically reduced.[18]

### *Treatment*

Closed reduction using the Allis technique under general anaesthesia is employed especially in patients presenting with hours of the dislocation. Open reduction may be recommended in the event of failed closed reduction. This may be due to late presentation or the femoral head button holing through the joint capsule.[2,7,10]

Some authorities advocate for the aspiration of the hip joint to evacuate the haemathrosis in the bid to preserve the blood supply to the femoral head.[6]

### *Complications*

Avascular necrosis is the main complication of pediatric hip dislocation. Hung NN documented an incidence of almost 14%. Other authors put it at between 5% and 15%.[1-3,5,10,11,13] It becomes radiologically obvious within 2-12 months after the injury.[8,20] This complication could be minimized with prompt and early reduction of dislocated hips

### *Other complications*

Post traumatic osteoarthritis of the hip, coxa magna, heterotopic ossification and recurrent dislocation though uncommon do occur.[7,10,12,21]

## CONCLUSION

Pediatric hip dislocation though uncommon do occur and it is our recommendation that health care personnel look out for them and treat promptly to reduce all the associated complications. If for some reason, the facility cannot manage or make a diagnosis in a child with hip pain following a fall of any magnitude, they should be referred to appropriate centres to ensure early management.

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