been reported in the Japanese literature. The first case was of a 15 year old female Kendo player,⁹ and the second a 15 year old female synchronised swimmer.¹⁰

In Kendo, a player uses a special sword (a *Sinai*), which weighs about 500 g and is 115 cm long. A Kendo player grasps the sword with both hands and swings it up and down. During training, the player swings the *Sinai* up and down repeatedly. In the present case, as the camp represented the first experience of Kendo for the patient, we think that the excessive training caused the stress fracture of the right ulna. As he did not stop training after the onset of pain in the right forearm, he may subsequently have supported the *Sinai* mainly with his left hand. The continued swinging of the *Sinai* with the painful right forearm probably caused the bilateral stress fractures of the ulnae. The proximal end of the *Sinai* is grasped with the left hand and a site further forward is grasped with the right (fig 6). This probably

caused the difference in the site of the stress fractures between the right and left ulna.

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Posterior dislocation of the hip while playing basketball

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Abstract

Injuries in basketball are usually to the ankles and knees. Dislocation of the hip is usually associated with severe trauma—for example, road traffic accidents. A case is reported here in which a 22 year old club basketball player slipped on landing from a jump shot, forcing him into a side splits position from which he sustained a posterior dislocation of the hip resulting in a sciatic nerve palsy.

(*Br J Sports Med* 1998;32:342-343)

Keywords: basketball; hip dislocation; sciatic nerve palsy

Case report

The patient was a 22 year old club basketball player, 190 cm tall and weighing 80 kg, who jumped for a ball during the first period of a club match. On landing he slipped on a wet patch on the court forcing abduction of both hips and driving his legs into a side splits position. The patient was immediately in severe pain and unable to move the left hip. He was taken to the local accident and emergency department where an x ray examination confirmed the clinical diagnosis of a posterior dislocation of the left hip. At this time it was also noted that he had a palsy of the deep peroneal branch of the sciatic nerve resulting in a foot drop. The hip was reduced under a general anaesthetic within two hours of being seen by an orthopaedic surgeon. Clinically there was no evidence of any joint hypermobility and the patient could not recall any previous problems with, or injuries to, his hips. A computed tom-

ography scan of the acetabulum after reduction showed no associated fractures.

After the operation there remained a persistent palsy of the common peroneal branch of the sciatic nerve with a foot drop. This was confirmed by electromyography performed three months after the injury. At six months there was a positive Tinel's sign over the sciatic nerve in the mid-thigh suggesting some sciatic nerve recovery.

Discussion

Basketball requires strength and speed, both running and jumping being an integral part of the game. The injury rate is 88 per 1000 person years exposure, with 56% of the injuries occurring during competitive play.¹ Some 31% of the injuries are to the ankle with a further 25% to the rest of the lower limb, predominantly the knee.¹ To our knowledge dislocation of the hip has never been reported before in association with basketball.

Hip dislocation in the adult is uncommon and is usually the result of road traffic accidents. The "dashboard" injury in which the patella strikes the car dashboard, driving a flexed hip backwards into the acetabulum is the most common mechanism. Hip dislocation has also been reported in skiing, biking, and sledging injuries.²

Dislocation may be in a number of directions (anterior, inferior, or posterior) and may or may not be associated with acetabular fracture. Diagnosis is usually made on a clinical basis and confirmed by an anteroposterior radiograph of the pelvis. Closed reduction under a

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Accepted for publication
26 August 1998

general anaesthetic is usually possible, although soft tissues may become interposed and require open reduction.

Sciatic nerve injury is rare, occurring in only two out of 43 consecutive patients reviewed by Dreinhofer *et al.*² The potential for recovery is related to the time to hip reduction.

After simple dislocations (those without an associated fracture), the major complications are osteoarthritis of the hip, which occurs in up to 25%, and avascular necrosis of the femoral head, which develops in up to 14% of patients.²⁻³ Complete recovery of femoral head blood supply is only likely if the head is reduced within 12 hours.

The prognosis after simple hip dislocation is disputed, with rates for a "good" result ranging from 85%⁴ to 40%,² osteoarthritis being the major long term problem.

Although this injury is thankfully rare, we suggest that the organisers and match referees

are responsible for ensuring that the court remains dry throughout the match, even if this means some delay while it is cleaned. It is also the responsibility of the players to wear shoes with an appropriate sole.

If players sustain unusual hip injuries, prompt medical attention is required to reduce the chances of significant sequelae, particularly sciatic nerve injury, osteoarthritis, and avascular necrosis of the femoral head.

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Take home message

Severe injuries in basketball are rare and medical attendance at matches is not mandatory. It is the responsibility of match officials to ensure a safe playing surface and arrange prompt medical care for injured players

Commentary

Basketball involves many combinations of sprinting, repetitive jumping, and lateral movements with sudden explosive bursts in opposite directions.¹ Initially considered a non-contact sport, in recent years the amount of allowable body contact has increased, together with the size and athleticism of players participating.² Lower extremity injuries, particularly to the knee and ankle, are common.²⁻⁵ Most injuries sustained are minor, requiring no more than 10 days missed from games or practice.⁴⁻⁵

This case identifies an injury rarely seen in sport, while also highlighting the importance of a controlled environment in preventing injury in basketball. Injury prevention measures must include the monitoring of the floor surface condition in both competitive and practice situations.

The authors also emphasise the benefit of prompt medical attention in this case. The nature of the injury mode in basketball (primarily minor)⁴⁻⁵ has meant that governing bodies have not considered medical presence mandatory at basketball matches other than major tournaments and international events. Although catastrophic injuries are not common in basketball, they do occur. Measures should be in place to ensure that, in the event of injury, trained personnel are in attendance at both practice sessions and matches to administer first line treatment.

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