

Dislocation of the Proximal Tibiofibular Joint: a Rare Sports-Related Injury

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KEY WORDS: proximal tibiofibular joint dislocation, lateral knee pain, hyperflexion injury, fibular head, ankle pain

IMAJ 2011; 13: 62–63

Dislocation of the proximal tibiofibular joint is considered a rare injury. It is thought that many cases are undiagnosed or not reported. This injury is described in athletes, mostly professional but also recreational, in the field of jumping, ballet dancing, parachuting and snowboarding [1]. It is classified as either acute proximal tibiofibular dislocation or chronic proximal tibiofibular instability [2,3]. In his 1974 paper, Ogden [2] suggested a modification to the classification offered by Lyle in 1925. He described four types of pathologies around the proximal tibiofibular joint: Type I – Subluxation, Type II – Anterolateral dislocation, Type III – Posteromedial dislocation, and Type IV – Superior dislocation. Of these, anterolateral dislocation (Type II) is the most common form of dislocation around this joint, accounting for 85% of proximal tibiofibular dislocations [2] and is the one most commonly related to sports. The mechanism of injury in this type is of sudden internal rotation and plantar flexion of the foot with an external rotation of the leg and flexion of the knee. This injury may be accompanied by an associated transient peroneal palsy [3]. Early diagnosis and management is a very important factor in the final outcome [4]. The diagnosis is essentially a clinical one. All cases of lateral knee pain and a history suggesting a proximal tibiofibular

joint injury should raise a clinical suspicion. There may be a bony prominence over the lateral aspect of the knee; range of motion may be full and may or may not be associated with clicking. Ankle movement may exacerbate knee pain. Plain radiographs of both knees are used as the first imaging modality. Computed tomography is indicated if there is diagnostic uncertainty [3]

PATIENT DESCRIPTION

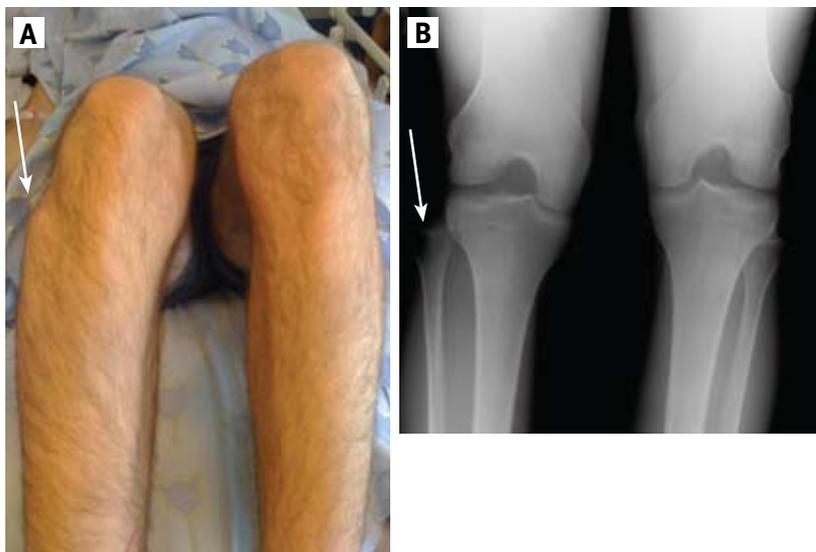
Our patient is a 27 year old amateur athletic male who trained in capoeira (an Afro-Brazilian art form that combines elements of martial arts, music and dance) for 4 years and who recently started practicing acrobatics. On the night he presented to the emergency room he had jumped from a trampoline to a high

mattress and onto a lower padded floor. He recalls landing with his knee in hyperflexion and his ankle everted. After the fall he felt tolerable pain while trying to bear weight. He was brought by ambulance to the emergency room.

Physical examination revealed a bony prominence over the lateral aspect of the knee, anterior to the head of the fibula. There was no palpable effusion within the joint and range of motion was limited due to pain. An anterolateral dislocation of the fibular head was suspected [Figure A]. Peroneal nerve injury was sought, but was not found. X-rays were taken in both the anteroposterior and lateral position, confirming the diagnosis [Figure 1B].

Reduction was attempted under sedation using ketamin (0.5 mg/kg) and midazolam (IV administration until spontaneous eye closure, 2.5 mg for our

[A] Photo taken in the emergency room before first reduction attempt
[B] Bilateral anteroposterior knee radiograph at presentation



patient) and using direct pressure over the dislocated fibular head. Two attempts at reduction failed and the patient was transferred to the operating room where under general anesthesia with full relaxation another closed attempt was made, which failed. Open reduction through a lateral approach was then performed, using a Hohmann retractor to lever the fibular head back into place while preserving the peroneal nerve. After reduction the joint was stable and no other means of fixation were deemed necessary.

The patient was examined the following morning. Apart from pain related to the surgical wound his knee had almost full range of motion and he was able to bear weight. He was reexamined for peroneal injury and was found to be intact. He was discharged the following morning, with recommendations for protected weight bearing on crutches for 3 weeks and gradual progression to full weight bearing over 6 weeks. He was seen in the outpatient clinic after 2 weeks when

the staples were removed and the knee assessed, at 6 weeks when full weight bearing was allowed, and at 3 months after the injury when he reported reaching an activity level similar to that before the injury.

COMMENT

Proximal tibiofibular joint injuries are considered a rare solitary finding and are mostly related to sporting activities. There are no clear guidelines as to the best treatment in the acute setting. It is proposed that in most cases reduction can be achieved easily by applying direct force over the joint. If a closed reduction attempt fails, open reduction is needed. There is no consensus regarding the use of internal fixation following open reduction. In our case, three attempts at closed reduction failed, under both sedation and general anesthesia. There is no consensus on the post-reduction therapy regimen. The literature suggests anything

from 6 weeks in non-weight bearing cast immobilization to early range-of-motion exercises. In our patient, full range-of-motion exercises were allowed immediately following surgery; while weight bearing was limited for the first 3 weeks with a gradual return to full weight bearing over 6 weeks.

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