CASE REPORT

A 27-year-old male was presented to Accident and Emergency Department with severe left knee pain and swelling over the lateral aspect of the knee following jump up during a basketball game and landing awkwardly on left leg. He was unable to bear weight on the left leg. This was the only isolated injury. On clinical examination, a diffuse swelling over the lateral aspect of the knee was identified. No scars or knee joint effusion existed. Range of movement of the knee joint was from 0 to 100 degrees actively. Tenderness was present on palpation over the lateral swelling. (Fig.1a & 1b) The knee joint was stable in terms of collateral and cruciate ligaments. The distal neurovascular status was intact.

After initial analgesia, the patient had an anteroposterior and lateral x-ray views of the left
knee demonstrating the proximal tibiofibular dislocation (Fig.2a & 2b). Further x-rays views of the ankle showed no fracture or disruption of ankle syndesmosis. A computed tomography (CT) scan of the left knee (Fig.3a & 3b) confirmed the diagnosis of isolated proximal tibiofibular joint dislocation in the anterolateral direction without any associated fracture.

The patient had closed reduction in emergency operation theatre under fluoroscopic guidance. A direct pressure over the fibular head directed from anterolateral towards posteromedial direction applied with knee flexed and ankle dorsiflexed and externally rotated. Successful reduction was felt with a ‘pop’ and confirmed on fluoroscopic images. Comparison with contralateral side was done to ensure satisfactory position (Fig.4). The patient was discharged with analgesia. He was allowed full weight bearing mobilization and encouraged full range of movement. He was seen in follow up at eight weeks’ time and reported no complications with full recovery.
DISCUSSION

The proximal tibiofibular joint dislocation was first described by Nelation in 1874. It only contributes less than 1% of all knee injuries and therefore the diagnosis is often missed.

The dislocation described is often a missed diagnosis, as it is an uncommon injury and it is confused with lateral meniscal injury on presentation. Most commonly, the mechanism of injury is high energy trauma such as car accident or twisting of the flexed knee in sports related injuries.

According to Ogden’s classification of 1974, there are two basic types of proximal tibiofibular joint dislocations: 1- The Horizontal type and the 2- Oblique. The oblique type is more prone to dislocation compared to the horizontal one due to relative restriction of movement at the joint. Ogden classified the proximal tibiofibular instability into four types:

1. **Subluxation**: Seen in patients with hypermobile joints. It is not a true dislocation, but shows increased joint mobility.
2. **Anterolateral**: The most common type of dislocation, presenting with prominent bulge over the lateral aspect of the knee.
3. **Posteromedial**: Usually results from direct trauma to fibular head and is unstable. It may...
require open reduction following failed closed reduction and internal fixation due to instability post reduction.

4. **Superior**: Usually it is associated with proximal fibular fracture and syndesmosis disruption. The fibular head dislocates superiorly. It is the least common type.

An inferior type dislocation was also described by Gabrien et al.6

Proximal tibiofibular dislocation is a rare type of clinical presentation, Nieuwe et al have published a case report and a literature review in 2014, in which they reported thirty cases of proximal tibiofibular dislocations, since 1974.

Clinical presentation is of twisting injury to the flexed knee with pain and swelling over the lateral aspect of the knee. A ‘pop’ is occasionally reported by the patient with inability to bear weight due to pain. Clinical examination should include testing of peroneal nerve along with the ligamentous stability assessment5,7.

Diagnosis can be achieved by anteroposterior and lateral plain x-ray views of the affected knee. If the x-ray views are not diagnostic, the contralateral unaffected knee views can be taken to compare the proximal tibiofibular joint and establish a correct diagnosis3,4,8. CT and magnetic resonance imaging (MRI) scans can be helpful to delineate the joint dislocation, occult fracture and ligamentous disruption9,10. It is important to exclude any associated injuries, such as fibular fracture, distal tibiofibular joint dissociation, Maisonneuve Equivalent Injury11, femoral or tibial shaft fracture and even dislocation of the knee joint.

Treatment of such isolated acute dislocations depends on the type of dislocation. As mentioned previously, the majority of dislocations are seen in the anterolateral direction. These can be managed with closed reduction. Under sedation, a direct pressure is applied on the fibular head in the posteromedial direction with knee flexed to 90 degrees, ankle dorsiflexed and externally rotated resulting in satisfactory reduction of the joint.12-14 For the other types of dislocations, an open reduction and internal fixation is required. In the reported cases by Nieuwe et al.4, where open reduction was required, internal fixation was performed.

The less common types of posteromedial or superior dislocation are managed with open reduction and internal fixation as a result of failed closed reduction and/or instability. Internal fixation options include screws, bioabsorbable pins and soft tissue procedures, such as using biceps femoris tendon15 and iliotibial fascia.16

Ongoing pain and instability may occur after proximal tibiofibular dislocations, particularly if they are misdiagnosed however, there is limited data available to outline the long-term outcome or any specific complications.4,13

**CONCLUSION**

An isolated traumatic anterolateral proximal tibiofibular dislocation is reported, treated successfully with closed reduction followed by immediate full weight bearing mobilization and no restriction in range of movement. In our case, good outcome was achieved without any restriction of movement and weight bearing status. Due to the rarity of the condition, a definitive agreed post reduction management plan does not exist and more cases are needed to formulate such a plan. For the time being, post reduction management and rehabilitation can be decided according to the individual case and clinician’s preference.

**Competing interests**

None declared.
REFERENCES

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