



[Home](#) | [Back](#) to Daily Updates

BIG Commerce
The Easiest Way to Sell Online™

(Sign up in 60 seconds)

TRY IT NOW FOR FREE!

INSTABILITY OF THE PROXIMAL TIBIOFIBULAR JOINT. Journal of the American Academy of Orthopaedic Surgeons, Vol. 11, No. 2, March/April 2003.

Jon K. Sekiya, MD

John E. Kubn, MD

ABSTRACT

Instability to the proximal tibiofibular, or TF joint, are rarely recorded but may occur more often than previously thought. The injury most commonly occurs with violent twisting of the flexed knee, as often seen in wrestling, gymnastics, skiing, basketball, and other more aggressive sports. The condition may be confused with bicipital tendonitis, hypermobile or torn meniscus, postero-lateral rotational instability, or ITB syndrome.

The joint is a synovial joint, and in 12% of the population, it actually communicates with the knee joint. The joint capsule is thicker anteriorly than posteriorly, and the anterior portion has 3 broad ligamentous bands that pass obliquely as they travel to their insertion in the lateral tibial condyle. The posterior portion has two ligaments, which travel from the fibular head to the lateral tibial condyle. The posterior ligaments are also reinforced by the popliteus tendon, and the postero-lateral knee structures also stabilize the joint. The LCL supports the proximal TF joint, and as it becomes lax after 30 degrees of knee flexion, the joint is more susceptible to injury.

There are two anatomic variations of the joint in humans. The horizontal variant has less than 20 degrees of joint inclination, and the fibular head is seated behind a fairly prominent lateral tibial ridge, which enhances stability. A second variant, the oblique variant, is defined by any angle of inclination greater than 20 degrees. This joint has a decreased surface area within the joint, which predisposes it to instability.

There are 4 types of instability of the proximal TF joint: atraumatic subluxation, anterolateral dislocation, posteromedial dislocation, and the rare superior dislocation. Anterolateral is the most common and involves injury to both the anterior and posterior ligaments. This usually results from a fall on a hyperflexed knee and also usually injures the LCL. The fall on the hyperflexed knee may also involve a plantarflexed and inverted foot, and with the laxity to the LCL and hamstring tendons in this position, the fibular head can dislocate and migrate anteriorly. Posteromedial dislocations are not as common, but usually involve injury to the peroneal nerve. This can occur from a direct blow, such as when the knee hits a dashboard during a wreck. This type of injury can also occur when there is a strong contraction of the biceps femoris while the knee is twisting, pulling the fibular head backwards. The superior dislocation is rare, and usually occurs from trauma that directs forces upwards, as in a fall. This injury also occurs with concomitant interosseous membrane damage.

Clinical presentation may include pain, swelling, reluctance to weight bear, limited knee extension, crepitus, and visual deformity. The patient may have a history of generalized ligamentous laxity, especially younger patients. The popping and cracking that occur can mislead the clinician into thinking there is a meniscal problem, a postero-lateral knee problem, or an ITB snapping situation. The physical exam should take place with the knee flexed to 90 degrees to relax the LCL. Grasping the fibular head in the fingers and applying an anterior and posterior force may reproduce the patient's complaints of pain or instability feelings. The Radulescu sign is performed by having the patient lie prone with the knee flexed to 90 degrees. One hand stabilizes the thigh, while the other internally rotates the lower leg to see if the fibular head can be dislocated anteriorly. Radiographs and axial CT can be used to confirm the diagnosis

Treatment of atraumatic instability can include cylinder casting for 2-3 weeks, a supportive strap, and gastroc strengthening. Acute dislocation treatment is still argued, with some favoring immobilization for 3 weeks with the knee slightly flexed, while others reduce the dislocation and simply limit weightbearing. One study found that even with the immobilization, there was a 57% continued problem rate requiring future surgery.

Surgical treatment can include resection of the fibular head and neck while maintaining the styloid, or fusion of the joint. Neurolysis is performed when there is scar tissue at the location of the peroneal nerve. Resection has been shown to lead to future foot/ankle and knee problems, and should not be an option for athletes.

COMMENTS

This is a region of the lower extremity that is often clinically neglected. I usually perform a brief evaluation when treating knee and ankle sprain patients just because of my own personal history. I suffered a significant ankle sprain during high school wrestling (actually I found out years later I had broken it, which explained the continued discomfort! I still finished the season!). When the sprain occurred, I immediately thought I broke my lower leg, as that is where the pain occurred, and we all heard a loud snap that emanated from my knee. It wasn't until I began practicing with a good group of ortho PT's that fibular head subluxation was discussed, and I realized what had occurred. It must have self-reduced and there are no residual symptoms, but I have had other athletes that acknowledge pain in that area after a severe inversion sprain. I also had a patient recently who suffered a tri-malleolar fracture, required an ORIF, and now has peroneal palsy. This type of dislocation most likely occurred, and the patient was educated appropriately so that the surgeon did not get blamed for the problem

[Home](#) | [Back](#) to Daily Updates