

Traumatic Proximal Tibiofibular Dislocation: A Marker of Severely Traumatized Extremities

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Purpose: Traumatic dislocation of the proximal tibiofibular joint (PTFD) is not well documented in the literature. The purpose of this analysis is to report on the clinical implications and epidemiology of this injury.

Methods: The institutional trauma database was queried to collect skeletally mature patients with operatively treated proximal tibiofibular joint dislocations. The search included all patients treated between July 1, 2006 and December 31, 2013. To obtain our denominator, we queried the database to find all operatively treated tibial plateau and tibial shaft fractures over the same period. Patients included in this analysis had their charts and radiographs analyzed for age, sex, mechanism of injury, injury pattern, OTA classification, open fracture, compartment syndrome, vascular injury, and neurologic injury and recovery.

Results: There were 31 dislocations in 31 patients. PTFD was associated with a tibia shaft fracture in 45% (14/31) and with a tibial plateau fracture in 55% (17/31) of cases. The incidence of PTFD was 1.4% (14/1013) of operative tibial shaft fractures and 2.1% (17/803) of operative tibial plateau fractures. Patients had an open fracture associated with their PTFD in 61% (19/31) of cases. Two patients (6.5%) presented with a vascular injury that underwent a successful repair without vascular sequelae. Two different patients (6.5%) subsequently underwent an amputation for mangled extremity (one above the knee and one below the knee). In the remaining 29 patients without early amputation, the incidence of compartment syndrome was 28% (8/29) and the incidence of peroneal nerve palsy was 35% (10/29). Only 30% (3/10) of the nerve palsies clinically recovered within the observation period.

Conclusion: Traumatic PTFDs are infrequent injuries (approximately 2% of tibial fractures) that can be associated with both tibial plateau and tibial shaft fractures. However, this seemingly innocuous injury is a marker for a severely traumatized limb carrying a very high rate of compartment syndrome (28%), open fractures (61%), and peroneal nerve palsies (35%) that, for the majority, do not recover.