A Distal Fibula and Pilon Fracture with a Dislocated Proximal Fibular Head in a Collegiate Softball Athlete.
Smith JC, Ribbons KL, Stephenson LJ: Stony Brook University, Stony Brook, New York.

**Background:** An 18 year old female softball outfielder with a previous history of proximal fibular subluxation injured her left leg during sliding drills performed at full speed on field turf. While sliding her left, tuck, leg became lodged in the turf forcing her knee into external rotation and ankle into eversion and plantar flexion. Athlete experienced substantial pain and had an obvious deformity at the ankle with foot in eversion and protruding of the lateral malleolus. The proximal fibular deformity was obstructed by her athletic apparel. On-field evaluation revealed a possible distal fibular fracture with neurovascular status intact. Athlete had a positive squeeze test with pain proximally and distally. Athlete was extremely tender to palpate around ankle and fibular head and could not plantar or dorsiflex. The athlete’s cleat was removed with shears and a vacuum splint was applied. Athlete was immediately referred to emergency department **Differential Diagnosis:** Grade III deltoid ligament sprain, tibial plateau fracture, syndesmotic sprain, proximal fibular head dislocation, fracture of distal tibia, fracture of distal fibula. **Treatment:** Diagnostic imaging from MRIs and CT scan revealed a dislocated proximal fibular head, closed distal fibular and pilon ankle fracture, and a grade II PCL sprain. The fibular head was initially reduced and athlete was placed in a fiberglass cast for approximately two weeks to allow for swelling to decrease. A surgical ORIF was performed to stabilize the distal tibia and fibula and bone fragments were excised from the ankle joint. Athlete was placed in a fiberglass cast for three months and was non-weight bearing (NWB). Upon cast removal athlete was placed in a walking boot and NWB exercises were initiated. Athlete preformed active ankle range of motion, strengthening for quadriceps and intrinsic muscles of the foot. After one week of rehabilitation the athlete began progressive resistive ankle exercises. After two weeks the athlete was able to walk without walking boot for short distances and was placed in an air cast splint. At six months status post ORIF a jogging protocol was initiated; at which point she demonstrated hip external rotation during the swing phase and engaged in gait training that includes augmented feedback during straight-ahead jogging and sport specific motions. Athlete continues to complain of substantial bone related pain when jogging. **Uniqueness:** The type of injury sustained most commonly occurs in high velocity, high force impacts such as a motor vehicle accident, and most typically involves an open fracture. This athlete sustained her injuries during participation in an athletic event with relatively low forces and velocities, and all fractures were closed. The nature of this injury has resulted in increased proximal tibiofibular and ankle mortise joint play, which decreases stability at the ankle joint. Even with ORIF this athlete displays biomechanical dysfunction that needs to be addressed with functional assessments and neuromuscular rehabilitation that includes augmented feedback. **Conclusion:** It is important to recognize that playing surface can have an effect on the type and severity of injury sustained during athletic practices. When an athlete sustains a severe injury to the structures of the ankle mortise and knee, any alterations in gait biomechanics must be recognized and addressed to improve function and allow for return to play. **Word Count:** 529