Background: A 19 year old male, NCAA Division I ice hockey athlete with no previous known injury to the right ankle skated full speed into the boards during a contest. The athlete stated he was forced into dorsiflexion. He was immediately removed NWB from the ice. An initial evaluation revealed no obvious deformity, moderate swelling, 8/10 pain, strong dorsal pedis pulse, tenderness to palpation over the medial and lateral ligaments, and with palpation to the distal fibula and tibia. The squeeze test was negative. The evaluation was immediately stopped when active range of motion increased pain. The athlete was immediately treated with RICE, a posterior splint, and crutches. The following day he presented with localized pain, swelling in the ankle mortise, and a strong distal pulse. He was then referred to the team orthopedist. Differential Diagnosis: Grade 3 medial or lateral ankle sprain, distal anterior inferior tibio-fibular sprain, distal tibia fracture, distal fibular fracture, tibiofibular fracture, talus fracture.

Treatment: Radiographs revealed a Hawkins 2 talar neck fracture with 3-4 mm of displacement from the subtalar joint. There was additional evidence of a previous avulsion fracture of the medial malleolus. The athlete was kept in the posterior splint, treated with RICE, and given prescription pain medication for one week until an open reduction internal fixation repaired the talus, the deltoid ligaments, and removed the medial malleolar avulsion. Special consideration was taken to ensure the talar head and neck was maintained in a neutral position. A compression dressing and posterior splint were applied post-op. One week post surgery; the incision site was clear of infection and the athlete was placed in a well padded short leg NWB cast. At two weeks, the staples were removed and the athlete was casted in slight plantar flexion. The athlete complained of severe pain the following day due to excessive compression which resolved with recasting. Eight weeks S/P x-rays revealed Hawkins sign, identifying healing of the talus with no signs of avascular necrosis. Rehabilitation included ankle range of motion for plantarflexion and dorsiflexion, lower leg, knee, and hip strengthening exercises, and progressed as tolerated. Twelve weeks S/P, the fracture had healed and the athlete was cleared to lift weights and skate. He continued PWB in a walking boot for one week due to an antalgic gait. At this time, rehabilitation concentrated on supervised FWB activities, inversion and eversion strengthening, and joint mobilization. Skating caused minimal discomfort. Seventeen weeks S/P the athlete participated in a team run which caused mild discomfort which resolved quickly. He returned to all team workouts by 19 weeks. At 38 weeks, the athlete was pain free but still lacking approximately 4 degrees of dorsiflexion, 14 degrees of plantar flexion, and 14 degrees of inversion. Rehabilitation continues to focus on Mulligan’s mobilizations and fibular glides to work on increasing the athlete’s ankle ROM.

Uniqueness: The force needed to fracture the talus is high, with fractures of the talar neck typically being the result of landing from a height or a motor vehicle accident. Conclusion: There is a high risk of avascular necrosis with talus fractures, therefore the Hawkins sign must be seen to identify bone healing. Also with the severity of the displacement there is a high chance of ankle...
osteoarthritis. The neutral alignment of the talus must be maintained during surgery and throughout recovery. The athlete still has decreased range of motion, but is working to regain this in order to return to normal function and play.

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