

MULTIDISCIPLINARY MANAGEMENT OF AN ANKLE INJURY WITH PERSISTENT ANKLE DYSFUNCTION IN AN ELITE LEVEL TRACK ATHLETE: A CASE STUDY

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JOHN N. NASH AWARD for Best Multi-Disciplinary Abstract

HISTORY: A 25-year old female elite level track athlete incurred a hyper inversion injury of her left ankle during an overseas competition. The attending health care provider put her on crutches and prescribed her an OTC anti-inflammatory. Two days post injury she returned to the States and presented to the clinic unable to bear weight on her left ankle with 8/10 pain.

PHYSICAL EXAM: Soft tissue swelling, pitting edema and +2 TTP of the proximal fibula diaphysis, medial and lateral malleolus, anterior talus, and fifth metatarsal base. Skin around the ankle and dorsum of the foot appeared shiny from the swelling. ROM severely limited in all directions with minimal intramuscular contraction visible. Drawers, talar tilt, and strength test were difficult to assess due to effusion and pain. Positive tibia-fibula squeeze test. Pulses and capillary refill were WNL's

DIFFERENTIAL DIAGNOSIS: High ankle sprain, fibular diaphyseal fracture, ATFL sprain, talar dome lesion

TEST AND RESULTS: X-ray revealed marked soft tissue swelling involving anterior and lateral aspects of the left ankle with no visible fractures. MRI of the left ankle revealed partial thickness tear at the fibular insertion of the ATFL, extensive subcutaneous edema surrounding the ankle joint and extending into the distal lower extremity, irregularity at the fibular insertion of the CFL, fluid within the posterior medial portion of the peroneal tendon sheath with no evidence of tendon tear, fracture, or osteochondral lesion. MRI of the lower leg reveals per fascial fluid along the anterior and lateral compartments and evidence of prior diaphyseal fracture which has since healed.

IMPRESSIONS/WORKING DIAGNOSIS: High grade ATFL and CFL sprain with associated hematoma within overlying anterolateral soft tissues and extensive subcutaneous edema surrounding the ankle into the lower leg.

TREATMENT PLAN: Treatment from DO, ATC, DC, and PT team was progressive with weekly modifications based on evaluation - **Passive therapy and physiotherapeutic modalities:** Voltaren, Motrin, ice, elevation, crutches, walking cast, Game Ready, NormaTec, pulsed ultrasound, H-wave, k-tape; **Manual therapy:** MRT, Graston, mobilizations, CMT; **Active rehabilitation:** ROM, strengthening, proprioception, and normal gait ambulation on anti-gravity treadmill.

FOLLOW UP: Athlete returned to training however after 8 months continued to experience significant decrease of both active and passive ROM with mild pain along the medial ankle during weight bearing and DF. Pt. was unable to squat past 10° of DF with her knees bent. There was a 30° – 35° discrepancy left to right in total ROM from PF to DF with tight capsular end feel.

TESTS AND RESULTS: MRI of the ankle was taken and showed stress changes about the medial malleolus, extensive fibrosis within the DL, peroneal retinaculum, ATFL,PTFL and peroneus brevis tendinopathy. There was non-visualization of the peroneus longus tendon.

DIAGNOSIS: Left ankle arthrofibrosis, peroneal brevis tendonopathy, possible peroneus longus tendon rupture.

TREATMENT PLAN: Referral to D.P.M. for a series of two MUA. Contrast bath and acupuncture with E-stim to decrease pain and swelling. Nutritional counseling for anti-inflammatory dietary modification. Continued soft tissue treatment, mobilization, CMT and active care to maintain motion and improve function.