SUBTLE SYMPTOMS AND COMPLEX COURSE OF A DISPLACING CUNEIFORM WITH MID-FOOT INSTABILITY IN A FEMALE COLLEGIATE SOCCER PLAYER: A CASE REPORT
Sicard, J, Guilfoyle, P, Sgherza, A; Department of Exercise Science, Lyndon State College, Lyndonville, Vermont.

Background: A twenty-year old female collegiate soccer goalie competing in a recreationally competitive summer league game sustained right foot trauma following a dramatic collision. The mechanism of injury observed was a blunt crush to the inverted right foot. The objective of this case report is to present the complex course of management following initial subtle symptoms of Lisfranc injury. Initial examination revealed inflammation and mild bruising about the mid-foot. The athlete was point tender throughout the right medial longitudinal arch. Pain was exacerbated with weight-bearing resulting in mild antalgic gait. Range of motion and strength were decreased for right ankle motions and right leg muscle groups, respectively.

Differential Diagnosis: Lisfranc injury (fracture and/or dislocation), ligamentous injury of the Lisfranc joint, soft tissue disruption about the tarsometatarsal joint complex. A series of radiographs, three months into the clinical course, identified findings consistent with initial (one month post injury) radiographs – diastasis of the mid-tarsus (displacement less than 2 mm) with no avulsed bone fragments (negative fleck sign). Subsequent magnetic resonance images were read as negative for abnormality. A bone scan was ordered, however, the athlete failed to comply. Treatment: Acute phase (Weeks 1 – 4): Limitations in ankle and foot range of motion and slight decreases in extrinsic muscular strength did not prohibit the athlete from participating in soccer, albeit, with limited performance and continued yet tolerable discomfort. Sub-acute phase (Weeks 5 – 9): A course of orthotics was prescribed and the athlete continued to participate in competition. Pain, swelling, and range of motion had improved from the acute phase, however, right foot and ankle muscular weakness persisted. Toward the latter phase of this summer season, the athlete identified a “feeling” of instability and popping sensation during the push-off phase of gait. Chronic phase (Weeks 10 – 20): A period of active rest, symptom relieving modalities, and progressive therapeutic exercise preceded an unsuccessful attempt at return to collegiate play. Cortisone injection, non-steroidal anti-inflammatory prescription, and fitting for a CAM walker provided palliative relief. Physician consultation confirmed the requirement for surgical procedure – first metatarsal and first cuneiform fusion. Post-surgical rehabilitative phase (Weeks 20 – 36): A periodized progression began with gait training and active and passive range of motion (Phase 1 = return to partial weight bear {CAM walker}). Phase 2 (return to full weight bear {CAM walker}) emphasized right lower extremity static balance and proprioceptive training. Phase 3 (return to full weight bear and functional activity) emphasized progressive resistive exercises (open and closed chain) and neuromuscular coordination. Return to sport specific activity (Phase 4) included speed, power, and skill training. Uniqueness: Subtle symptoms and the failure to recognize a prolonged recovery time yielded longer term disability than expected. Conclusion: Nine months post initial injury, the athlete returned to competitive collegiate softball practice. Key Words: Lisfranc injury, diastasis.