BACKGROUND: The case presents a 19-year-old female swimmer with a prior medical history of inversion ankle sprains, a distal fibula fracture, and surgery to remove a bone fragment in the foot. The patient reported an ankle inversion injury sustained during conditioning and complained of pain along the medial and lateral aspects of the ankle mortise. The patient had substantial amounts of ecchymosis and edema around the joint. The patient was unable to walk and range of motion of the ankle was limited in dorsiflexion, plantarflexion, eversion, and inversion that resulted in severe pain. The patient’s ankle, foot, and toes were extremely sensitive to touch. The patient reported sharp pain upon palpation along all areas of the foot and ankle. The patient had extreme sensitivity to temperature changes while performing exercises in water. The patient experienced cold and numbing sensations in her distal phalanges and midfoot. After four weeks of rehabilitation, little to no improvement was apparent. The patient’s symptoms became increasingly worse as the months progressed despite a conservative approach to treatment.

DIFFERENTIAL DIAGNOSIS: Grade 3 anterior talofibular ligament sprain, peroneal strain, tarsal fracture, fibular fracture, lymphatic obstruction, Complex Regional Pain Syndrome (CRPS).

TREATMENT: The patient was referred out to the orthopedic doctor who suspected CRPS as the definitive diagnosis. The symptoms did not regress and another team physician gave a second opinion and confirmed the diagnosis of CRPS. The treatment of CRPS is unique for each patient. Treatment should include pain management, functional rehabilitation, and psychological rehabilitation. Intensive inpatient rehabilitation is effective for children with CRPS (Fukushima, Bezerra, Villas Boas, Valle, & Vidal, 2014). Holistic approaches to rehabilitation and treatment have been found to be the most beneficial (Kishner, Rothaermel, Munshi, Malalis, & Gunduz, 2011). Treatment initially included range of motion exercises of the foot to reduce swelling. The later stages of rehabilitation focused on familiarizing the patient with correct gait and psychological confidence to ensure the injury was healing. To reduce pain, various distraction methods were used such as watching videos, listening to music and talking to other people during treatments. To increase confidence, the patient was encouraged to view her long-term improvements as opposed to the very slow short-term progress that she was making. The patient responded well to the distraction methods. UNIQUENESS: Complex regional pain syndrome has been found in 5.46 cases out of 100,000 people per year in the United States. The peak incidence of cases was seen in males and females aged 50-70 years old, making this diagnosis even more rare among college-aged individuals. The pain and loss of mobility associated with CRPS is usually disproportionate to the initial injury as was the case with this particular patient.

CONCLUSIONS: The patient is no longer able to participate in swimming. After three and a half months of rehabilitation, the patient is pain free, has full range of motion, and is fully weight-bearing. The onset of the condition was thought to be triggered by memories of her previous foot surgery. The patient was able to return to full functioning activities of daily living. Aggressive rehabilitation allowed the patient to regain the functional movement lost due to injury.

RELEVANT EVIDENCE: The research regarding complex regional pain syndrome proposes aggressive rehabilitation to be effective (Kishner et al., 2011). Further evidence is needed to enhance evidence-based treatment of CRPS. The current rehabilitation suggestions incorporate both physical and psychological interventions. Both the physical and psychological interventions have been shown to be extremely important when rehabilitating a patient back from CRPS (Kishner et al., 2011).