Treatment of a Female Division I Collegiate Soccer Goalkeeper with Chronic Chest Pain
Margulies, KM, Norkus, SA, Kosior, KA; Quinnipiac University

**Background:** In June 2008, while working at a summer camp a 21 year old female division I soccer goalkeeper began to experience intermittent chest pain after exercise. She had no previous history of chest pain or cardiac pathologies. The athlete was sent by the nursing staff to the Emergency Department. EKG, echocardiogram and chest radiographs were negative for abnormalities. The physician suggested a follow up with her primary care physician. After meeting with her primary physician she was advised to play as tolerated. The athlete reported to pre-season and while participating in soccer in late August the athlete continued to experience intermittent chest pain. Upon evaluation by the staff ATC it was noted the athlete was experiencing difficulty with deep breaths primarily during exhalation, and was tender to palpation along the lateral boarders of the sternum over the articulations of the 6\(^{th}\), 7\(^{th}\), and 8\(^{th}\) ribs. At this time the athlete was referred to the team physician. **Differential Diagnosis:** Cardiac pathology, exercise induced asthma, intercostal muscle strain, rib dislocation/subluxation, stress fracture, costochondritis. **Treatment:** Previous radiographs were reviewed and no abnormalities were identified. The athlete was cleared to play as tolerated, however due to the level of discomfort experienced, a second opinion was sought. A cardiologist re-reviewed the EKG which had no abnormal findings. A rheumatologist ordered blood tests to identify any inflammatory diseases, and all blood work was normal. She was then referred to a pulmonologist who eliminated the possibility of asthma but did identify Pectus Excavatum and costochondritis. The athlete was then referred to a pain management clinic to discuss cortisone injections. The athlete rejected this option. She was once again cleared to play as tolerated. Throughout the spring and summer she chose not to play soccer, however did participate in swimming and cycling, despite chest discomfort. She returned to competitive soccer during the fall of 2009 but was still experiencing intermittent pain, and followed up with a local physician who ordered a chest MRI. The MRI showed no structural damage and confirmed the diagnosis of costochondritis. The athlete was prescribed Indocin for inflammation. A cortisone injection was discussed again with a therapeutic exercise program for posture and scapular stability. In the summer of 2010 the athlete saw another physician for upper thoracic pain and was diagnosed with mild scoliosis. Continued therapy for posture and scapular stability was recommended. **Uniqueness:** This case is particularly unique with the athlete’s predisposition to costochondritis due to pectus excavatum and mild scoliosis. Both pectus excavatum and costochondritis are not commonly studied or researched in the athletic training community. Pectus Excavatum is thought to be caused by an overgrowth of the rib cartilage and is the most common chest wall birth defect. It affects one in 300 births and is more common in males than females. Costochondritis is often an overuse injury in athletes and can last a few weeks to years before completely healed. This case is also unique given that there is no known specific mechanism and instead the sport and position as goalkeeper are the irritants for the athlete. **Conclusion:** The athlete is still participating in soccer while tolerating the intermittent chest pain. Her position as a goalkeeper combined with the chest wall deformity constantly puts pressure on the rib cage more frequently irritating the costochondral joints. As athletic trainers it’s important to note that some cases may not have an immediate or rehabilitative solution. Chronic injuries and conditions, especially when the athlete has been predisposed can be frustrating and limiting. Managing the athlete’s pain becomes a day to day task, especially when the athletes sport is the irritant. **Word count** 600