Diagnosis of Nonsustained Ventricular Tachycardia in an 18-Year-Old Female College Softball Player: A Case Study
Hodson, VE. Springfield College, Springfield, Massachusetts, Athletic Training Education Program

**Background:** An 18 year old female college softball player took herself out of practice complaining of chest pain. Her face was flushed, and she was unsteady and hunched over. Her pertinent medical history included occasional headaches and numbness and tingling down into her hands and feet with activity. She was seen by a pulmonologist three years prior to the incident and he concluded that nothing was out of the ordinary. Evaluation revealed pain on the left side of her sternum and tightness in her chest. Two sets of vital signs were taken 20 minutes apart. Pulse and blood pressure were elevated but consistent with her level of activity at the time. She was taken out of practice for the day and referred to a cardiologist and a physician. **Differential Diagnosis:** Respiratory distress, cardiopulmonary pathology or tachycardia. **Treatment:** The cardiologist gave the patient an event monitor and cleared her for practice. Upon returning to practice, the athlete experienced shortness of breath and a feeling of tightness in her heart. Her face was pale but her lung and cardiac auscultation were normal. She was removed from practice and rested. Two days later, the patient complained of right lateral neck pain that radiated down her arms and hands. She was also experiencing sharp pain in her arms and left elbow. At this point, the patient was taken out of practice until further diagnosis. A little over a week later, the patient was referred to an electrophysiologist. An echocardiogram, stress echocardiogram (ECG), and MRI were ordered at this time, and the patient was restricted from activity. The echocardiogram, stress echocardiogram, and the MRI results all came back normal. The event monitor results however indicated that the athlete experienced one bout of asymptomatic ventricular tachycardia and was therefore diagnosed with nonsustained ventricular tachycardia (NSVT). The patient was given information about her condition and what should be done when episodes occur. She was cleared for full participation, but with the stipulation that if her heart rate exceeds 150 bpm, EMS must be activated. As a precaution, an Automated External Defibrillator (AED) was always present and taken to every game and practice. The patient finished her season with few minor episodes and continued her softball career the following seasons. **Uniqueness:** Nonsustained ventricular tachycardia is an arrhythmia that can be life threatening. NSVT can lead to ventricular fibrillation, asystole, or even death. The tachycardia is nonsustained because it lasts no longer than 30 seconds. However, with some episodes, the heart rate can reach a level where defibrillation is the only viable treatment. While preparedness for an emergency situation is of the utmost importance, no daily treatment is necessary for NSVT. A similar condition is Supraventricular tachycardia. Unlike NSVT, Supraventricular tachycardia is rarely life threatening and can be treated with physical maneuvers such as the Valsalva maneuver. **Conclusions:** In the case of this athlete, a life threatening condition could have easily been diagnosed as a brief episode of breathing difficulty. When patients are experiencing any type of chest pain, regardless of the severity, it is important for the athletic trainer to consider all potential pathologies. Athletic trainers and athletes, as in this situation, need to have a good relationship so athletes will be willing to seek help when they need it. **Word Count:** 511