Respiratory Distress in a Collegiate Field Hockey Player
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Background: During fall fitness testing, a female athlete stopped running and was observed to be struggling to catch her breath as her body appeared to go into jerky spasms. The medical staff approached the athlete, anticipating an incidence of exercise induced asthma (EIA) which had troubled her since childhood; she suffered multiple EIA attacks earlier in the season. The athlete was struggling to breathe, taking short shallow breaths and there were no sounds associated with a typical asthma attack such as wheezing or coughing. The athlete was in obvious distress. She was unable to catch her breath even with the aid of her emergency albuterol inhaler. The athlete was transported to campus health services where she received an albuterol nebulizer treatment as well as an epinephrine injection, both of which were also ineffective. Since symptoms persisted ten minutes after treatment, she was transferred to the local hospital via ambulance. She was admitted into the intensive care unit and treated with an albuterol nebulizer, oxygen and multiple corticosteroid injections. Ultimately she was intubated and connected to a BPAP machine using helium as a mode to increase the airflow into the lungs. Differential Diagnosis: Exercise induced asthma, upper respiratory infection, anaphylactic shock, vocal cord dysfunction

Treatment: Following intubation the athlete’s respiratory difficulties subsided. A diagnostic laryngoscopy to evaluate vocal cord function during respiration revealed abnormal adduction of the vocal folds during respiration leading to the diagnosis of vocal cord dysfunction (VCD). Once she regained full, natural respiration the athlete met with a speech therapist who instructed her in relaxation techniques, diaphragmatic breathing and relaxed throat posture. Diaphragmatic breathing uses the diaphragm to expand the stomach, creating deeper breaths in turn decreasing anxiety, it is also known as belly breathing. Relaxed throat posture was used to help relax the athlete’s vocal folds. While in the hospital the athlete had recurrent episodes of respiratory distress but was able to use the relaxation techniques to regain control of her respiration. After four days she was released from the hospital and instructed to continue practicing relaxation techniques with the certified athletic trainer; subsequently the team physician cleared her to return to play. Two weeks after hospital discharge, the athlete had a severe exacerbation of signs and symptoms following a game which lasted nearly 45 minutes. She was successful in regaining control of her respiration through relaxation techniques learned during her hospital stay. She completed the rest of the season without any significant return of respiratory distress. Uniqueness: Respiratory distress in athletes is often due to an asthmatic condition. Most athletes respond to treatments of inhalants or corticosteroids. When these treatments are unsuccessful one must consider other diagnosis. VCD is a rare condition but has become more common since the first reports in 1986. VCD is commonly misdiagnosed due to the signs and symptoms that are shared with asthma. Unlike EIA the patient cannot recreate signs and symptoms, thus making it difficult to diagnose until there is an acute onset. Once the patient is diagnosed and taught relaxation techniques many are able to reduce severity of a sudden onset of VCD. Conclusion: Clinicians should be able to distinguish VCD from EIA as the treatments are different. The most important symptom to observe is where the stridor is heard and where the patient experiences the obstruction. Stridor emanating from the neck is indicative of VCD. The diagnosis of VCD can only be made during an emergency and acute onset due to the inability to recreate symptoms. Understanding the different signs and symptoms of VCD and EIA is key to properly diagnose an athlete. Word Count: 595.