Fibromuscular Dysplasia in a Collegiate Female Athlete
Guadagnino T*, Petruzzo J†, Koesterer T*: *State University of New York at Cortland, Cortland, New York; †Cornell University Ithaca, NY

**Background:** A nineteen-year-old female Division I volleyball and track athlete, with no prior personal or family medical history reported to the athletic trainer during volleyball season complaining of a “cold.” The athlete described treating herself with OTC nasal spray and decongestant. Objective findings included runny nose, sore throat, fatigue, cough, and sinus-pressure. **Differential Diagnosis:** The signs and symptoms were consistent with sinusitis, influenza, strep infection, allergic rhinitis and upper respiratory infection. **Treatment:** While the Physicians findings did include signs and symptoms of sinusitis, the most significant finding was a blood pressure of 180/110. Her pre-participation blood pressure was 120/70. The physician immediately put her on two antihypertensive medications. After four days on medication, her blood pressure had not decreased, she developed a severe headache and was referred to the emergency department. As part of a secondary hypertension examination, an ultrasound indicated diminished blood flow to the right kidney and the right kidney was smaller. The athlete was referred to a nephrologist who performed an angiogram, which indicated a severe narrowing of the right renal artery consistent with fibromuscular dysplasia, and provided a final diagnosis of renal artery stenosis secondary to fibromuscular dysplasia, an abnormal development or growth of cells in the walls of arteries. After consultation, the athlete decided to undergo renal angioplasty due to her concerns about the potential long-term effects of ACE-inhibitors. Balloon angioplasty and stent placement were successful, and allowed the athlete to progress toward full athletic participation. Initially the athlete was allowed aerobic activity as tolerated, but weight training was limited. She was also instructed to monitor her blood pressure frequently. The athlete has been cleared by the physician for return-to-play with one restriction; she is not allowed to lift more than 50 lbs. She continues to monitor her blood pressure, maintain a BP journal and will continue to follow up with her physician. **Uniqueness:** This athlete presented to the athletic trainer with signs and symptoms that may or may not have been related to her final diagnosis. Renal artery stenosis accounts for approximately 1-5% of patients with hypertension, and of those, fibromuscular dysplasia is responsible for less than 10% of renal artery stenosis cases. **Conclusion:** An athlete participating in collegiate athletics with no history or high blood pressure or related problems presented with signs and symptoms of a “cold.” During normal assessment of patient’s vital signs, the physician determined the patient had severe hypertension. This case stresses the importance of monitoring vital signs periodically throughout the season, as well as in pre-participation screening, and especially when signs and symptoms may indicate a change in an athlete’s general health status. **Relevant Evidence:** Renal artery stenosis is a cause of secondary hypertension affecting approximately 1-5% of the hypertensive population. The two main causes of renal artery stenosis are atherosclerosis (90% of all cases) and fibromuscular dysplasia (<10% of cases). Fibromuscular dysplasia is an abnormal development or growth of cells in the walls of arteries that may cause the vessels to narrow or bulge. **Word Count:** 494