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**Chronic Neck Pain, Vasculopathy, and Pre-Syncope in a Young Adult: A Type 4 Case Study**

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**Background:** The patient is a 23-year-old college female presenting with chronic cervicalgia, bilateral upper extremity neurovascular symptoms, and insidious pre-syncope episodes over the past 3.5 years. Upper extremity neurovascular symptoms include bilateral numbness and tingling into the hands and bilateral throbbing arm pain originating proximal to the elbow and traveling to the fingers, which worsens with cervical rotation bilaterally. The patient has experienced 10 episodes of pre-syncope lasting less than 30 seconds that occur with cervical flexion, extension, or bilateral rotation. Pre-syncope symptoms include lightheadedness, blurry vision, increased neck/arm pain, headache, and malaise. Upon clinical evaluation, no obvious deformity, discoloration, or swelling of the cervical spine were present. The patient was tender to palpation on C2-C5 spinous processes. Cervical range of motion (ROM) was within normal limits; a deficit of 15 degrees was present for right cervical rotation. Cervical manual muscle testing (MMT) were all 5/5, with pain in the posterior cervical spine during ROM and MMT of cervical flexion, extension, and bilateral rotation. Positive findings were reported with cervical distraction, vertebral artery (bilaterally), Allen's (bilaterally), and Adson's (bilaterally) special tests. Neurological assessment identified horizontal maltracking of the eyes, causing lightheadedness and headaches. All other components of a cranial nerve assessment and upper quarter screen were normal. **Differential Diagnosis:** Differential diagnoses include herniated disk, nerve root compression, brachial plexus pathology, spondylosis, vertebral fracture, vertebral osseous lesions, vascular stenosis and/or occlusion, and Thoracic Outlet Syndrome (TOS). **Treatment:** The patient was evaluated by her primary care physician, followed by a sports chiropractor, spine physiatrist, general orthopedist, spine orthopedist, physical therapist, vascular surgeon, and neurologist. When one provider could not make a definitive diagnosis or an intervention failed, the patient was referred to the next provider. Multiple differential diagnoses were ruled out via diagnostic imaging and laboratory results, including radiographs, MRI, and SPECT-CT of the cervical spine, brain, upper extremity, and chest CT Angiogram. The patient received a diagnostic bilateral upper extremity duplex ultrasound, which revealed mild arterial pressure variability with maneuvers. Imaging of the cervical spine revealed signs of spondylosis and TOS. Initial treatment included sports chiropractic care, rehabilitation, and Tizanidine prescription. Limited pain relief from the 2 interventions resulted in the patient undergoing 2 occipital nerve blocks and 3 radiofrequency ablation procedures performed by the spine physiatrist. The patient attended physical therapy for 3 months where she followed a cervical spine and TOS protocol and failed to notice meaningful change in symptomology. **Uniqueness:** This case is unique as there was no specific mechanism of injury. Diagnostic imaging and laboratory tests have resulted in no significant positive findings, making diagnosis challenging. The spine orthopedist, vascular surgeon, and neurologist cannot explain the medical link between pre-syncope in combination with cervicalgia and neurovascular symptoms. The cumulation of the patient's symptoms has impacted her activities of daily living (ADL) and quality of life (QoL), such as difficulty completing schoolwork, lack of adequate sleep, heightened fear of driving, and increased anxiety. She feels stressed and overwhelmed by the time demand of medical services, the complexity of the health insurance process, and cost of services. **Conclusion:** The patient required extensive medical evaluations and interventions from multiple healthcare providers, which is still on-going. Her experiences over the last 3.5 years negatively impacted her ADLs, QoL, and overall mental status, which resulted in the patient feeling discouraged, frustrated, and alone. In patients who present with chronic signs and symptoms, especially when there is not a definitive diagnosis, it is important for athletic trainers to remain diligent in providing patient-centered care. Athletic trainers must continue to advocate and remain knowledgeable about additional healthcare providers or resources that can be a part of the patient's care plan.



Figure 1.