Traumatic Brachial Plexopathy in a Male Collegiate Baseball Player

Hamilton MS, Musial TJ, Dolan MG: Department of Sports Medicine, Health and Human Performance, Canisius College, Buffalo, NY.

**Background:** The athlete was a 19-year-old left-handed division one male collegiate baseball pitcher with an unremarkable history of shoulder pathology. After a forceful delivery in a game, the athlete experienced sudden pain and weakness in his upper extremity. Pain was present over the middle trapezius muscle, scapula, cervical spine and radiated into the forearm. He complained of numbness that extended from the shoulder to the forearm. Cervical spine examination was unremarkable. Muscle testing revealed weakness of the biceps, brachioradialis, and supinator of the forearm. All other range of motion and muscle testing of the upper extremity was within normal limits. Physical examination revealed no scapular wasting or winging. There was no restriction of movements in the cervical spine, shoulders, elbows, or wrists. **Differential Diagnosis:** Brachial plexus injury, herniated disc, cervical spine fracture, cervical spine sprain, scapular dysfunction, tumor, bicep tendon rupture, bicipital tendonitis.

**Treatment:** Cervical spine and shoulder x-rays were negative. EMG testing of the left deltoid and infraspinatus muscles was unremarkable. However, and increase in polyphasic motor units was seen in the left triceps, rhomboids, and pronator teres. EMG of the left biceps and brachioradialis muscles revealed a very prolonged and distant motor recruitment, although no spontaneous activity or fibrillation was shown. All other EMG readings of the upper extremity were within normal limits. It was determined that the athlete suffered from a traumatic brachial plexopathy and the lesion, was localized at the upper trunk level. A plexopathy is a form of peripheral neuropathy. It occurs when there is damage to the brachial plexus, an area where a nerve bundle from the spinal cord splits into the individual nerves. The location of the lesion, caused involvement of the dorsal scapular, suprascapular, and the musculocutaneous nerves. The athlete was referred for physiotherapy for selective strengthening of the muscles involved. Following physiotherapy the athlete continued rehabilitation with the team Athletic Trainer using a regimen of bicep curls, shoulder internal/external rotation and forearm pronation/supination exercises. Sports specific activities, using Thera-Band® for resistance and mimicking a throwing motion as well as pitching from flat ground, were added to the rehabilitation program as the athlete progressed. Following this, the athlete gradually progressed into slow pitching with a ball on the mound until sufficient strength was regained to begin throwing normally. The athlete made a complete recovery and has returned to pitching with no restrictions. **Uniqueness:** The athlete suffered a unique injury in that the plexopathies are uncommon and difficult to locate in terms of exact location of injury along the brachial plexus. **Conclusions:** While sometimes difficult to evaluate clinically without EMG or other diagnostic tools plexopathies can be a very serious and debilitating injury. In this particular case the lesion was located at the upper trunk of the brachial plexus nerve bundle. Although the athlete did have to endure approximately six months of physical therapy, eventually strength returned to normal and he returned to pitching. **Word Count:** 480