Nerve Pain Following Surgical Procedures in College Bowling Athlete

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Abstract

Athlete was diagnosed with ulnar nerve entrapment. Pain and numbness originated in the elbow and radiated into the hand. Ulnar nerve transposition surgery was subsequently required two months post initial reporting of injury. Following the surgery, rehabilitation and treatment was attempted until pain and numbness occurred again. Pain was localized to the wrist and was substantiated when diagnosed with median nerve entrapment. Pain originated in the distal aspects of the fingertips and then traveled to the median epicondyle of the elbow. Surgical median nerve release was required to increase the size of the carpal tunnel and decrease the pressure placed on the median nerve. The transverse carpal ligament was released. Complete release was taken both distally as well as proximally with release of forearm fascia. Scar tissue found around the median nerve was removed during surgery as well. Following the surgery, pain and numbness continued along the ulnar and median nerves, but also followed into the radial nerve along the extensor musculature. Athlete had been withheld from athletic activity for entire year, since symptoms first began.

Clinical Evaluation

- Pain radiated from distal aspects of fingertips to medial epicondyle of elbow
- Pain located on flexor and extensor musculature of arm
- Full range of motion and strength with wrist flexion and extension
- Positive Tinel’s sign
- Positive Phalen’s sign

Differential Diagnosis

- Radial Nerve Entrapment
- Radial Nerve Palsy
- Median Nerve Entrapment
- Ulnar Nerve Entrapment
- Medial Epicondylitis

Differential Diagnosis

Ultrasound led to diagnosis of ulnar nerve entrapment at the elbow, but surgical release of median nerve was also required. Pain was localized to the wrist and was substantiated when diagnosed with median nerve entrapment. Pain originated in the distal aspects of the fingertips and then traveled to the median epicondyle of the elbow. Surgical median nerve release was required to increase the size of the carpal tunnel and decrease the pressure placed on the median nerve. The transverse carpal ligament was released. Complete release was taken both distally as well as proximally with release of forearm fascia. Scar tissue found around the median nerve was removed during surgery as well. Following the surgery, pain and numbness continued along the ulnar and median nerves, but also followed into the radial nerve along the extensor musculature. Athlete had been withheld from athletic activity for entire year, since symptoms first began.

Median Nerve Release Surgery

This case report examined the complexities of the human anatomy and the importance of having early interventions for medical epicondylitis, as well as other hand, wrist, forearm, and elbow injuries.

Implications

Medial epicondylitis is a common injury among bowling athletes due to the mechanism of forcefully grasping the ball and flexing the wrist when releasing the ball. Ulnar neuropathy has been associated with medial epicondylitis in 50% of cases. However, the transmission of pain to the median and radial nerves is not commonly seen, especially with such a severe reduction of activity. The progression of continual pain and numbness despite two separate surgeries, followed by consistent conservative treatment, is a unique situation that suggested the use of the kinetic chain in the hand, wrist, forearm, and elbow.

Conclusion

This case highlighted the diagnosis and treatment of a bowling athlete suffering from ulnar, median, and radial neuropathies despite having an ulnar transposition surgery and median nerve release surgery. This case further highlighted the symptoms from these separate injuries and the different types of treatment utilized. This case report demonstrated the correlation of the different aspects of the hand, wrist, forearm, and elbow and how different biomechanics and motions can affect the nerve pathways. This case report examined the complexities of the human anatomy and the importance of having early interventions for medical epicondylitis, as well as other hand, wrist, forearm, and elbow injuries.