

Athlete Compression of Thenar Motor Branch and Thumb Digital Branch of Median Nerve: A Case Report.

Hussein N^{1*}, Lee SW².

***Corresponding author**

Naglaa Hussein, MD, PhD,
Department of Physical Medicine and Rehabilitation.

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INTRODUCTION

Biking has been linked to upper extremity nerve entrapment, namely ulnar nerve entrapment at the wrist. This is usually known as Guyon canal syndrome.

Cycling palsy, often known as handlebar palsy. Carpal tunnel syndrome and median nerve entrapment at the wrist are both possible.

CASE DESCRIPTION

A 36-year-old right-handed analyst with no medical history reported periodic numbness in his left thumb for one year, with no nocturnal worsening. This was associated with atrophy of his left thumb muscles. He can still grip stuff without difficulty. He has experienced neck ache for the past 6 months without receiving arm irradiation. There is no muscle weakness or alterations in bowel or bladder function. His MRI of the left wrist and hand was normal. He has been using kettlebells to develop his muscles for several years. For 3-4 years, he practiced shooting and mountain biking sans gloves for 2 hours once a week, covering approximately 10 kilometers.

METHODS

The patient was exposed to all of the following: A thorough neurological examination was performed, including bilateral Tinel's sign, Phalen, and Spurling tests, as well as median motor conduction examinations and recording.

Motor conduction investigations were conducted on the abductor pollicis brevis bilaterally, the second lumbrical bilaterally, the ulnar nerve, and the F wave for both.

Sensory nerve conduction investigations were conducted on both upper and lower limbs, including Digits I, II, and III on the left median. The patient had needle electromyography (EMG) of the left flexor carpi radialis and first dorsal interosseous. Left abductor pollicis brevis and left second lumbrical muscles. In addition, ultrasonography and MRI were performed on the left wrist.

RESULTS

Only the tip of the left thumb has diminished sensitivity. Left thenar muscles atrophy and become feeble. Spurling's, Tinel, and Phalen tests were negative bilaterally. Electrodiagnostic tests revealed unobtainable Sensory Nerve Action Potential (SNAP) from left median to thumb alone. Maintain all SNAP nerves in upper and lower limbs, including the left median to digits II and III. A motor conduction study (MCS) of the left median nerve to the abductor pollicis brevis revealed significantly longer distal latency. The MCS from the left median nerve to the second lumbrical was normal, as were the MCS of the ulnar, right median, and left peroneal nerves. All F waves remained within normal ranges.

A needle EMG of the left flexor carpi radialis, first dorsal interosseous, and second lumbrical muscles revealed normal results. The left abductor pollicis brevis appeared distant.

DISCUSSION

Electrodiagnosis identified a lesion in the left thenar motor branch and a digital sensory branch to the thumb. The patient's athletic performance could be the cause of compression. There is no proof of Carpal Tunnel Syndrome. Cycling-related nerve injuries include ulnar nerve entrapment at the wrist, Guyon canal syndrome (also known as cyclist palsy or handlebar palsy), and carpal tunnel syndrome [1-4].

The patient engaged in various physical activities, including gun shooting, cycling, and kettlebell exercises, to develop their muscles. The pathology could be caused by a combination of activities, although riding is unlikely to be the sole cause, as past research suggests cyclists are the most likely to experience it.

CONCLUSION

Compression of the thenar motor and digital branches of the median nerve.

REFERENCES

1. Akuthota V, Plastaras C, Lindberg K, Tobey J, Press J, Garvan C. The effect of long-distance bicycling on ulnar and median nerves: An electrophysiologic evaluation of cyclist palsy. *Am J Sports Med.* 2005; 33: 1224-1230.
2. Brown CK, Brynne Stainsby, Guy Sovak. Guyon Canal Syndrome: Lack of management in a case of unresolved handlebar palsy. *J Can Chiropr Assoc.* 2014; 58: 413-420.
3. Braithwait IJ. Bilateral median nerve palsy in a cyclist. *Br J Sp Med.* 1992.
4. Cherington M. Hazards of bicycling: From handlebars to lightning. *Semin Neurol.* 2000; 20: 247-253.