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Entrapment Neuropathies of the Upper Extremity

Series Editor and Author:

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Associate Professor of Neurology

Director, Neurology Residency Training Program

Pennsylvania State University College of Medicine

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Cover Illustration by May S. Cheney

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I. INTRODUCTION

Disorders of the peripheral nervous system are quite common; of these disorders, focal entrapment neuropathies are frequently encountered by the clinician. In the evaluation of such conditions, patients are often referred for electrodiagnostic testing. This review will discuss focal entrapment neuropathies of the upper extremity and their common electrophysiologic features. Two case patients are presented to illustrate important features of the management of entrapment neuropathies of the upper extremity.

II. MEDIAN NERVE DYSFUNCTION

CASE PATIENT I PRESENTATION

Patient 1 is a 37-year-old right-handed woman who states she has had bilateral hand numbness that has lasted for several years. She has noticed increasing clumsiness with her hands and says that she frequently drops things. Her symptoms are most prominent at night (often awakening her from sleep) or during driving. On examination, a slight wasting of the thenar eminence is observed. Thumb abduction is weak bilateral-

ly, and reflexes are normal. Sensation is diminished over the thumb, index, and middle fingers, sparing the thenar eminence. No Tinel's sign is noted at the wrist on either side. Phalen's maneuver elicits tingling in both hands after 30 seconds. The remainder of the neurologic examination is unremarkable.

- **Based on the clinical history and examination, what is the most likely diagnosis for patient 1?**
 - A) Ulnar neuropathy at the elbow
 - B) Anterior interosseous neuropathy
 - C) Median neuropathy at the wrist
 - D) Upper trunk plexopathy
 - E) C5–6 radiculopathy

Discussion

The correct answer is C. Patient 1 has signs and symptoms suggestive of median nerve dysfunction. Because proximal strength is strong and sensation is spared over the thenar eminence, the level of dysfunction is at the wrist (carpal tunnel syndrome [CTS]).

MEDIAN NEUROPATHY AT THE WRIST

CTS is the most common entrapment neuropathy affecting the upper extremity. Although patients may present with various signs and symptoms (**Table 1**), the usual complaint is pain localized to the wrist, which may