

Title: Prospective evaluation of ulnar neuropathy treated with cubital tunnel decompression in patients with negative electromyogram findings.

Background: Ulnar neuropathy at the elbow (UNE) is the second most common entrapment neuropathy, and patients typically present with tingling and numbness in the ulnar digits of the hand, with or without hand weakness. The utility of electrodiagnostic testing (including electromyography [EMG] and nerve conduction studies [NCS]) has been called into question for the diagnosis of UNE, as 8-13% of patients with clinical symptoms suggestive of the condition have no evidence of ulnar dysfunction on EMG/NCS. Some authors have suggested that surgical interventions for UNE might be considered in the absence of electrodiagnostic findings to support the diagnosis. A recent meta-analysis demonstrated that patients with minimal severity UNE symptoms had significantly lower satisfaction rates with non-operative treatment compared with various surgical interventions. Patients with severe UNE symptoms also had lower post-surgical satisfaction rates than patients with mild symptoms suggesting that early surgical intervention, prior to the development of electrodiagnostic criteria, may be preferred.

Purpose: The purpose of the current study is to describe the clinical outcomes of patients with evidence of UNE on clinical examination, but lacking supportive electrodiagnostic criteria for the condition, that later underwent decompression of the ulnar nerve at the elbow.

Methods: Retrospectively, charts were reviewed at UVA from 2009 to 2013 and we identified everyone who had cubital tunnel decompression with negative EMG findings. These patients were then contacted via telephone and “Disabilities of the Arm, Shoulder, and Hand” short form (“Quick DASH”) questionnaire administered. In the prospective portion of the study, we are administering a Quick DASH questionnaire pre-operatively to those with signs and symptoms of UNE (EMG positive or negative) and then again at various intervals post-operatively to compare pre-op assessments with those post-operatively. We will then compare the EMG negative and positive groups that underwent surgical intervention for ulnar neuropathy. The prospective nature of this study should help us better determine how effective surgical intervention is in those with EMG negative ulnar neuropathy and whether or not earlier intervention produces better outcomes than later intervention in those with EMG positive neuropathy.

Results: In the retrospective portion of the study, 15 of 17 (88%) patients who underwent cubital tunnel release after negative EMG completed the QuickDASH post-operatively. The average QuickDASH score was 18.78 ± 18.41 , with a range of 0 to 65.91. Currently, we have IRB approval and are collecting prospective data. QuickDASH questionnaires are being collected pre-op as well as at routine post-operative visits up to 1 year. We have enrolled approximately 10 patients total with 4 in the EMG negative group.