Comparison of Ultrasound- and Electrodiagnostic-Negative to Double Positive Carpal Tunnel Syndrome: A Patient-Reported Outcome Study

Anthony Lee Logli, John R Fowler

INTRODUCTION: We sought to determine if a difference existed in patient-reported outcomes after carpal tunnel release (CTR) when comparing patients who had a negative preoperative ultrasound (US) and electrodiagnostic study (EDS) (double negative (DN)) to those who were positive on both studies (double positive (DP)).

METHODS: Adult patients who underwent CTR at a single academic medical center between 2014 and 2022 were prospectively entered into a database. Patients were divided into DN (N=3) and DP (n=47) cohorts with the primary outcome being BCTQ subscores (Symptom Severity Scale (SSS) and Functional Status Scale (FSS)) at 6 weeks postoperatively. Cohorts shared similar demographic characteristics with regard to age, gender, BMI, race, diabetes, and CTS-6 scores.

RESULTS: Pre- to postoperative changes in SSS and FSS scores were not clinically (SSSΔ >1.0 and FSSΔ >0.6) nor statistically different within the DN group (preoperative SSS 3.3±0.6, 6-week SSS 2.6±1.4, p=0.54; preoperative FSS 2.4±0.6, 6-week FSS 2.3±0.9, p=0.90) but were both statistically and clinically different in the DP group (preoperative SSS 3.3±0.8, 6-week SSS 1.6±0.6, p=0.00; preoperative FSS 2.8±1.0, 6-week FSS 1.6±0.6, p=0.00). One patient within the DN cohort had a BCTQ subscores that increased postoperatively (SSS 3.36 to 4.55 and FSS 2.38 to 3.50) and in a clinically significant way.

DISCUSSION AND CONCLUSION:

Patients who have preoperative US and EDS evidence of CTS are statistically and clinically better at 6 weeks postoperatively. However, when both studies are negative, alternative diagnoses should be explored as a good outcome after CTR cannot be expected.