

# Peripheral Nerve Surgery in Patients with a label of Complex Regional Pain Syndrome in the Extremities

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**INTRODUCTION:** The management of Complex Regional Pain Syndrome (CRPS) is challenging, and the optimal treatment pathway for these patients remains unclear. We describe the treatment trajectory for patients referred with a label of CRPS.

**METHODS:** We retrospectively analyzed 53 patients referred with a label of CRPS in the extremities at a tertiary care center from 2017 to 2024. Three clinicians conducted a retrospective Budapest criteria assessment to classify patients into three categories: (1) Budapest-confirmed CRPS, (2) inconclusive CRPS, or (3) Budapest-confirmed non-CRPS. Data on injury and treatment characteristics were recorded from chart review. Outcomes were recorded, defined as reported improvement in pain and/or function at the most recent visit.

**RESULTS:** The median treatment duration was 3.9 years (IQR:2.2-6.6). Common treatment modalities included neuromodulators (91%), opioids (77%), and peripheral nerve surgery in 66%. Overall rate of clinical improvement was 55%, with 67% of patients undergoing surgery reporting benefit. No statistically significant differences in treatments were observed across the three CRPS groups. Exploratory bivariate analysis identified factors associated with improvement: absence of emotional events affecting symptoms ( $p=0.022$ ), no opioid use ( $p=0.024$ ), no cannabinoid use ( $p=0.019$ ), surgery after referral ( $p<0.001$ ), and major limb amputation with primary TMR ( $p=0.047$ ).

## DISCUSSION AND CONCLUSION:

More than half of patients referred with a label of CRPS underwent surgical intervention, with 67% of surgical patients reporting improvement. With a median treatment duration of more than 3 years and frequent clinic visits, our findings underscore the need for an interdisciplinary, personalized approach and the importance of considering peripheral nerve surgery for select patients.

