

Tsang, Philemon, et al, 2021 Abstract

Postoperative Management And Rehabilitation After Ulnar Motor Nerve Transfer

Objective

The aim of this repeated case study was to describe the responses, functional outcome, and neuromuscular health of three participants after the supercharged end-to-side (SETS) anterior interosseous nerve (AIN) to ulnar motor nerve transfer to describe the hand therapy and recovery of three cases reflecting different recovery potential mediators, trajectories, and outcomes.

Results

All the three participants completed the surgical and hand therapy interventions, demonstrating a variable course of recovery and functional outcomes. SETS AIN to ulnar motor nerve followed by multimodal hand therapy provides measurable improvements in neurophysiology and function, although engagement in hand therapy and outcomes appear to be mediated by comorbid physical and psychosocial health. All three patients received the same surgical treatment and the SETS AIN to ulnar nerve surgery. The surgical process involved an internal neurolysis to identify the ulnar motor fascicles of the ulnar nerve and confirmed with **intraoperative electrical stimulation**.

Participants and Clinicians

Three participants of similar age (76-80 years) that had severe ulnar neuropathy who underwent surgical treatment including a SETS AIN to ulnar motor nerve surgery were purposively selected from an ongoing clinical trial.

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Methods

Formal rehabilitation comprised of exercises to encourage the activation of the donor nerve. Patients were provided with an exercise program that involved the coactivation of donor and recipient muscles (ie, pronation combined with finger abduction, adduction, and intrinsic plus flexion). **EMG biofeedback** using the **NeuroTrac Myoplus 2 Pro**, (Verity Medical) was utilised when reinnervation was found on **EMG** studies and first noticed. The rationale of early **biofeedback** was to facilitate motor relearning and cortical plasticity. During this phase, the goal of the **EMG biofeedback** was to reach a threshold, determined as a percentage of the maximum voluntary contraction (MVC).

The full abstract can be found at <https://pubmed.ncbi.nlm.nih.gov/32571598/>.