신경근육재활 및 전기진단

게시일시 및 장소 : 10 월 18 일(금) 13:15-18:00 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 15:45-16:30 Room G(3F)

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Muscle Relearning Therapy on a Patient with Brachial Plexus Injury After Nerve Transfer: Case Report

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Introduction

Muscle relearning therapy (MRT) aims to regain function in the muscle innervated by the transferred nerve through establishing new motor patterns and cortical mapping. Hereby we report a case of a brachial plexus injury (BPI) patient with successful functional recovery by muscle relearning therapy following nerve transfer.

Case Presentation

A 23-year-old male suffered a motorcycle accident and was diagnosed as BPI. Three months later, nerve transfer was performed (spinal accessory nerve to suprascapular nerve, flexor carpi radialis fascicle of median nerve musculocutaneous nerve, flexor carpi ulnaris bundle of ulnar nerve to triceps brachii branch). Initial manual muscle test revealed severe weakness in the left arm (MRC grade, 1~2/5) and electrodiagnostic study showed whole arm type BPI. Inpatient rehabilitation was implemented for 3 weeks including MRT along with range of motion exercises and electrical stimulation. In summary, the patient was encouraged to activate donor nerves when contracting target muscles (i.e. abducting his shoulder while tilting the neck to the left, flexing the elbow while volar flexing the wrist, extending the elbow while deviating the wrist medially). He was transferred to a hospital near his home and continued MRT on an outpatient basis. Significant increases in elbow flexor power was observed (MRC 2/5) 3 months after discharge and MRT was modified to contracting target muscles independently. It was further improved to MRC 5/5 at follow up 8 months after discharge, although motor recovery of other target muscles was unremarkable.

Discussion

This case report demonstrates successful recovery of motor power through MRT in a patient who underwent nerve transfer after BPI. MRT is essentially practicing recruitment of the weak reinnervated muscles to establish new motor patterns and cortical mapping.

The use of MRT may help patients regain functional motor power after nerve transfer although the results were inconsistent depending on the site of transfer.