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The role of peipheral nerve transfers in neurorehabilitation

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Abstract

Over the past 2 decades traditional nerve grafting has in many cases been supplanted by a more efficacious nerve transfer, or utilization of a neighboring healthy but unrelated nerve to provide innervation to a paralyzed muscle group. Nerve transfers offer the advantage of reduced denervation time, and modality specific targeted reinnervation and depend upon the abundant neuroplasticity to incorporate a new "wiring" paradigm into activities of daily living. Nerve transfers have been devised to restore shoulder function, arm function, hand function and more recently lower extremity function as well. Our center is one of the first in the world to apply these principles to the restoration of hand function following traumatic spinal cord injury with encouraging preliminary results. We will demonstrate how nerve transfers offer a more robust functional exchange and less involved post-operative management than traditional tendon transfers and are quickly replacing former methods for functional reanimation of the limb.

Biography

Justin M. Brown, M.D. completed his neurosurgery training at Baylor college of Medicine in Houston Texas and went on to complete a fellowship in peripheral nerve reconstruction in the Division of Plastic and Reconstructive Surgery at Washington University in St. Louis. Following training he became the Associate Director of the Center for Nerve injury and Paralysis at Washington University and most recently has been recruited to the University of California at San Diego Division of Neurosurgery to serve as the Director of Peripheral Nerve Surgery and Co-Director of the Center for Neurophysiology and Restoartive Neurology. He has published and travelled extensively giving lectures on the neurobiology and practical application of nerve transfers in the setting of neurotrauma.