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A pilot clinical study of olfactory mucosa auto-graft for chronic complete spinal cord injury

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Recent studies of spinal cord axon regeneration have reported good long-term results using various types of tissue scaffolds. Olfactory tissue would allow autologous transplantation, is easily accessible and can be obtained by a simple biopsy that is performed through the external nares. We performed a clinical pilot study of olfactory mucosa auto-graft for chronic complete spinal cord injury in 4 patients following the procedure outlined by Lima et al. Our results showed no serious adverse events and an improvement in both the American Spinal Injury Association (ASIA) Impairment Scale (AIS) grade and ASIA motor score in 3 patients, as well as the expression of motor evoked potentials (MEPs) in 1 patient. The MEP reflects conductivity in the central nervous system, including the cortico-spinal pathway. MEPs induced with trans-cranial magnetic stimulation (TMS) allow objective assessment of the integrity of the motor circuitry comprising both the cortico-spinal tract and the peripheral motor nerves. We conclude that the feasibility of olfactory mucosa auto-graft for chronic complete spinal cord injury might be expected.

Biography

Koichi Iwatsuki is an Associate Professor, Department of Neurosurgery, Osaka Medical University, Japan from 2007 to present and is a Head Physician for Department of Neurosurgery, Osaka Medical University, Japan from 2003 to present. He served as a Resident at Department of Neurosurgery, Osaka Medical University, Japan. He was an Advising Doctor for Japanese Society of Spinal Surgery in 2004. He served as a Director for Japanese Society for Laser Surgery and Medicine in 2002. In 1995, he was a Certifying Physician for Japan Neurosurgical Society. He has published 68 papers in English and 52 papers in Japanese.

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