

# Experience of Rehabilitation Using the Single-joint Hybrid Assistive Limb (HAL<sup>®</sup>-SJ) for the Remaining Quadriceps Muscle Paralysis After Spinal Injury - A Case Report -

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## **Abstract**

Effectiveness of the HAL<sup>®</sup> robot suit (single-joint) (Cyberdyne, Tsukuba, Japan) for rehabilitation after surgery of spinal injury due to of L<sub>2</sub> burst fracture was reported. A 24-year-old female with of the remaining quadriceps paralysis was treated with the HAL<sup>®</sup>-SJ for 9 weeks (18 training sessions) to recover her remaining quadriceps. After using the HAL<sup>®</sup>-SJ for 9 weeks, the patient's knee extensor scores by manual muscle testing improved from 1/5 to 4/5. The patient showed improvement in quadriceps activity, suggesting the effectiveness of rehabilitation using HAL<sup>®</sup>-SJ.

**Key words: spinal injury, robotsuit HAL<sup>®</sup> single-joint, feed back, rehabilitation**