

CASE STUDY: TSCI C4 ASIA A

PATIENT: 69-year-old male referred for improved strength and function

MEDICAL HISTORY: The patient was involved in a body surfing accident in Nicaragua in 2012 where he struck his head and suffered a TSCI. He sustained a spinal cord contusion from C3 to C6 and severe stenosis from C4-C5 and from C5-C6. He injured his anterior longitudinal ligaments. His case was complicated by bradycardia. He underwent a decompressive laminectomy C3-C6. He spent three months in inpatient rehabilitation. Prior to the accident, he had been an avid bicyclist.

FUNCTIONAL DEFICITS: At the time he was discharged from the inpatient rehabilitation hospital, he was still unable to navigate any activities of daily living, including bathing, dressing or feeding himself. He was dependent for bed mobility and wheel chair mobility and was unable to ambulate. He had a catheter and was dependent for bowel function. He was unable to sit independently unsupported.

INITIAL EVALUATION:

- Patient used a tilt-in-space wheelchair
- The patient presented with the following L/E strength:
 - Hip flexors - 1 - 2/5
 - Hip add - 2/5
 - Knee ext R $\frac{3}{4}$ antigravity, L $\frac{1}{4}$ - $\frac{1}{2}$ antigravity
 - Ankle dorsiflexion - 3+-4-/5
 - Plantarflexion - 2+/5 R, 2+/5 L
- Demonstrated minimal active shoulder movement
- Bed mobility - total A
- Transfers - total A of 2 people

TREATMENT: A multidisciplinary approach to care was developed to help this patient regain maximum function and independence. His outpatient therapy focused on transfer and strength training, sitting balance and standing tolerance as well as core stabilization and tolerance to upright posture. The progress made in each specific therapy laid the foundation for the next step in rehabilitation.

His treatment plan included the following therapies:

- Pilates-based therapy for core stabilization
- Zero-G body weight support
- Therapy using the Ekso eksoskeleton
- Upper extremity therapy utilizing SaboFlex mobile arm support and armed robotic (Armeo)

RESULTS: Currently, the patient requires minimal assistance to perform supine to sit and minimal assist for stand-pivot transfers. He ambulates with bilateral hand-held assist of two people. He continues to need minimal assist for upper body bathing and dressing, feeding and activities of daily living due to residual upper body weakness.

For more information, contact:

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