



A Case Report of Physical Therapy Treatment of a Patient Diagnosed with Motor Only Guillain-Barre Syndrome Concurrent with Cervical Spinal Surgery

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Background & Purpose: Guillain-Barre syndrome, an acute inflammatory demyelinating polyneuropathy (AIDP), is characterized by a progressive loss of neurologic functions, beginning in the periphery and progressing centrally. Cervical spinal myelopathy also presents with a similar decrease in neurological function, but typically lacks the progressive nature of an AIDP. Differential diagnosis for GBS requires a neurological examination, CSF analysis, and/or electrophysiological studies, while MRI studies are indicated for differential diagnosis of a myelopathy.

Establishment of the correct diagnosis is vital in determining the most appropriate course of treatment for the patient.

Case Description: The patient is a 56 year old Caucasian male, previously an Olympic swimmer, who was diagnosed with Guillain-Barre Syndrome after cervical discectomy and fusion surgery. Initial presentation included diffuse weakness progressing distal to proximal in bilateral upper and lower extremities within 48 hours, as well as areflexia without sensory involvement. Later examination revealed extraocular movement palsy, an absent gag reflex, and an asymmetric palatal elevation. After surgery, upper and lower extremity weakness persisted without any improvement of symptoms. Two weeks post surgery EMG and CSF studies revealed the presence of Guillain Barre, with the suspected variant of Acute Inflammatory Demyelinating Polyneuropathy. Patient was treated with Intravenous Immunoglobulin therapy and plasmapheresis, along with physical therapy. The patient had no significant decline in function but showed no significant improvement in paralysis, areflexia or cranial nerve involvement over the course of the six week hospital stay with physical therapy treatment.

Outcomes: Outcome measures used included: strength, pain, static, dynamic sitting and standing balance, and bed mobility Functional Independence Measure (FIM). The patient presented with UE strength 1/5 and LE strength 2/5 at the time of intake while at discharge, UE strength presented as 2/5 and LE strength 4/5. Sitting balance was slightly improved, both in static and dynamic measures. Standing balance did not change from time of intake to discharge. Bed

mobility FIM improved from 2 at intake to 3 at discharge, and patient progressed from maximum to moderate assistance.

Discussion: Initial diagnosis of cervical myelopathy was thought to be the complete etiology of the patient's symptoms, and no further differential tests were performed prior to surgical intervention. When symptoms did not improve post-surgically, even after physical therapy, further investigation was prompted which revealed likely Guillain- Barre syndrome variant. Although the patient's symptoms did not improve, physical therapy appeared to be effective in preventing patient decline. This case report demonstrates the importance of physical therapy in preserving the remaining function and hindering further deterioration of a patient diagnosed with Guillain Barre Syndrome.

References: Must include 5 current references (less than 10 years old): Abai S, Kim SB, Kim J-P, Lim YJ. Guillain- Barré Syndrome Combined with Acute Cervical Myelopathy. *Journal of Korean Neurosurgical Society*. 2010;48(3):298-300. Hiraga A, Mori M, Ogawara K, Kojima S, Kanesaka T, Misawa S, Hattori T, Kuwabara S. Recovery patterns and long term prognosis for axonal Guillain-Barré syndrome. *J Neurol Neurosurg Psychiatry*. 2005;76:719-722. Khan F, Amatya B. Rehab Interventions in Patients with Acute Demyelinating Polyneuropathy: A Systematic Review. *European Journal of Physical Rehabilitative Medicine*. 2012 Sep;48(3):507-2. Mullings K, Alleva J, Hudgins T. Rehabilitation of Guillain Barre Syndrome. *Disease a Month*. 2010;56(5):288-92. Van der Meché FGA, Visser, LH, Jacobs BC, Endtz HP, Meulstee J, Van Doorn PA. Guillain-Barré Syndrome: Multifactoral Mechanisms versus Defined Subgroups. *The Journal of Infectious Diseases*. 1997; 176(2): S99-102.