Acute Physical Therapy Management of a Patient with Neurofibromatosis Type 2

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Purpose: The purpose of this presentation is to describe the role of Acute Care Physical Therapy in the management of Neurofibromatosis Type 2 and the recovery process. A literature review conducted during a patient’s acute hospitalization exposed a lack of research regarding the role that Physical Therapy plays in recovery.

Description: Neurofibromatosis Type 2 (NF2) is a rare, autosomal dominant disease that affects the growth and development of nerve cells. The primary symptom of NF2 is hearing loss due to vestibular schwannomas.

Compression of the vestibular nerve causes tinnitus, imbalance and gait disturbance, while compression of the optic, facial and trigeminal nerves causes visual deficits, headaches, cervical pain and facial weakness. The presence of intracranial and spinal tumors can lead to generalized muscle weakness, paresthesia, pain and foot drop which impact function and quality of life. A female patient admitted through the Emergency Department with falls, unsteady gait and headache had a premorbid history of NF2. She underwent a partial excision of a left vestibular tumor. Acute Physical Therapy post-operative assessment revealed decreased vision and hearing loss bilaterally and moderate dysarthria. Deficits included decreased balance, coordination, strength, postural control and gait ataxia. The patient had limited independence with transfers, ambulation, stair climbing, dressing, eating and other activities of daily living.

Summary of Use: Members of the Acute Care Physical Therapy team performed a literature review to determine recommended Physical Therapy management of NF2. The search revealed limited findings on the use of Physical Therapy in the treatment of NF2. Due to sparse research findings, the therapist used evidence-based clinical expertise to devise a plan of care which addressed the patient’s vestibular, postural, strength and balance deficits. Intervention focused on postural control, core stabilization, motor control, balance, functional mobility, progressive gait training with dynamic head movements and vestibular-ocular reflex exercises. At discharge, the patient demonstrated improved transfers, ambulation and balance and reported less fear of falling.

Importance to Members: Despite extensive literature on the presence of imbalance, gait
difficulties, muscle weakness, fatigue and decreased quality of life caused by NF2, there is sparse research on the use of Acute Physical Therapy to address the physical manifestations of the disease. Physical therapists are uniquely qualified to address the vestibular and neuromuscular dysfunction caused by NF2 to improve quality of life and decrease dependency. Management of this condition requires a multi-disciplinary approach and Physical Therapy should be promoted as a vital component of the recovery process. Further research and case reports are needed to promote the importance of Acute Physical Therapy with this patient population.