

dent after those procedures, she noted that when dancing she would sometimes “forget” to use her left arm. Despite this, she was able to demonstrate left shoulder external rotation and abduction that were within functional limits. Assessment: The patient was referred to the transcranial magnetic stimulation (TMS) laboratory at our hospital. Motor thresholds for the unaffected side (right hand intrinsics, stimulating left hemicortex) were normal, with resting motor threshold of 58% and active motor threshold of 35%. In contrast, motor thresholds for the affected side (left hand intrinsics, stimulating right hemicortex) were substantially higher, with resting motor threshold of 78% and active motor threshold of 60%.

Discussion: Motor threshold represents the lowest TMS intensity applied over motor cortex to evoke a motor end-plate potential in the target muscle, and is thought to reflect membrane excitability of corticospinal neurons. The higher motor thresholds seen in this patient for the affected side are similar to, although less extreme than, those seen in this TMS laboratory after middle cerebral artery stroke. The demonstration that excitability of cortical neurons is altered by impairment of the peripheral nerves of a limb provides neurophysiologic evidence supporting the phenomenon of “learned non-use” occurring in a lower motor neuron condition. Years of relative or learned disuse of an upper extremity due to BBPP may result in cortical changes in ways similar to those in stroke patients, leading to disability that is out of proportion to residual peripheral injury.

Conclusions: In contrast to individuals with upper motor neuron lesions such as stroke, this case suggests that peripheral nerve injury alone is sufficient to cause learned non-use and drive cortical change, and demonstrates that TMS can be a useful tool in the investigation of functional deficits related to BBPP.

Poster 322 Idiopathic Osteoporosis in the Young?: A Case Report.

Marsa M. White, MD (University of Michigan, Ann Arbor, MI); Rita N. Ayyangar, MD.

Disclosures: M. M. White, None.

Patients or Programs: Nine-year-old girl with chronic back pain and history of compression fractures of multiple vertebrae after an innocuous fall.

Program Description: An overweight (BMI > 95th percentile) but otherwise healthy girl presents to rehabilitation clinic with complaints of chronic mid back pain that started after a back injury while playing. At age 3, patient was bumping down stairs on a pillow and fell. She sustained compression fractures of her T5-7 vertebrae at that time. Since then, she has had multiple visits to the emergency center with back pain after incidents of rough housing with her brother or on the playground. She has recent x-ray films showing T5-10 compression fractures. She has never had complaints of weakness or altered sensation in any extremity,

nor any changes in bowel or bladder. She describes her back “giving out” periodically, resulting in falls and the need to be carried.

Setting: Outpatient rehabilitation clinic.

Results: Bone scans performed showed no scintigraphic evidence for occult/stress fracture at time of fall. Calcium and thyroid levels WNL. Slightly elevated ionized calcium at 1.35 mmol/L (normal 1.12-1.30 mmol/L). No vitamin D or PTH levels obtained around the time of the incident. Current vitamin D levels decreased at 24 ng/mL and 26 ng/mL 4 months later. Calcium and PTH remain normal. Recent bone density scan showed z-score less than -2.0 SD in lumbar spine. No vitamin D supplementation given at this time. Vitamin D supplementation and strengthening program have been initiated.

Discussion: Obesity, as well as learned behavior, may play a large part in the patient’s complaints of pain. Vitamin D levels at the time of the incident may have given insight into the etiology of her current condition.

Conclusions: The role of vitamin D insufficiency in idiopathic osteoporosis will need to be further explored.

Poster 323 Merit of Rehabilitating a Child With Friedreich Ataxia, Years After Intramedullary Rod Placement: A Case Report.

Chioma Ezeadichie, DO, MPH (Nassau University Medical Center, East Meadow, NY); Rawa Araim, DO; Adam C. Isaacson, MD; Lyn Weiss, MD.

Disclosures: C. Ezeadichie, None.

Objective: To report a case of Friedreich ataxia without intervention who benefited from rehabilitation years later.

Patients or Programs: 14-year-old girl.

Program Description: The patient was diagnosed with Friedreich’s ataxia (FA) at age 7, and since then continued to have progressive gait, balance, and coordination impairment. She had an intramedullary (IM) rod placed for severe progressive scoliosis at age 11. The patient did not undergo any rehabilitation after diagnosis or surgery; her impairment worsened, and she became wheelchair bound.

Setting: Pediatric unit at a university hospital.

Results: Three years after surgery, she was admitted to the hospital with chest pain, shortness of breath, and fever. Cardiopulmonary workup was conducted to rule out cardiomyopathy, commonly seen in FA patients, which was negative. When consulted for evaluation, the patient was found to have pes cavus, generalized weakness, 4-limb ataxia, dysarthria, and severe gait and balance dysfunction. She was started on bedside physical, occupational, and speech therapy, which she tolerated well. She made some functional gains and was subsequently transferred to an inpatient rehabilitation unit for aggressive therapy.

Discussion: FA is a degenerative neurologic disease caused by a defect in the frataxin gene, with autosomal recessive