Participants: Patient with brachial plexopathy of non-dominant upper extremity, patient's wife, a team of 5 seniors majoring in Mechanical Engineering with 1 member double majoring in fine arts, a nurse specialist in rehabilitation, an occupational therapist with expertise in assistive technology, and a physiatrist.
Interventions: Face-to-face encounters supplemented by video conferences. SolidWorks computer program was used to create images of the various iterations. 3D printing was used to fabricate the parts to be assembled.
Main Outcome Measures: Patient perception of ease of use.
Results or Clinical Course: A novel combination of magnets and interlocking parts were created to make a simple and reliable means for bringing the two ends of the jacket or coat together to bring the zipper ends together. The two-piece system is small enough to carry in a pocket of a jacket or coat. Total expenditures to make the device were less than $1000 dollars and the project was completed within 16 weeks.
Conclusion: A one handed system for zipping up a jacket or coat was successfully accomplished by a team of mechanical engineering students. Employing computer aided designs and 3D printing to make prototypes that could be tested and refined, they made a simple and reliable device for a one-armed man to use. Investigations are underway to explore the usefulness of the device for other patients such as stroke survivors and amputees.

Poster 258
Preserved Bulbocavernosus Reflex in a Patient with Tethered Cord Syndrome: A Case Report

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Disclosures: O. McKay: I Have No Relevant Financial Relationships To Disclose.
Case Description: A 40-year-old man who initially presented with rapidly progressive urinary incontinence in 2011. He self managed his incontinence with a bladder program that consisted of fluid restriction and Valsalva maneuver with urination to ensure emptying. Eventually, his symptoms worsened and he was referred to a urologist that began medications as well as ordered lumbar spine MRI. MRI showed spina bifida occulta with cord tethering to a terminal filament lipoma. He sought neurosurgical consultation and had a cord de-tethering and lipoma debulking with subsequent worsening of his symptoms, which now included fecal incontinence. Through his symptoms he maintained normal sexual function with normal erection and ejaculation. After several episodes of fecal incontinence that provided much fear and embarrassment for him, he was referred for physiatric evaluation. There was an extensive baseline evaluation, which included electrodiagnostic testing as well as the initiation of a bowel and bladder program.
Setting: Outpatient practice
Results or Clinical Course: Electrodiagnostic testing revealed:1. Bilateral asymmetric lumbosacral polyradiculitis, left greater than right, involving the L1 through S2 spinal nerve root levels. 2. Bilateral isolated pudendal motor neuropathies with both demyelinating and axonal features. This was in association with chronic patterns of reinnervation in the bilateral internal and external rectal sphincters, which are innervated by the pudendal nerve. 3. Normal bilateral bulbocavernosus reflex, with relatively short onset latency for his height. 4. Normal somatosensory evoked potentials of the pudendal nerve suggesting no evidence of underlying central conduction disruption.
Discussion: Through electrodiagnosis he was found to have inflammation and abnormal conduction to roots L1 through S2, which makes his normal sexual functioning and normal bulbocavernosus reflex more surprising as sacral nerve roots control it.
Conclusion: This case may represent an accessory or anomalous more rostral innervation of the bulbocavernosus pathway when taken together with his sacral nerve and pudendal nerve findings.

Poster 259
Development of Necrotizing Vasculitic Neuropathy Following Exposure to Minocycline: A Case Report

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Disclosures: J. M. Baratta: I Have No Relevant Financial Relationships To Disclose.
Case Description: The patient is a 33-year-old man with history of acne vulgaris but otherwise healthy. He had been initiated on minocycline 2 years previously with good improvement to acne vulgaris. Approximately 18 months into the minocycline therapy, he developed recurrent episodes of generalized myalgias, arthralgias, and fatigue. The most severe episode occurred in conjunction with a fever (to 103°F), chills, cold sweats, low back pain radiating to the right testicle, and acute left leg pain and paresthesias from the knees to the toes. Subsequent evaluation in our clinic showed left foot plantar flexion weakness and reduced sensation on the plantar aspect of the foot. On workup, an ANA was mildly positive (1:160) and a thyroid peroxidase antibody level was elevated (19.34). Autoimmune and infectious workups were otherwise negative. Electrophysiology studies demonstrated an isolated left, subacute-to-acute tibial mononeuropathy. A left gastrocnemius muscle biopsy was performed and showed necrotizing vasculitis.
Setting: Tertiary care hospital
Results or Clinical Course: Following diagnosis, the minocycline was discontinued. The patient was initiated on oral prednisone taper and cyclophosphamide. At 3-month follow-up after diagnosis, he demonstrated clinical improvement of strength and pain. His constitutional symptoms had fully resolved.
Discussion: Minocycline exposure has previously been associated with development of autoimmune syndromes, such as serum sickness, drug-induced lupus, autoimmune hepatitis, and systemic vasculitis. Two additional reports suggest minocycline-associated vasculitic neuropathy in the setting of a systemic, drug-induced lupus-like syndrome. This case series adds to the growing body of literature regarding minocycline-induced autoimmunity.
Conclusion: Physicians treating those with neuromuscular conditions should be aware of the association between minocycline exposure and the potential development of vasculitic neuropathies.

Poster 260
Atypical Course of an Anomalous Accessory Deep Peroneal Nerve: A Case Report

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Disclosures: A. Patel: I Have No Relevant Financial Relationships To Disclose.
Case Description: A 61-year-old woman presented for evaluation of dorsal foot pain.
Setting: AANEM Accredited Electrodiagnostic Outpatient Laboratory.
Results or Clinical Course: Nerve conduction studies (NCS) demonstrated a peroneal motor nerve amplitude that was significantly greater on proximal stimulation at the fibular head compared to distal stimulation at the ankle while recording from the extensor digitorum brevis (EDB). Suspicion was therefore raised of a possible accessory deep peroneal nerve (ADPN) innervation. In order to assess a possible ADPN, the typical location, posterior to the lateral malleolus, was stimulated. No response was obtained. Stimulation was then

performed approximately 5 inches proximal to the lateral malleolus and expected results for an ADPN were obtained.

Discussion: The most common anomalous innervation in the lower extremity is the ADPN. When an ADPN is present, the medial portion of the EDB frequently is innervated by the deep peroneal nerve and the lateral portion of the EDB is innervated by the ADPN. In our patient, a response was not obtained when stimulation was performed posterior to the lateral malleolus; however, a response was obtained approximately 5 inches proximal to the lateral malleolus along the lateral aspect of the leg. Therefore, our study provided direct evidence suggesting a deviation of the typical course of an ADPN.

Conclusion: Electromyographers must be aware of a potential course deviation from the typical pathway of an ADPN in those patients who are identified as having a possible ADPN.

Poster 261
Bilateral Psoas Hematomas Manifesting as Bilateral Femoral and Obturator Neuropathies after a Taser Event: A Case Report

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Disclosures: T. Ha: I Have No Relevant Financial Relationships To Disclose.

Case Description: A 34 year-old man presented with a two-month history of bilateral proximal lower extremity weakness, pain and sensory impairment. The onset of symptoms occurred after an altercation with law enforcement that involved the use of a taser. The patient was admitted to the hospital after the taser event and found to have rhabdomyolysis and lower extremity weakness. Pelvic CT and MRI imaging obtained at the outside hospital revealed bilateral psoas intramuscular hematomas with inferior extension into the anterior thighs. On presentation to our hospital, physical examination was significant for bilateral quadriceps atrophy, absent patellar reflexes, and impaired sensation to light touch in the femoral and obturator nerve distribution. Manual muscle testing revealed: Bilateral hip flexion 2/5, knee extension 2/5, hip adduction/abduction 4/5, and ankle dorsiflexion 5/5. Functionally, the patient required minimum assistance for ADLs and modified independent for mobility using a rolling walker. He was ultimately discharged to an acute inpatient rehabilitation facility for intensive rehabilitation with plan for a nerve conduction study and electromyography to be performed.

Setting: Level I trauma center

Results or Clinical Course: At the rehabilitation facility, the electrodiagnostic study demonstrated evidence of severe bilateral femoral and obturator nerve involvement including electromyographic evidence of denervation potentials in related muscles. These findings helped to confirm the diagnosis of femoral and obturator neuropathy. At the time of discharge, the patient was functioning at a modified independent level with ADLs and mobility.

Discussion: To our knowledge, this is the first reported case of psoas hematomas manifesting as bilateral femoral and obturator neuropathy after a taser event.

Conclusion: This case illustrates the possibility of rare and serious musculoskeletal complications of electronic control devices such as Tasers. Such devices cause violent muscle contractions, which may lead to devastating injuries including intramuscular hematomas and associated compressive neuropathies.

Poster 262
How a Flexible Differential Yielded an Elusive Diagnosis: A Case Report

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Disclosures: K. Ross: I Have No Relevant Financial Relationships To Disclose.

Case Description: We present a classic case of a rare disorder, that upon initial presentation was suggestive of other, more common pathologies, but upon further investigation was characteristic for stiff person syndrome (SPS). A 48 year-old Haitian woman presented with 3 years of worsening lower extremity pain, episodic spasms, and increasing frequency of falls and a 2 week history of epigastric and right flank pain. Her symptoms initially began with episodes of sharp lumbar pain radiating down her legs and progressed to weakness, spasticity, and immobility. On physical examination she had increased tone and reflexes of the bilateral lower extremities. She was in debilitating pain and was admitted to the hospital.

Setting: Acute inpatient rehabilitation unit of a major county medical center.

Results or Clinical Course: MRI of the spine and brain were grossly benign. She was found to have abnormal uterine bleeding. Abdominal radiograph revealed extensive uterine fibroids. Lack of significant radiographic or laboratory findings suggested an autoimmune, paraneoplasic, myelopathic, or psychiatric etiology. She was given trials of gabapentin, intravenous morphine, and baclofen without any significant reduction in symptoms. The lack of response prompted a suspicion of SPS. A trial of diazepam led to improvement of symptoms and mobility. She was found to have anti-GAD-65 antibodies, which is specific for SPS, helping to solidify the diagnosis. She progressed from needing moderate assistance with transfers and walking less than 50 feet with a rolling walker with contact assistance to being able to transfer with modified independence and walking 100 feet with a rolling walker with minimal assistance.

Discussion: Stiff person syndrome is a rare neuromuscular disease characterized by baseline muscular rigidity with superimposed episodes of spasms. The estimated prevalence is 1:1,000,000. The average age of symptom onset and diagnosis are 35 and 41.2 years, respectively. Significant impairment due to disease progression may be prevented by early diagnosis.

Conclusion: It is important to be aware of and to consider rare conditions in the differential diagnosis of neuromuscular disease. Recognizing the signs and symptoms of SPS will help yield more timely diagnosis and treatment, and thus better prognosis and quality of life for patients.

Poster 263
Autonomic Dysfunction Associated with Vincristine-Induced Neuropathy: A Case Report

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Disclosures: A. Valimahomed: I Have No Relevant Financial Relationships To Disclose.

Case Description: A 60-year-old woman with acute lymphoblastic leukemia in remission treated with hyperfractionated cyclophosphamide, vincristine, adriamycin, dexamethasone (HyperCVAD), developed ascending paresthesias two weeks post treatment. Associated symptoms included ataxia, lower extremity weakness, and incontinence of bowel and bladder. This independent patient became wheelchair dependent. Imaging of the brain and spine, lumbar puncture, infectious workup, and rheumatologic workup were negative. Electromyography and nerve conduction studies performed 6 weeks after onset of symptoms revealed axonal sensory-motor peripheral neuropathy and myopathy without inflammatory features leading to a diagnosis of vincristine-induced neurotoxicity.

Setting: Acute in-patient rehabilitation unit of a large tertiary hospital

Results or Clinical Course: She was admitted to in-patient rehabilitation. Initially the patient's ability to participate and progress in