08/31/21 Neuro Morning Report with @CPSolvers

***Case Presenter**: Douglas Pet (@doug_pet) **Case Discussants**: Promise Lee (@promiseflee) and William Remley (@Bill_Remley)*

CC: gait disturbance.
HPI: 62 yo male (veteran) that prior worked in the marines, 5-6 years ago started developing limp and neuropathy pains, over a year had to quit his job due to these symptoms. Presents with worsening of falls and chronic lower limb pain. Pain is described as shooting, cramping and spasms, in lower limb into groin bilaterally.
5 years ago started to have urinary urgency and incontinence, with one single episode of fecal incontinence
2 years ago started to have falls.
Erectile dysfunction.
Denies any problem in arms or upper body.

PMH:
Bilateral frostbite injury (as a child)
Peripheral neuropathy
Depression & Anxiety
Hepatitis C with cryoglobulins (never treated)
HTN
BPH

Meds:
Thiamine
Tamsulosin
Gabapentin
Folate
B12
Omeprazole

Fam Hx: not relevant

Soc Hx: previously worked in Asia

Health-Related Behaviors: Substance use disorders - alcohol, methamphetamine, cocaine - 7 years ago

Allergies: not relevant

Neuro Exam:
- **Mental Status and cranial nerves:** N
- **Gait:** knees buckling and then became locked, knees touched each other. Slow steps. Romberg positive (sway after 10s)
  - **Motor:** normal bulk, spasticity in both legs, L>R, no fasciculations, no weakness in arms, legs: iliopsoas 4/5 bilaterally, quadrs 5/5, left hamstring, gastro normal, tibialis anterior normal, EHL (big toe) 4/5 bilaterally. Eversion/inversion 5/5
  - **Reflexes:** 3/3 in biceps, and brachioradialis, normal in triceps, absent ankle jerk reflex, left upgoing toe
  - **Sensory:** dullness to pinprick and soles of both feet and patchy loss of sensory all the way in the legs. Absent vibration toe and medial malleoli, proprioception impaired at the toes
  - **Cerebellar:** normal

Notable Labs & Imaging:
Chemistry:
Negative HIV, RPR
Normal Copper, Zinc, B12, folate
Lumbar Puncture: normal opening pressure, pleocytosis (16 WBCs, normal glucose and protein, elevated IGG and oligoclonal bands)
HTLV antibody: positive

Imaging:
C spine and T spine MRI (4 years ago): unremarkable.
MRI of total spine and brain without contrast: unremarkable
EMG: mild length dependent sensory neuropathy.

Final Diagnosis: HTLV myelopathy

Problem Representation:
62 years-old male with a previous history of multiple substance use and peripheral neuropathy and hepatitis C with cryoglobulins presents with chronic worsening of neuropathic pain, difficulties walking and falls, with normal MRI and a positive HTLV antibody.

Teaching Points (Vale): #EndNeurophobia
- **Gait disturbance:** Weakness, proprioception, Coordination, vertigo, lightheadedness, ataxia?
- Balance, Gait and posture depend on 3 types of sensory outputs: proprioceptive, vestibular and visual inputs. The integrator of these inputs is the cerebellum.
- Sharp shooting pain: radiculopathy, PN, tabes dorsalis.
- **Peripheral Neuropathy:**
  - **Mononeuropathy multiplex:** inflammatory, infections-HCV, leprosy, HIV, Lyme; malignancy; DM.
  - **Polyneuropathy:** chronic-B12, B1 def, DM, EtOH, uremia, heavy metals; paraneoplastic, inflammatory, infections-HIV.
- **Hickam's Dictum vs Ockham's razor: Myeloneuropathy:** B12 deficiency, copper deficiency, adrenomyeloneuropathy, HIV.
- **UMN Gait:** UE Extensors are weaker than flexors. LE flexors are weaker than extensors. Arm, wrist and fingers are flexed and pronated to the body, the knee is extended w/ the foot plantar flexed and circumducted when walking.
- **Chronic Myelopathy: Spondylotic (most common!)** Infections (TB, HTLV-1, B12 def, benign neoplasms, vascular (dural AV fistula, hereditary (spastic paraplegia, adrenomyeloneuropathy).
- **Lymphocytic pleocytosis:** Autoimmune vs Malignancy vs Infection.
- Oligoclonal bands ≠ Multiple Sclerosis. = IgG presence.