04/13/21 Neuro Morning Report with @CPSolvers

Case Presenter: *(Douglas Pet @Doug_Pet)* ***Case Discussants***: *Mathieu Brunet and Rafael Alvim*

CC: Progressive gait difficulty and falls.

HPI: 60 yoM presents with 1 week of nonspecific difficulty walking, R>L foot getting caught on steps/carpet. Past few days- LE burning, mild back pain with occasional radiation down the legs.
Pain is cramping, variable, bilateral. Worse with walking, can keep him up at night. Had his 3rd fall after "foot caught on carpet", x1 urinary dribbling. Sx did not resolve with NSAIDs.
Denies fecal incontinence, systemic Sx, trauma, diplopia, facial weakness, difficulty with vision, HA, no subjective arm Sx

PMH:
R Bell's palsy 15 years ago
HTN
Umbilical hernia- no surgery

Meds:
Lisinopril
multivitamin

Fam Hx:
Son with Crohns
Relative with major stroke in the past
Relative passed from a blood clot

Soc Hx:
Lives at home with family. Northern CA
Worked in hospital admin, no travel
Enjoys camping

Vitals: **normal**

Neuro Exam:

- **Mental Status:** wnl
- **Cranial Nerves:** trace R upper/lower facial weakness
- **Motor:** nl bulk/tone throughout, full strength in UE (distal hand muscle). LE- relatively symm weakness initially 4+ ileus psoas, 5/5 quads, b/l hamstrings, 4/4+; tibialis ant/ foot dorsiflexion 4/4-; EHL ⅔, r>l; inversion/eversion diffusely weak. Hip Ab/Adduction- full
- **Reflexes:** hyperreflexic in LE, nl in fingers, neg hoffman, 3+ in knees, 2 beats of clonus in R ankle, hyperactive ankle jerks
- **Sensory:** patchy loss to pinprick on ant/lateral side, no sensory level elicited. Vibration diminished in the toes
- **Cerebellar:** mild steppage gait L>R, mildly wide based, some trouble with heel walking

Imaging:
MRI spine: central cord edema with mild enhancement, T8 level down to conus, thickening and enhancement of cauda equina nerve roots. NO flow voids. Imaging *not* characteristic for sarcoid (no trident sign, no sub-pial enhancement). Incidental finding: B/L hilar and L paratracheal LAD.
LP: Prot 70, WBC 7-- repeated Prot 60, WBC 4→ *Pt with improving Sx*
Endoscopic guided Bx of hilar LN- noncaseating granulomas. Over 4d course, Sx improved; Flow cyto- neg →
*-----**HOSPITAL COURSE:** Tx with IV methylprednisolone. Worsening new Sx- completely paraplegic, below T10. Minimal movement of L side. Unable to void urine-----*
Repeat MRI with "thin cuts"- Flow voids, engorged venous structures behind lumbar cord.
Spinal angiogram- R T10 Epidural AV fistula, supplied by 3 diff branches on ipsilateral/contralateral side.
Final Dx: Spinal epidural AV fistula at T10 and incidental pulmonary sarcoid

Problem Representation: 60M w/ PMH of R Bell's palsy and HTN p/w progressive gait difficulty and falls w/ hyperactive ankle jerk reflex and facial weakness on PE found to have central cord edema + thickening and enhancement of cauda equina nerve roots on MRI. The symptoms fluctuate and got worse after LP and steroid use.

Teaching Points (@gabifpucci): #EndNeurophobia
(Extra: We learned the correct pronunciation of Guillain-Barré!)

- **APPROACH TO GAIT DIFFICULTY (Neurological causes)**: cerebellum, sensory problem (proprioception), weakness (UMN x LMN signs), higher order problem (e.g. Parkinson's disease, NPH)
  X Non-neurological causes: orthopedic problem, astenia, systemic issue (e.g. sepsis, anemia, hypotension)
- **Lower limb involvement without upper limb involvement:** think in spinal cord for localization (LMN and UMN signs to further localize the lesion). Rarely - parasagittal lesion/bilateral ACA stroke
  - **Foot drop (dorsiflexion weakness):** L5 root/Peroneal nerve/Sciatic nerve
- **Upper Motor Neuron signs**: signs go **up**: increased reflexes, increased tone, big toe goes up (Babinski sign) -> they can take time to install
  - Pattern of spasticity (UMN lesion): flexors in upper limb and extensors in lower limb
- **Lower Motor Neuron signs**: signs do **down**: diminished tone, diminished reflexes, big toe goes down. Plus: fasciculations.
- **Etiologies for spinal cord lesion:** vascular, neoplastic, compression (disk, vertebral collapse), infection, inflammation
- The term "Transverse myelitis" is used for a inflammatory process (MS, neuromyelitis optica, post infectious)
- Possible causes for lymphadenopathy, myelopathy and radiculopathy: sarcoidosis, tuberculosis and lymphoma
- **Dural AV fistula (MRI with flow-voids) can fluctuate and worsen after LP or steroids**