11/10/20 Morning Report with @CPSolvers

***Case Presenter**: Mohammed Elashwal(@melashwal97) **Case Discussants**: Sukirti Banthiya (@SukritiBanthiya) and Dhruv Srinivasachar (@TheRealDSrini)*

CC: female with weakness

HPI: 45F presented to the clinic. First complained 1y ago of severe back pain after lifting a heavy object. Pain subsided for a few weeks, but then pt started having weakness in R hand and L leg. After a few months, weakness in L hand and R leg. At clinic, pt could not walk and could not move hands- severe generalized weakness.

PMH: none

Meds: none

Fam Hx: none

Soc Hx: housewife, no recent exposures

Health-Related Behaviors: No EtOH, no tobacco

Allergies: none

Vitals: **T**: **HR**: **BP**: **RR**: **SpO_2**: all nl

Exam:

Gen: pt w/ really soft voice, whisper (2 wk ago)

HEENT: nl | **CV**: nl | **Pulm**: nl

Abd: nl

Neuro: brought in on wheelchair, could not stand up. Atrophy of almost all muscle groups below the neck, w/ diffuse weakness. Atrophic trapezius. Could not move hands against gravity b/l; 2/5 weakness. Unable to move legs. Diminished reflexes. Sensory- nl. Remaining CN nl. Babinski neg. Hoffman neg. No fasciculations.

Extremities/Skin: No rash

Notable Labs & Imaging:

Imaging:

MRI/EMG: pending

Final Dx: ALS

Problem Representation: 45 F with chronic progressive weakness with exam notable for contralateral weakness in limbs, bulbar Sx and diminished reflexes with clinical Dx as ALS; MRI/EMG pending.

Teaching Points (Maria): #EndNeurophobia

- **E=MC2**
  - Localization (weakness): Neurology vs Non Neurology
    - Motor pathway:
      - Upper motor neuron: CNS: cortex→ IC → corticospinal tract + brainstem → spinal cord. Exam: Babinsky, Hoffman
      - Lower motor neuron: PNS: peripheral nerves + muscle). Exam: Fasciculations, diminished DTR, atrophy.
    - Symmetric, bilateral: spinal cord and below. Asymmetric w/ cortex functions or cranial nerves: brainstem and above.
    - Urinary and fecal incontinence: spinal cord
    - Muscle: atrophy, weakness and preserving DTR.
  - Time Course:
    - Recurrence and relapse + focal deficits in young: MS. Illness script: MC relapse and remitting: resolution of symptoms w/ residual deficits. Other forms can be progressive (primary and secondary).
    - Triggers: don't get hooked on them. Correlation ≠ Causation
  - Sequential Progressive Limb to Limb Lesions: ALS (UMN and LMN) (Bulbar atrophy: brainstem - lower cranial nerves - swallowing, speech, tongue); Mononeuropathy multiplex (motor and sensory nerve lesions spaced out in time); Multifocal Motor Neuropathy (Pure Motor - CIDP)
- **Other weakness pearls:** Fatigability→ Myasthenia Gravis. Proximal→ Myositis (but some syndromes are distal).
- **Soft voice:** Worrisome for respiratory distress. Bulbar CN: 9,10.
- **EMG**:Evaluates peripheral nerves. Axonal damage → ALS, DM, B12.. Demyelinating → GBS, CIDP. Classic: UMN + LMN signs, bulbar affection and fasciculations.
- **ALS:** 90% sporadic, 10% - SAD1 mutation.
- **Everybody can have a stroke**: Different risk factors in different population groups. Male: CV, Premenopausal women: OCP, Postmenopausal: CV.