05/04/21 Neuro Morning Report with @CPSolvers

***Case Presenter**: Catherine Boldig **Case Discussants**: Ori Lieberman (@Orilieberman) and Rebecca Berger(@RebeccaEBerger)*

CC: Double vision and dizziness

HPI: 76 yo M presents with 4 weeks ago of double vision and dizziness fluctuating in intensity. He describes the dizziness as "feeling off-balance". It became pronounced when he was driving (felt like the cars were stacked on top of each other). He also reports left eyelid drooping over the same timeframe.

No focal weakness, SOB, dysphagia, headache, chest pain, palpitation, slurred speech.

PMH: mild cognitive impairment, benign essential tremor, B12 def, obstructive sleep apnea, BPH, chronic back pain, restless leg syndrome

Meds:
Vit B12, Zyrtec, omeprazole, pramipexole

Fam Hx: none

Soc Hx: none

Health-Related Behaviors: none

Allergies:none

Vitals: **T**: 37 **HR** 91 **BP**:159/86 **RR**: 18 **SpO_2**: 99%
Exam:
Systemic: alert, no acute distress
Neuro
- **Mental Status: oriented**
- **Cranial Nerves:** pupils equal, reactive to light, vision 20/20 bilateral and normal visual fields, unilateral ptosis of left eyelid. He notes his vision is worse (diplopia) with both eyes open and corrects with one eye closed. Extraocular movements: normal.
- **Motor:** normal
- **Reflexes:** normal
- **Sensory:** normal
- **Cerebellar:** bilateral upper extremity resting and intention tremor
- **Skin:** warm, dry, no rashes, **Cardio, respiratory, abdominal**: nl

Notable Labs & Imaging:
Normal values of: glucose, TSH, Vitamin B12m Lipids, BMP

Imaging:
CTA neck, head: normal
Brain MRI: normal

Ice pack test: 5mm of improvement in the left ptosis
AchR antibody: binding Ab 24.7, blocking Ab 72, modulating Ab 77

EMG: pending

Final diagnosis: Ocular Myasthenia Gravis Syndrome

Problem Representation: 76yM w/ PMHx of essential tremor, B12 def and RLS p/w a 4w history of fluctuating dizziness and double vision. PE remarkable for L ptosis and binocular diplopia.

Teaching Points (Kirtan): #EndNeurophobia
- **Dizziness**: First clarify what it means- Vertigo (spinning sensation) vs Light-headedness (orthostatic) vs Imbalance (unsteadiness). History not reliable to differentiate. Time course and triggers (positional changes, sudden movements etc..) are the key. Acute must not miss conditions include **posterior circulation stroke** and **vestibular neuritis**. Never miss meds as the possibility.

- **Diplopia**: Think anatomically- Involvement of Brainstem or MLF or Cranial nerves or compression/inflammation en route, NMJ, or orbital pathologies. True vs False (Monocular or Binocular). Grave causes include raised ICP and mass lesions.

- **Dwelling deep**- Possible diurnal variations (fluctuations) in diplopia points to Myasthenia gravis or critical vascular pathology. Adding unilateral ptosis to the mix raises the possibility of isolated CN-III palsy. Explore other possibilities- Miosis+Ptosis+Anhidrosis (Horner's). Localize the cause of ptosis to nuclear vs supranuclear vs peripheral neural or muscular cause.

- **Joining the dots**- Binocular diplopia + Fluctuation + normal extraocular movements raises suspicion for **MGS** (Cold pack test and others). Need to be vigilant for sudden respiratory deterioration and tumors as the underlying case.

- **Completing the puzzle-** Diplopia as the pivot point. Add time course. Rule out the grave possibilities from imaging and physical examination. Ice pack test as the clincher. Check for antibodies- **AchR, MuSK, Algin, Lrp4**. Look for thymoma (remove if present). Tx with Acetylcholinesterase inhibitor and immunosuppressives.