



03/23/21 Neuro Morning Report with @CPSolvers

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CC: 57 y/o with ataxia and AMS

HPI: The patient's wife brought him to the emergency department due to worsening confusion. He is presently unable to respond to questions appropriately. She first noticed him exhibiting mild memory problems 3 months ago. These difficulties have progressed since that time. Since then, his ability to carry out his IADLs and ADLs independently has declined. He was treated for a UTI but it had no effect on his decline. He had a CT scan of the brain revealed possible hypodensities in the periventricular regions.

Over the past two weeks his speech has slowed and grown more confused over the past 24 hours and now he can only speak in 1-2 word bursts.

PMH: Crohn's dx at 22 which has been well controlled until 3 years ago and now requiring the below meds

Meds: infliximab, azathioprine, and prednisone, ASA

Fam Hx: None

Soc Hx: unremarkable

Health-Related Behaviors: none

Allergies: none

Vitals: T: 36.9 HR: 78 BP:145/80 RR: 12 SpO₂: 99 ra

Exam:

Systemic Appears chronically unwell and confused

Neuro

- **Mental Status:** Slow to respond to questions; manages to speak only 1-2 words at a time
- **Cranial Nerves:** normal
- **Motor:** 4/5 in left arm and leg
- **Reflexes:** plantar upgoing bilaterally. Tendon reflexes: difficult to obtain globally.
- **Sensory:** Normal sensory
- **Cerebellar:** dysmetria and dysdiadochokinesia in the left side
- **Gait:** Slow, wide-based, unsteady gait.
- **MMSE:** 17/30

Notable Labs & Imaging:

Hematology: Hgb 11.9 g/dL (normal 13-17), WBC 4.3 * 10⁹/L (4-11), Platelets 263 * 10⁹/L (150-400), MCV 83 fl (80-100)

Chemistry: Electrolytes, Ca/Mg/Phos, renal function, liver panel, INR/PTT all within normal limits. Glucose 94 mg/dL (70-110) Albumin 2.9 g/dL (3.5-5.5) B12, folate, TSH/T3/T4, ferritin all within normal limits ESR 36 mm/h (0-20), CRP 54 mg/L (0-3)

Imaging: CT: No acute findings; patches of hypodense white matter changes in subcortical regions bilaterally (not typical of ischemic lesions)

MRI: Multiple areas of decreased signal on T1-images, particularly prominent in peri-ventricular and deep white matter areas (consistent with areas of demyelination); similar lesions believed to be present in the cerebellum. Little edema surrounding these lesions; no mass effect

LP: Opening pressure 16 mmH₂O, Cell count: 80 WBC/mm³ (0-5), predominantly leukocytes, Glucose 67 mg/dL (40-70), protein 62 mg/dL (<40) Culture: No growth

JC virus positive

Problem Representation: 57 yo man with a history of immunosuppression due to Crohn's' disease treatment presents with subacute neurological symptoms and is found to have a confusion, bilateral Babinski sign, and left dysmetria and dysdiadochokinesia and gait ataxia (cerebellar signs).

Teaching Points (@gabifucci): #EndNeurophobia

- **APPROACH TO ALTERED MENTAL STATUS**
 - 1) Is it a true altered mental status? Possible other differentials: global encephalopathy/confusion/aphasia/behavioral changes
 - 2) Altered mental status localizes to CNS -> brain
Causes: **hyperacute** (vascular, seizure (postictal), trauma, toxic-metabolic (hypo/hyperglycemia, drug intoxication). **Acute** (hours/days: meningitis, inflammatory (MS, ADEM), toxic-metabolic causes (renal/hepatic failure, toxic medication). **Subacute:** brain mass (primary tumor, metastasis), inflammatory (antibody-mediated/paraneoplastic conditions/encephalitis, toxic-metabolic). **Chronic:** degenerative causes (dementias: FTD, AD, DLB...), infections (HIV/TB), neoplastic causes.
- **APPROACH TO ATAXIA:** differentiate between cerebellar and sensory ataxia (proprioception - dorsal column). If overlap brain + dorsal column: B12 deficiency, and copper deficiency. Cerebellum also needs motor inputs to coordinate the movements.
- **APPROACH TO INFECTION + STROKE:** **systemic infection:** endocarditis, **CNS infection:** meningitis (bacteria, if subacute: tuberculosis or other fungi, meningovascular syphilis - vasculitis), VZV, Aspergillosis, Cryptococcus, HIV complications
- Other pearls:
 - Differentiate between language x dysarthria (many causes, neurologic and non neurologic causes)
 - Cerebellum: ipsilateral deficit.
 - Progressive multifocal leukoencephalopathy (PML): imaging: periventricular lesions bright on T2/FLAIR that goes up to the cortex, no mass effect (demyelination and JC virus +)