6/22/22 Morning Report with @CPSolvers

Case Presenter: Ravi *(@rav7ks)* ***Case Discussants:*** *Jack (@jackpennar) and Sharmin (@Sharminzi)*

CC: Difficulty walking

HPI: 35F with history of polysubstance use disorder and recent MVA presenting to the ED with two days of difficulty walking, difficulty urinating, lower extremity weakness and paresthesias.

In addition, she has been having multiple falls.

PMH:
Polysubstance Use Disorder

Meds:

Fam Hx:

Soc Hx:

Health-Related Behaviors:

Allergies:

Vitals: T: 36.5 HR: 90 BP: 107/74 RR: SpO_2: 99% RA

Exam:
Normal

Neuro: strength: ⅗ in UE, ⅘ in LE. Diminished sensation to light touch, pinprick, and proprioception in bilateral lower extremities. Upper extremity reflexes normal. Diminished patella and achilles with upward babinski reflexes.

Notable Labs & Imaging:

Hematology:
WBC: 3.6 Hg: 10.9 Hct: 33.4 MCV: 102
PLT: 196

Chemistry: Normal

Imaging:
MRI Spinal Cord: No fracture, no lesion causing cord compression. Abnormal cord hyperintensity within the dorsal cervical spinal cord.

Additional Substance Use History: Frequent inhalant use, including Nitrous Oxide

Final Dx: Rapid-onset B12 deficiency from Nitrous Oxide Inhalation

Problem Representation: 35-year-old female with past medical history of polysubstance abuse and MVA 2 weeks prior presents with difficulty walking, diminished reflexes and diminished proprioception in B/L LE with MRI showing subacute combined degeneration of the spinal cord and labs showed a macrocytic anemia leading to evaluation of B12 levels that were low and an elevated homocysteine level.

Teaching Points (Ravi):

- MVA: Wearing a seatbelt ? High speed trauma, Abdominal injuries ?
- Difficulty walking- ? spinal cord injuries ? Bowel incontinance.
- Neuraxis/ Spinal cord - cord compression, vertebral cord compression, spinal abscess, hematoma, muscle injuries (trauma survey)
- Neuro problem ? localize it - localization to spinal cord
- Motor + sensory—> Spinal cord (combination of myelopathy + Sensory changes +/- autonomic changes)
- Features - don't fit with myelopathy: Sign of UMN- hyperreflexia ? Compatible with myelopathy ? Early phase of spinal process- myelitis or infarct or injury- can be areflexia or hyporeflexia. Takes days to set in
- U and L E weakness- makes spinal cord more likely.
- ? Compressive vs non-compressive myelopathy ? musculoskeletal fx, hematomas or non muscular like infectious spondylitis or epidural abscess.
- Substance use disorder - ? substances. Don't want to achor on this.
- Non compressive- transverse myelitis, autoimmune process. Infarct of spinal cord.
- Anemia- MCV elevated ? megaloblastic or non-megaloblastic.
- Hematomas- ? Dont need to lose much blood (anemia)
- Non-meg anemia- alcohol, thyroid. Meg anemia- B12 can have neuro manifestations or copper. Drugs like MTX can cause macrocytosis.
- Imaging: shows no cord compression.
- What are things causing dorsal cord process: Signature of nutrional deficiency B12.
- Whippets: Can cause rapidly progressive B12 deficiency
- B12 causes myeloneuropathy/Dorsal column pathology via demyelination