01/25/24 Morning Report with @CPSolvers

*"One life, so many dreams" **Case Presenter**: Parisa (@parisabediii) **Case Discussants**: Rabih (@rabihmgeha) and Austin (@RezidentMD)*

CC: A 72 y/o F presenting with weakness and back pain.

HPI: MS for 3 decades-> few flares-> Stable on anti CD20 (Ocrelizumab) every 6 mth.
Low back pain intensified 2 days ago and described as burning sensation which worsens with movement and is predominant on left side but does not radiate.
Decreased level of energy, Able to do ADL, No use of cane.
ROS: Loss of appetite. Denies fever, night sweats, cough, dyspnea, abdominal pain.
Hospital course: Developed shingles on her back

PMH: MS, HTN, HLD, DM, Hypothyroidism

Meds: Ocrelizumab, Alendronate, Baclofen, Simvastatin, Levothyroxine, Duloxetine, Gabapentin, Semaglutide

Fam Hx: Mother has DM & HTN, Dementia in father

Soc Hx:

Health-Related Behaviors: No use of alcohol, No pets

Allergies: NA

Vitals: T: afeb **HR:98 BP:109/48 mmHg RR:18 SpO2:98% BMI: 22.9**
(Lost 5 pound from last visit)
Gen: Looks pale, **HEENT:** anicteric, no LAD
CV: nl **Pulm:** clear b/l
Abd: soft & non tender, no HSM
Neuro: AO*3, cranial & sensory nerve exam nl, +ve Romberg test, No ataxia
Extremities/skin: Non palpable purpura b/l LE, Normal tone, Strength ⅘ in R arm & leg, Strength normal in L side.

Notable Labs & Imaging:
Hematology: WBC: 3.7k->1.4k ANC:240 Hgb:12-> 7 MCV:121 Plt: 310k-> 29k Reticulocyte:5.7 % PBS: Pancytopenia, Macrocytic normochromic anemia, No MAHA, rare blasts

Chemistry: Na: 140 K:3.8 Cl:100 HCO3: BUN:12 Cr:0.7 glucose:103 Ca:9.5 Mag:
PTT 22.3 (low) PT: 10 INR:1 AST:19 ALT:16 Alk-P:74 Albumin:3.9
Total protein: 6.4
LDH:323 Haptoglobin:70 B12:1980 Methylmalonic acid:nl
Sr Iron, TIBC, Saturation: nl Ferritin:324
Anaplasma, Lyme, Babesia, Hepatitis panel, HIV, EBV, CMV: Negative
UA: nl

Imaging: US Abdomen: Nl spleen & liver Echocardiogram: Nl

Bone marrow Biopsy: Hypercellular, blast 17%, Immunostains showed CD34 blasts & 25% cellularity
FISH: deletion of chr 5 & rearrangement of KMT2A & TP53

Dx: AML as therapy-related myeloid neoplasm (t-MN)

Problem Representation: 72 yrs old F a known case of MS, DM, hypothyroidism presented with weakness and back pain. P/E wide pulse pressure, Nonpalpable purpura, +ve Romberg Test, and ⅘ R UL and LL. Labs: Pancytopenia. BM: Hypercellular marrow, increased Blasts. DX. AML.

Teaching Points (Kuchal):

1. Is the weakness and back pain linked. It would be helpful to see how the patient presented- walked by themselves, or brought in ambulance. Is the weakness actually asthenia, fatigue, or neurological weakness.
2. Pain: ? inflammation, infection, compressive myelopathy (cauda equina); is the pain from vertebrae, muskuloskeletal, or from retroperitoneal structures.
3. **Important to note TIme course, red flags to be r/o (**age <15, or >50 yrs, history of malignancy, neurologic deficit, incontinence, constitutional symptoms, trauma, atypical pain), past and medication history
4. Asthenia: usually profound in patients with MS
5. Neurologic symptoms: either primary, or secondary. Ischemia to the cord is as exquisite or worse than ACS. MS- due transverse myelitis, or indirectly through immunosuppression, secondary infections.
6. Vital signs to be interpreted with the whole picture in mind: findings in other systems, past vitals. - is it truly normal, or a smoke indicating fire. Romberg sign: to assess sensory ataxia (posterior column/ or Vestibular)
7. Non palpable Purpura, with pallor: [Petechiae (smaller)]. Non inflammatory, vasculopathy, coagulation disorder (hence blood leaks out) - Labs ? bicytopenia or pancytopenia.- may be the pain is due to Retroperitoneal hemorrhage and needs to be ruled out.
8. Labs: **Profound Leukopenia - to consider infectious cause. RLR Schemas to considered- 4S : Substance (drugs, toxins), Spleen, Stem cell (Acute leukemia) , Systemic disease; MCV- High. Macrocytic Anemia; [+Posterior column sign r/o B12 deficiency].** LFT: **AST** >ALT- is it from hemolysis.
9. If stem cell and substance within Marrow- Reticulocyte count is usually Low. False high B12: Cirrhosis, or hematologic condition. Also consider if the patient is having Image (Abdominal) +/-ve. Also Parvovirus causes BM suppression.
10. Tick borne disease, Lupus to be considered; search for the Ticks, ANA to be done.
11. Drug Induced AML.
12. This patients Back pain; not due to marrow expansion, but as prodrome to Herpes Zoster infection.