12/27/24 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter: Oumaima (@OOutani) Case Discussants: Reza(@DxRxEdu), Rabih(@rabihmgeha)

CC: 83/Y female with urinary frequency, dark colored urine, back pain for 2 months.

HPI: She observed brown urine for 6 weeks. Saw her PCP who sent her to the ED. Currently feels fatigued and nauseous.

ROS: denies headache, fever, chills, chest pain, SOB, abdominal pain, vomiting, constipation or diarrhea, dysuria, urinary urgency, frequency.

PMH:
Afib CVA, HLD, HTN
recent dx of MGUS:
faint monoclonal IgG lambda M spike kappa free light chain of 3.2 lambda free light chain of 1.24 , kappa/lambda 2.6, not quantified on SPEP

Meds:
Apixaban, metoprolol, alendronate, mirtazapine, atorvastatin, Triamterene-HCTZ

Vitals: T: 36.7°C **BP:** 140/86 **RR:**16 **HR**: 75 **Sat:** 100% RA
Exam: Gen: No acute distress
HEENT: EOMI, no conjunctival pallor; **CV:** No JVD, RRR, no murmurs, gallops
Pulm: Normal efforts, clear to auscultation; **Abd:** normal
Neuro: Normocephalic, no ophthalmoplegia, AOx3, prior known CVA deficit
MSK: no rashes, mild peripheral edema L side

Notable Labs & Imaging:
Hematology:
WBC: 7.7 (L 13%) Hgb: 8.9 (MCV: 88) Plt:260
aPTT 45.3, INR: 1.4, transferrin saturation: 7, Iron: 11,
Chemistry
Na:136 K:5 Cr: 8.66 (bl 0.73), eGFR: 5, BUN: 101 Ca: 9.1 Glu: 112, Cl:105 HCO3: 17.1, AG: 14
Albumin: Slightly decreased, CPK: 32, Hapto 219,Ferritin: 556
UA: glucose 70, ketones negative, leukocyte esterase small, nitrite negative, PH: 6.5, protein: 100, SG: 1.010 , RBC 182, no dysmorphic RBC, 1 muddy brown cast, 3950 mg Protein/g Crea, Albumin/Crea also elevated, FeNa 10%
Repeat UA: RBC cast
SPEP: IgA, IgG, IgM nl, kappa/lambda: 2.1; **IF:** nl pattern, no monoclonal protein
HepB/C and HIV non-reactive
Imaging:
USG: increased renal cortical echogenicity consistent with non specific renal parenchymal disease
CTAP: no hydronephrosis, punctate nonobstructing left renal calculi. R>L trace B/L pulmonary edema, trace ascites and anasarca
Hospital Course: complicated by dyspnea
CT chest: B/L pleural effusions, GGOs w/ interseptal thickening concerning for **DAH**
CXR: B/Perihilar GGO and consolidative opacities with associated interlobular septal thickening, B/L pleural effusions R>L
Anti PR3:negative, ANA: positive**, C3, C4 nl, Anti-PL2R nl,**
anti-MPO +(4.9), anti-gbm +(8)
Renal biopsy:crescentic glomerulonephritis with linear IgG deposition. EM: No immune complex

Dx: Anti-GBM disease/Goodpasture syndrome

Problem Representation: 83Y/F with recent Dx of MGUS, presents with two months history of urinary frequency, dark urine, back pain with elevated creatinine and protein/creat ratio, complicated by dyspnea, with both positive anti-MPO & GBM Dx as **Anti-GBM disease**

Teaching Points: (Ethan)
Urinary frequency: isolate, a/w localized GU symptoms, or as a compensatory mechanisms (e.g., hydration)

Dark urine (unusual complaint)): obtain med hx (especially OTC, supplements), after excluding exogenous causes -> consider pigment/RBC/bilirubin

MGUS: complications happen in 2 ways, 1) could happen due to underlying plasma cell neoplasm, 2) paraprotein induced complications due to its structure (AL amyloidosis, neuropathy, MGRS, etc)

AKI: prerenal/renal/post-renal; GN rarely cause macroscopic hematuria (still could happen)); another way to connect the dots is intravascular hemolysis causing pigment nephropathy

Disconnection between AKI and urinary frequency: check PVR, paraproteinemia causing neurogenic bladder(?

Muddy brown cast: result of damaged and dying tubular epithelial cells that slough off into the urine. Happen in acute tubular injury, CKD, etc.

Thinking about start B-cell depletion therapy (debatable)/steroid empirically while waiting for kidney bx. Lack of response to steroid could give us dx clue to severe monoclonal gammopathy/ANCA vasculitis.

Proteinuria: glomerular disease/renovascular hypertension(could be local due to TMA)/tubular -> in this case likely glomerular due to degree of proteinuria, lack to hypertension, and high ACR

Pulmonary-renal syndrome: ANCA vasculitis, anti-GBM disease, ANCA-negative vasculitis (rarely, IgA vasculitis, cryoglobulinemia), etc.
Se of SPEP with IFE is greatly reduced in severe kidney disease
Normocomplementemic GN: MGRS, IgA, ANCA, anti-GBM
Differentiate anti-GBM vs ANCA: pathology + serology + clinical picture