05/27/24 Morning Report with @CPSolvers

"One life, so many dreams" ***Case Presenter****:Api Chewcharat (@Api_chew)* ***Case Discussants****: Raad Chowdhury (@raad_chowdhury)*

CC: a 70 yo M BL lower extremity edema

HPI:
He started noticing PE* 1 month ago, has gained weight (10 kg) over the month.
No abdominal pain, nausea, vomiting, dysuria, hematuria.
Bubbly urine +ve, difficult to flush

Rash (MP) since 6 months ago and treated with Tacro, subsided over 5 months.

PMH:
Hypertension
AML (Treated with induction Rx: Idarubicin, Cytarabine. Stem cell Transplant done 1yr ago, followed with Fludarabine, Melphalan

Meds:
HCTZ , Tacrolimus, Bactrim omeprazole.

Fam Hx:
Nothing significant

Soc Hx:
No alcohol, former smoker, quit 20 years back

Health-Related Behaviors:

Allergies:
None

Vitals: T: HR:62 BP:130/70 RR: saO2: 100% Weight: 100kg
Exam:
Gen:
CV: No murmurs.
Pulm: clear, no added sounds
Abd: benign, non distended
Neuro: NFND
Extremities/skin: Edema up to his thigh. MP Rash on back and shoulders

Notable Labs & Imaging:
Hematology:
WBC: 6K Hgb: 13.5 HCT: Plt:180k (bl)
Chemistry:
Na: 139 K: 4.3Cl: 103 HCO3: 26 BUN: Cr:1.5 glucose: Ca:8.7 Mag: PO4: 8.3
AST: 20 ALT: 16 Alk-P:66 Albumin: 2.7 (2.8)
PS: no schistocyte.
Hepatitis panel: N, ANA: 1: 40 Ds DNA: N VIT D :18
TSH 8.82. FT4: 0.8
BM Biopsy: Normal.
GFR
Total chol: 284. LDL: 218
C3 120 C4 22
PLA2R: negative Phospholipase 2R: SPEP: N, no M spike K32.7 lambda 22.6, KL ratio: 1.45
Imaging:
ECHO EF: 65%. Normal ventricle. Normal Valves
CXR: clear. No consolidation. No evidence PE
Venous doppler: BL DVT in L femoral vein and common vein
USG ABD: kidneys normal. Liver normal
UA: clear. Specific gravity.0.08. No red cell. Protein 3+. 24 urine: protein: 13.5 (On FU after initiating Rx for Membranous Nephropathy: U alb: 1.8, Total protein: 5 gm)
Kidney Biopsy: **(on hep drip): LM: Double contouring GBM. Stain: Craters, Spikes. IM: C3 deposits on papillary wall. EM: subepithelial deposits. Diffuse podocyte effacement. Anti PLA2R: negative**
Dx: **Membranous Nephropathy**

Problem Representation: 70 M presented with BL edema, weight gain of 10 Kg *1 month. And bubbly urine. PMH: HTN, AML (Stem cell transplantation done 1 year ago on chemo) Inv showed Proteinuria, Kidney Bx:Membranous nephropathy

Teaching Points (Jia):
1. **Edema:** heart, kidney, liver, DVT-> medication, systemic review, pt population (eg. with cardiac disease-amlodipine, hemo condition -gemcitabine)
Foaming urine: not sensitive or specific in diagnosis
2. AML-myeloid disorder: pre-renal, intrinsic renal (infiltration condition)
Tacrolimus: AKI, ATI, TMA (Bp drops down)
3. **Post-BMT kidney injury**: **timeline** is helpful in ddx
Acute: catastrophic AKI (occlusion in vessels, like hepatic sinusoidal obstruction syndrome and thrombotic microangiopathy), acute engraftment syndrome
Post 100 days: ->**Intrinsic:** ATN, interstitial disease (bactrim, penicillin), glomerular disease, BK nephropathy; ->**GN**: membranous nephropathy, minimal change disease, thrombotic microangiopathy; ->**Myeloid specific etiology**: lysozyme induced nephrology: lymphoma- 60-70% involve kidney, especially CLL
4. GVHD: no renal criteria; the timeline relationship of renal symptom and appearance in other systems is important for renal GVHD diagnosis.
5. Renal TMA: may not have systemic signs like schistocyte
6. **Complements in nephrology**: narrow down the ddx;
Classical pathway (C4+C3 low): lupus;
Alternative pathway (C3 low): PNH, TMA;
CAMEL mnemonic: C-cryo, A-atheroembolic, M-myeloma (C3 nephropathy), E-endocarditis, L-lupus, Infection GN
7. Biopsy interpretation: Double contour: GBM changes can be seen in TMA; membranous nephropathy associated with hematopoietic cells transplantation**: FAT1-Ab against podocytes**
8. Dense deposit disease: alternative pathway disorder with low complement; MN and MCD: autoimmune disorder.