



05/09/24 Morning Report with @CPSolvers



"One life, so many dreams" Case Presenter: Sohil Patel (@SohilPatel23) Case Discussants: Rabih Geha (@rabihmgeha) and Yazmin Heredia Allegretti (@minheredia)

CC: 68 F presented to the ED with fatigue and progressive shortness of breath

HPI: She was in good health 6 months ago when she noticed that she would get shortness of breath especially at night when lying down. She said there was tightness of feeling that comes in her chest that spreads to her neck while lying down as well. She has tried sleeping in a raised position but still wakes up occasionally from a choking sensation. She also experienced intermittent pains in the arms and legs. ROS negative: fever, chills, night sweats, weight loss, or bowel habit change.

PMH:
T2DM,
HTN,
GERD, HLD

Meds:
Insulin,
enalapril,
omeprazole

Fam Hx:
Sister has polymyalgia rheumatica
Soc Hx:
Smoked 1/2 pack for 45 years.
No alcohol or illicit drug use.
Last travel was 2 months ago.
Allergies:
Chocolate

Vitals: T: 37 C HR:112 BP: 119/76 RR: 22 SpO2: 90% on RA
Exam:
Gen: Tired looking with no acute distress
HEENT: Normal pupil/EOM. Normocephalic/atraumatic.
CV: RHB, no murmur.
Pulm: Bibasilar crackles, JVP obscured by habitus
Abd: Normal bowel sounds, mild HSM. Soft & tender.
Neuro: CN II-XII intact. No FND.
Extremities/skin: Bilateral pitting edema below the knees. No skin lesions.

Notable Labs & Imaging:

Hematology:

WBC: 6100 Hgb: 9 Plt: 234k

Chemistry:

Na: 132 K: 4 Cl: 100 HCO3: 25 BUN: 50 Cr: 2.8 glucose: 136 Ca: 9.7 Mag: 2.0 Phos: 5 TP: 8
AST: 83 ALT: 44 Alk-P: 595 GGT 55 T-bil: 1.6 (direct: 0.7) Albumin: 3.4
INR 1.2 BNP: 900 Troponin I: 0.02 -> 0.03 -> 0.02
HIV(-) HBV (-) HCV(-)

U/A: negative for protein, glucose, urobilinogen, nitrite, ketone

Urine sediment: no casts

24 hr urine protein: massive proteinuria

Imaging:

EKG: Sinus rhythm and low QRS complexes in limb leads.
Echocardiogram: LVH. Slightly enlarged LV. EF 55%. Reduced diastolic filling.
Abd U/S: No gallstone. No ascites. Diffuse coarse hyperechoic pattern with hepatomegaly.
CT abdomen: mild hepatomegaly with heterogeneously decreased parenchymal attenuation.
Liver biopsy: Deposition of eosinophilic amorphous material, apple green birefringence on polarization under microscopy, weakly positive for PAS stain.
BM biopsy: CD138 (+)
Dx: AL amyloidosis due to multiple myeloma causing restrictive cardiomyopathy

Problem Representation: 68 F presented with progressive shortness of breath and fatigue, signs of congestive heart failure, AKI, massive proteinuria, infiltrative pattern of liver biochemistry, and ultimately diagnosed with AL amyloidosis due to multiple myeloma causing restrictive cardiomyopathy through liver and bone marrow biopsy

Teaching Points (Parisa):

Two chief complaints together => morbidity(SOB); specificity(SOB); familiarity
Dyspnea → intrathoracic(heart; lung); extra thoracic(anemia; hyperthyroidism; neuromuscular weakness) → accompanied with fatigue(hemodynamic component) → heart(Pump; vascular) → Lack of accompanying pulmonary clue(cough and presence of wheezing)
SOB → nocturnal; positional → high vagal tone during relaxation → trigger asthma
orthopnea → pump function of heart → increase venous return → worsening SOB
Causes HF → MCC coronary artery diseases(ischemic CMP) + PMH metabolic syndrome/ HTN/ Idiopathic myopathies
Fluid overload (legs; lungs(crackles, orthopnea) ; weight gain) →
Acute decompensated HF → distended neck vein; accumulation in abdominal cavity and legs; high right atrial pressure
HF is a clinical diagnosis; do not need echo necessarily → ECHO identify output
Test: BNP; CXR; POCUS (90% will take us to dx)
Heart does not work well → 1) congestion (JVD) → 2) hypoperfusion (cold extremities) → 3) complete block → cardiogenic shock
Tachycardia → AF; sinus tachycardia (shows compensation, arterial perfusion issue)
Volume overload → end stage for organ failure heart; liver (budd Chiari) ; kidney (nephrotic syndrome; low Alb glomerulopathy)
Management volume overload in ADHF → diuresis(urine output) → low GFR higher dose requires → 20-40 mg IV lasix → not effective in low GFR → creatinine * 30 → furosemide dosage → switch to bumetanide
Urine protein dilemma → If UA (just albumin) does not show protein but 24 hr urine protein (all protein) shows → urine has many protein but not albumin → 24 hour protein to identify 24 hour albumin → protein in urine is not albumin → immunoglobulin → light chain → add **anemia** to this urine findings → MM
Test **paraproteinemia** → SPEP ; UPEP; serum free light chain (98-99%) → might not be reliable → 1) filtration problem(AKI + CKD) / 2) hypergammaglobulinemia → → urine protein electrophoresis / Enlarged LV + enlarged liver → infiltration