12/12/23 Morning Report with @CPSolvers

*"One life, so many dreams" **Case Presenter**: Dr. Nidhi Patel (@nidhipat19) **Case Discussants**: Dr. Jason Phillip Williams (@)*

CC and HPI: 62yF presented to outside facility for worsening exertional SOB. Orthopnea, PND, worsening LE edema, cough. Exam c/w VOL. CXR b/l large pleff L>R. CT chest no PE or pna. Thoracentesis transudative effusion. TTE EF 50% started diuresis, became hypotensive transferred to hospital. SOB improving, persistent cough.

ROS: very fatigue x6mo, 15lbs weight loss x3mo

Vitals: T: aF **HR:**83 **BP:** 100/60 **RR:20** Sat: 92% RA, 2L NC for >96% orthostatics -ve

Exam:

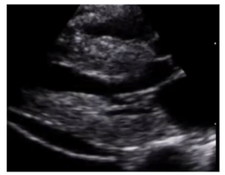
Gen: thin appearing, no acute distress, full sentences w/o sob

CV: nl S1/2, 2+ pitting edema to b/l hips, JVD up to mid-neck

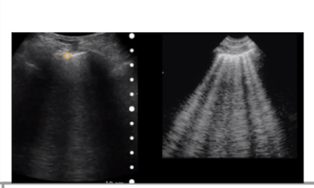
Pulm: good airflow b/l, reduced BS in L mid-lower lung fields

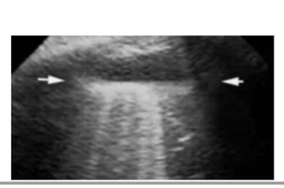
Abd: soft, non-tender

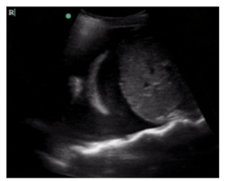
Extremities/skin: warm extremities



POCUS: lung - B lines, lung sliding present, spine sign with some atelectasis. IVC 2.2cm and non-collapsible. Cardiac parasternal long axis - adequate LVEF, no severe RV dysfunction (rule of 3 applies), mild pericardial effusion (anechoic black space along pericardium), hypertrophic septum and inferior wall. 4-chamber view - pericardial effusion, no RV collapse







PMH: none

Meds: SGLT2i, valsartan 160, lasix 80 qd

Fam Hx: No h/o cardiac disease, HF, coronary disease.

Soc Hx/Health-Related Behaviors: Not working. Used to drink alcohol. No smoking/drug use.

Allergies: N/A

Notable Labs & Imaging:

Hematology:

WBC: 9.8 Hgb:10.1 (IDA with low Ferritin) Plt: 300

Chemistry:

Na: 135 K: 4.4 Cl:99 BUN: 21 Cr: 0.95 Albumin: nl BNP 1017 Troponin 50 -> 62 -> 58

UA nl no proteinuria

Imaging:

EKG: NSR, low-voltage in v5/v6

CXR: b/l pleff L>R. CTPE no PNA/PE, redemonstrated pleff

Echocardiogram: EF 50%, LV smaller than normal severely inc wall thickness and septal thickening. Low systolic function. mod circumferential pericardial effusion, large b/l pleff. Nl RV size.

SPEP and UPEP -ve. Immunofixation +IgG kappa paraprotein c/f myeloma. Light chain ratio elevated (283). PYP scan at OSH ATTR amyloid -ve.

Fat pad biopsy: congo red and apple green birefringence. BM bx: MM

Dx: AL amyloidosis 2/2 MM

Problem Representation: previously healthy 62yF p/w chronic worsening exertional dyspnea, BLE edema, fatigue, and weight loss w/ sxs of VOL, elevated BNP, low-voltage EKG, cardiac pocus and TTE c/f infiltrative process and pericardial effusion fth AL cardiac amyloidosis 2/2 MM

Teaching Points (Tansu):

CHF (Top 3-5 causes of SOB in US hosp. pts).// Specificity of orthopnea 25% (80% → OSA, obesity, post nasal drip, GERD).// Leg edema: Pretest probability of CHF up w/ SOB. (+) leg edema may be coming from the DVT, PE, RV dysfunction, tamponade. Cough: Cardiac causes possible but not m.c.. (Pne: less likely from CT). Bilateral pleural eff: common w/ CHF, dx thoracentesis not always necessary, just diurese pts. Transudative effusion = Non-inflam., 2/2 hydrostatic P. (unilateral: Hepatic hydrothorax, bilateral: nephrotic synd. → albumin)// Why hypoTN after diuresis: 1) Pts who don't tolerate diuretics well → Usually have low EF @ baseline. 2) Too aggressive w/ diuretics esp. w/ diuretic-naive pts. 3) HOCM, infiltrative CMP of the heart → Preload dependent; 4) Check med list (afterload reducing agents titrated too aggressively?)// Lasix: reasonable to start w/ 40-80, as kidney adapts w/ increasing ion channel inhibitors, we up the dose. Assess the volume status w/ PE to decide to go on w/ diuretics. // Hypoxic pt: CHF, Pulm edema, pleural effusion → POCUS. // Best volume status exam: Leg exam (pitting edema → lots of fluid) // Pulm. edema: Auscultation for crackles 15% sensitivity, USG better. // Intravascular volume stat: Rate different compartments separately → helps w/ management, prevents overdiuresis, and hypotn, rate of refill cannot keep up w/ diuresis (Nephrotic syndrome pts.)// Lungs are wet? → Check B lines, pleural effusion outside the lungs. EF is dynamic, easy to assess w/ POCUS.

4 quadrants on lung POCUS → assess pneumothorax (non-sliding pleura), B-lines (lung infiltrates).Thickening of interstitium: Pneumonitis, ARDS, fibrosis…B lines: symmetric, one area? (CHF: Bilateral. Lower lobes: Number of B lines increases (gravity). Unilateral: PNE, acute lung injury.) Lateral & posterior lobes: Check those areas, fluid might be hiding. // IVC: IVC maximum diameter <2.1 cm, that collapses >50% (no collapse, RV pressure + CVP high). Mitral valve movement: Hitting the septum → Good Cardiac output, normal EF. Rule of Thirds: RV, Ao, LA should each take up 1/3 of the screen.// Pericardial effusion visualized → Tamponade? RA Free wall- does it collapse when TV closed? → Pericardial effusion is crushing RA (sign of early tamponade). Get formal echo, doppler on M&T valve. EKG: Low voltage in V1,2,3. Echo: No sign of tamponade. Worried about infiltrative process → c-MRI, endomyocardial bx., nuclear studies. Stress echo for dynamic LVOT obstruction. Increased LC in Immunofixation → B cell process. →BM bx for MM. Fat pad bx for AL amyloidosis. →AL amyloidosis 2/2 MM.