



01/06/24 Morning Report with @CPSolvers



"One life, so many dreams" Case Presenter: Dr. Alekhya Kotta (@PA_Kotta) from Baylor CM IM Residency (@BCM_InternalMed)

Case Discussants: Rabih (@rabihmgeha) & Dr. Faheem Bilal

CC: 44/M with generalized progressive swelling for the past few months

HPI: 1 year ago, presented to PCP with fatigue, A1C 14, started on metformin and glyburide. Still had progressive fatigue, generalized weakness and body aches, noticeable in hips, knee, and hands. In the past months, developed swelling, starting in the legs then developed everywhere, with increasing SOB, and 100 pound unintentional weight loss despite good appetite. Went to PCP, given furosemide.

ROS: No chest pain, headaches, orthopnea, PND, cough, change in urinary/bowel habits, fevers, chills

PMH:
Diabetes

Fam Hx: 2 children
Similar swelling problems (paternal uncle)
Diabetes (father, mother)
HTN (mother)

Meds:
Metformin
Glyburide
Furosemide
Multivitamins

Soc Hx:
No recent travel
Worked as construction worker (roofing)
No industrial exposures
No pets

Health-Related Behaviors:
2-3 beers everyday

Allergies: Denies

Vitals: T: 99.4 HR:90 BP: 90/60 RR:20 Sat 95% RA BMI 17

Exam:

Gen: Chronically ill, cachectic with temporal wasting

HEENT: No icterus, normal conjunctiva

CV: RRR, no JVD, laterally displaced PMI

Pulm: Clear to auscultation, no crackles or wheezes

Abd: Soft, distended, no hepatomegaly, positive fluid wave

Neuro: AAOX4, positive asterixis bilaterally

Extremities/skin: 3+ pitting edema in legs > arms, no joint change, no skin rashes

Notable Labs & Imaging:

Hematology: WBC: 5.5 (69% Neut; 24% Lym) Hgb: 12.4 MCV: 98 Plt: 130

Chemistry:

Na: 132 K: 4.9 Cl: 86 HCO3: 31 BUN: 18 Cr: 0.6 glucose: 281 Ca: 9.5 Mg: 2.2

AST: 93 ALT: 83 Alk-P: 163 GGT: 190 Albumin: 3.6 TB: 1 DB: 0.3 Total protein: 8.3

INR: 1.1 PT: 15 PTT: 30 BNP >3000 TSH: 1.2 A1C: 14 UA: negative

Imaging:

Echocardiogram: Left ventricular EF 25-29% LV dilated with global hypokinesia, normal wall thickness; LA dilated; RV size and function normal, RVSP elevated 40 mmHg, no pericardial effusion, no valvular abnormalities

RUQ USG: Cirrhotic morphology with moderate volume abdominal ascites and dilated main portal vein with hepatopetal flow

Paracentesis: Albumin: 0.8 Total protein: 2.2 RBC: 3000 Nucleated cells: 101 (lymphocytes) SAAG: 3

Hepatitis panel: Negative Alpha-1 antitrypsin: Normal Ceruloplasmin: Normal

ANA, anti-smooth muscle, antimitochondrial: Negative

Ferritin: 5600 Iron: 177 TIBC: 181 Transferrin: 130 Iron sat: 98%

MRI of the liver: Cirrhotic morphology with nodular contour and increased density, no focal hepatic lesions, mild splenomegaly, dilated portal vein, large volume ascites

Genetic testing (HFE): Homozygous mutation (C282Y)

Dx: Hereditary hemochromatosis

Problem Representation: 44/M with a history of DM and alcohol abuse presented with chronic anasarca, fatigue, SOB, 100-pound weight loss, severe HFrEF and liver cirrhosis, and was found to have iron overload and positive genetic testing consistent with hereditary hemochromatosis

Teaching Points (Mario): **1)** Anasarca: 1st pass: Heart, Liver, Kidney. 2d pass: Endocrine/Metabolic: Hypothyroid, Protein wasting (i.e enteropathy). Approach: (Localizing) associated symptoms (i.e dyspnea, chest pain for HF, diarrhea for Enteropathy). Vitals: High BP: CV, Renal >>> Hepatic. High RR: CV > Renal, Hepatic. Anasarca +/- Dyspnea -: Renal > CV, Hepatic. **2)** DM and net weight loss: T1DM, pancreatitis disease >>> Insulin resistance. **3)** Multisystemic diseases causing Anasarca: Infiltrative (Hemochromatosis, Sarcoidosis), Autoimmune (PAS).

Clarify the problem → search for the right Dx.

4) Ascites 2/2 HF: SAAG >1.1 + TP > 2.5. **5)** High SAAG: Portal HT (Cirrhotic 90% vs non-cirrhotic), HF. **6)** HF + Liver Dz: Hepato-cardiac syndrome (CV <-> Liver), EtOH, Iron, Amyloidosis. **7)** Iron overload in HH: 2nd hit caused by EtOH, viral hepatitis. **8)** Secondary Cirrhosis: Metabolic (HH, Wilson, AAT1), Autoimmune (PBC, PSC, AH), Vascular (Budd-Chiari, HF, Constrictive pericarditis). **9)** Cirrhosis: Screen and Treat complications. HF: GMDT (including invasive therapies). **10)** HH: Genetics: AR (mutation HFE gene Ch 6, penetrance 20%. Most common: C282Y/C282Y > H63D. Clinical: Liver, Skin, Heart (dilated > restrictive), MSK, Endocrine (Pancreas, Pituitary, Thyroid, Parathyroid, Hypogonadism). Management: Phlebotomy, Iron chelators. Dx of Iron Overload in HH: have to rule out transitory effects of EtOH