8/14/23 Rafael Medina Subspecialty VMR with @CPSolvers

***"One life, so many dreams"* Case Presenter**: *Nidhi Patel (@Nidhipat19)* **Case Discussants**: *Maya Dassanayake (@MDassa)*

CC: **SOB & tachypnea**
HPI: 44 M admitted to the Hematology-Oncology service for acute myeloid leukemia. He was transferred to the ICU for SOB and tachypnea on day 2 of hospitalization (Rapid response) while waiting for biopsy result.. Portable X-ray: Bilateral pleural effusions. Biopsy: New onset AML

3 weeks ago: presented to outside hospital for leg swelling, abdominal distension, SOB. They thought he had sepsis due to AMS and leukocytosis. They found hepatosplenomegaly and transferred him to current hospital for malignancy workup

PMH: None
Never felt chest pain, SOB, PMD, syncope, orthopnea

Meds:

Fam Hx: Younger brother with Hypertrophic CardioMyopathy. Maternal Aunt and uncle with sudden death in their 40s.
Soc Hx:Engineer, Lives alone, ADLs and IADLS by himself
Health Behaviors: Smoked for 3 years but quit, 3-4 beers a day, no illicit drug use.

Vitals: T: afebrile **HR:** 108 **BP:** 105/69 **RR:** 26 **SpO2 97% in 5l and 85% in RA**
Gen: Sitting in bed no distress, tachypnic, work of breathing
HEENT: JVD up to ear lobe
CV: Irregular RR, no thrills, no murmurs, SOB when ange changed
Pulm: decreased breath sounds at b/l bases
Abd: BS present, firm distended with no fluid wave
Neuro: AOx4 able to converse
Extremities/skin: warm to touch in all extremities b/l pitting edema (2+)

Notable Labs & Imaging: Similar to 1st day of admission. No baseline labs
Hematology: WBC: 15k Hgb: 7.5 Plt: 807
Chemistry: Na:131 K: 4.8 Cl: 99 CO2:23 BUN:17 Cr:0.7 glucose: 120
AST:Normal ALT: Normal BNP: 230 Trop: 18 then went to 5 the following day
Imaging:
CTPE: No PE, Multi Chamber hypertrophy
TTE: EF 25-30%, L atrium moderately dilated, L ventricle normal size, severe increased wall thickness, septal thickening, concentric hypertrophy, bright myocardium , R ventricle normal size, small pericardial effusion, mild mitral regurgitation
Started in BB and diuretic to improve SOB and volume overload. Concern for infiltrative process apart from HCM.
Cardiac MRI: Severe asymmetric hypertrophy, ventricular septum 1.5 cm subepicardial scar. Suggestion: Myocarditis secondary to leukemic infiltration
Discharged home and treated for AML. TTE after 1 month: normal EF and significantly decreased thickening of septum. Continues Follow Up with HCM clinic

Final dx: Cardiomyopathy from leukemic infiltration of myocardium

Problem Representation: A 44yM w/ newly diagnosed AML & family Hx of HOCM p/w SOB, tachypnea and volume overload in the setting of systolic heart failure likely due to HCM & myocarditis.

Teaching Points (Kiara):
Physical Exam in HF
- Vitals, hemodynamics, perfusion status, volume status, mental status

HF management
- Warm and wet: Diuretics
- Cold (poor perfusion) and wet: Inotropes ⟶ Diuretics
- Warm and dry: Probably another 1° cause causing vasodilation (sepsis)
- Cold and dry (Tricky patients- cardiogenic shock): Mechanical support

HCM: Fabry disease, amyloidosis (bright myocardium), sarcoidosis
- LVOT: Anterior systolic motion of MV can be present on echo with precipitating maneuvers.
- Infiltrative workup: Cardiac MRI (late gadolinium enhancement- sarcoid and amyloid), light chain, PYP scan, strain pattern (echo)

Pearls:
- Patients w HF are predisposed to an infection
- Hypertrophic CMP prevalence is 1 in 500
- Myocarditis:
  Giant cell: p/w arrhythmias
  Viral: Most common