05/22/24 Morning Report with @CPSolvers

***"One life, so many dreams" Case Presenter**: Megan Kotzin (@) **Case Discussants**: Sharmin (@sharminzi)*

CC: **37 year old male with shortness of breath**

HPI: 37 y/o male with no significant PMH presents w/ 5 days of SOB and palpitations,
vitals nl. He was found to have frequent PVCs with episodes of bigemy, ecg non-ischemic, trop 0, d-dimer 511, CTA was negative, Hbg 10.9 with no baseline, TSH 8 (nl T3/T4)
3 days after worsening SOB, insomnia, nausea vomiting, dry cough, vitals nl, no fever/chills, URI symptoms, Na 133, normal BMP, alb 3.2 Tili 1.8 Alk-P 138, AST 792, ALT 1098, CBC stable, Acute hep and tylenol negativ, RVP neg., HIV neg, BNP 855 (ULN 100), Trop neg x2, UDS neg

CTA neg, **CT Abdomen/Pelvis:** mild cardiac enlargement, hepatic congestion, chronic appearing LV thrombus (1.8)
TTE: EF 35-40%, RV enlarged, inferolateral hypokinesis, mild mitral regurgitation

PMH:
nil

Meds:
nil

Fam Hx:
nil
Soc Hx:
Drinks 1-2 times per week, no tobacco, no substance use
Health-Related Behaviors:
Moved from Colorado
Works in software design
Allergies:
No allergies, recent illness or immunisation

Started on **SGLT2, ARB, Diuresis, BB**
Stress test: fixed perfusion defect of mid to apical anteroseptal wall
Angiography: normal coronary vessels
Cardiac MRI: severely dilated LV w/ normal wall thickness, global hypokinesis LVEF 24%, RVEF 23%, non-ischemic pattern w/ diffuse subendocardial LGE, late gadolinium enhancement
Sinus arrest with JER in the 40s: BP 78/60s, temp pacer applied, started on levophed. Cr from 0.9 to 2.76, Lactate 4.6
On arrival looked great, MM moist, no edema, heart paced at 90, systolic murmur, lungs nl, no JVD, abdomen nl
CBC WBC nl, plt 381, Na 127, K, Crea 2.06, AST 1115, ALT 823, AlkP and Bili nl, Lactate 1.4, Viral Hep HIv neg, SPEP nl
Switched to dobutamin, good BP, 2 episodes of PCVs initiated PMVT -> defibrillation and intubation for VT storm
Extubation next day, loaded w/ amiodarone, low UOP, lactate jumped to 8.1 (from 2.9)

Dilemma: diagnosis? Recoverable? VT limits dobutamine
IABP and Impella contraindicated w/ LV thrombus
Surgery for cannulation to VA-ECMO - went back to PMVT (likely non-recoverable arrhythmia)
Listed for heart transplant, got one 6 days later
Biopsy: Lymphocytic myocarditis (post-viral, post immunization?)

Dx: Non-ischemic hyperacute heart failure in the context of fulminant lymphocytic myocarditis requiring heart transplant

Problem Representation: 37 y/o male with no PMH presents with SOB and palpitations, was found to have congestive hepatopathy, recurring PMVTs requiring pacing, VA-ECMO and ultimately heart transplant in the context of fulminant lymphocytic myocarditis.

Teaching Points (Julia):

1. **SOB**: first exclude the most morbid & common etiologies: think pulmonary and cardiac
2. Infiltrative diseases can lead to <u>arrhythmias</u>
3. **Liver abnormalities:** primary vs. consequence of underlying disease
4. **LV thrombus:** very low EF, ventricular stasis , AFib, hypercoagulable states, eosinophilic myocarditis
5. **Bradykardia** separate primary (e.g. TAVI, ischemia -> sinus arrest) from secondary (e.g metabolic derangements 2/2 infections) causes
6. **Cardiomyopathy**: dilative, hypertrophic, restrictive or arrythmogenic right ventricular; ischemic vs. non-ischemic; toxins
7. Differentiate inflammatory from non-inflammatory cardiomyopathy, MRI can be useful: **late gadolinium enhancement** is suggestive for inflammatory process
8. Symptoms of **HF + young age** -> increases likelihood for <u>congenital</u> cardiomyopathies, <u>infiltrative</u> diseases; however, do not miss <u>infections</u> like Chagas Cardiomyopathy
9. **Dilative cardiomyopathies** -> scars and fibrosis -> severe <u>arrhythmias</u>
10. normal serum troponin <u>not</u> necessarily exclude myocarditis
11. **Fulminant myocarditis** (requiring IV inotropes) : giant cells, eosinophilic, sarcoid, viral lymphocytic