03/06/21 Morning Report with @CPSolvers

Case Presenter: *Mathieu Brunet* ***Case Discussants***: *CPS family*

CC: Tachycardia
HPI: 20M referred for persistent tachycardia (120 bpm).
COVID day 10

Persistently febrile for 10d, mild SOB, denies chest pain, GI symptoms.

Past Medical History: Not known

Meds: None

Family History:

Social History: From Algeria, moved to Canada, no recent travel

Health Related Behaviours: None

Allergies: None

Vitals: **T**: 38.5 **HR**: 132 **BP**: 117/54 **RR**: 22 **SpO_2**: 99% on ra
Exam:
Gen: Moderately sick
HEENT:
CV: No murmurs
Pulm: Clear bilateral
Abd: Soft, non tender
Neuro: Normal
Extremities/Skin: Normal

Notable Labs & Imaging:
Hematology:
WBC: 7 Hgb: 7.5 → 6.7 VGM (MCV) 56 Plt: 161000

Chemistry:
AST: ALT: Alk-P: T. Bili: Albumin: D-Dimer: 600, CRP 50 Trop (x3): Negative Ferritin 36 Triglycerides nl
ABG: pH 7.35, HCO3 20
Coagulation fx and lactate: Normal
Imaging:
EKG: Sinus tachycardia, high voltages in anterolateral lead, diffuse inverted T waves.
2nd EKG: T waves inverted lateral and inferior waves, otherwise normalized.
CT: Lungs consistent with Covid-19, Negative for PE
Echo: RV smaller than LV, no pericardial effusion. Apex with concern for regional wall abnormalities. IVC < 2 cm.
1 unit of blood transfusion, remained vitals stable.

Problem Representation:
ENG: 20y w/COVID p/w sinus tachycardia and persistent fever. EKG and echo concerning for LVH.
ESP: Joven de 20 años con taquicardia sinusal y exámenes sugestivos de hipertrofia ventricular izquierda.
POR: Homem, 20 anos, previamente hígido, apresenta-se no D10 de Covid19 com taquicardia sinusal e febre persistentes. ECG o Eco com sinais sugestivos de hipertrofia ventricular esquerda.

Teaching Points (Rafa):

- **APPROACHING 20 YO PATIENT POST-COVID W/ PERSISTENT TACHYCARDIA**
  Severity increases w/ age and presence of morbidities
  New variants are emerging - (Eg, Brazil)
  Unusual complications - thromboembolic risk anosmia , myocarditis
- **PERSISTENT TACHYCARDIA**
  Intrinsic (ventricular tachycardia, SV tachycardia)
  Extrinsic causes - sinus tachycardia - physiological or pathological response - shock (distributive, cardiogenic, hypovolemic, obstructive) + fever + sympathetic toxicity (exogenous - cocaine, albuterol, ethanol withdrawal / endogenous - pheochromocytoma, anxiety, pain, hypoglycemia,)
  Look for the EKG!
- **SHORTNESS OF BREATH**
  Cardiovascular processes: myocardium (HF), CAD / pericardium (constrictive, tamponade) / electrical (arrhythmia)
  Pulmonary processes airway (asthma, COPD), parenchyma (ILD), alveoli (water, blood, pus), vasculature (PE, pulmonary HTN), pleura (effusion, PNTX), chest wall (obesity) / neuromuscular (myasthenia) / hematology (anemia) / others: acidosis, anxiety)
- **HIGH VOLTAGES ON EKG** - lot of myocardium - concentric hypertrophy - S4 (noncompliant heart - diastolic dysfunction) hypertrophic cardiomyopathy, response to HTN, aortic stenosis, Friedreich ataxia, athlete's heart
  Pearl: S4 is normal in older adults! Abnormal in young patients and children!
- **MICROCYTIC ANEMIA** - defective globin chain synthesis (thalassemia) / defective heme synthesis (anemia of chronic disease , iron deficiency, and lead poisoning)