4/30/20 Morning Report with @CPSolvers

***Case Presenter**: Mike Rose (@MikeRoseMDMPH)* ***Case Discussants**: Imran Nizamuddin (@INizamuddinMD) & Lindsay Haselden*

CC: found down (AMS)

HPI: 50ish male presents to ED **found down** on porch.

- Audibly snoring (improves with jaw thrust)
- No change in mental status after 2 amps of D50, fingerstick glucose remains < 10
- Naloxone given, some improvement
- Reports he "snorted something"
- Says he does not have diabetes
- Reports a history of "problems with my heart"

Improvements in UOP and mental status after diuretics

ROS: diarrhea

PMH:
Cocaine-induced cardiomyopathy (EF 10-15%)
Substance use disorder
CKD
HTN

Meds:
Heart med
BP med

Fam Hx:

Soc Hx: lives with mom, usual state of health until morning of presenting

Health-Related Behaviors:
Heroin, Cocaine use

Allergies:

Vitals: **T**: 35 C **HR**: 113 **BP**: 182/131 **RR**: 16 **SpO_2**: 92% (on RA)
Exam:
Gen: initially not responding to sternal rub, moaning after naloxone
CV: JVD, no murmurs, rubs, gallops, muffled heart sounds. Tachycardic
Pulm: no crackles
Abd: diffusely tender after naloxone, no guarding
Neuro: pinpoint pupils
Extremities/Skin: cool to touch, delayed capillary refill

Notable Labs & Imaging:
Hematology:
WBC: 17.3 (92% neutrophils), Hgb: 8.6 (nl MCV), Plt: 261

Chemistry:
Fingerstick glucose < 10
Na: 138 K: 5.4 Cl: 100 CO2: 8, AG: 30 BUN: 20 Cr: 1.7 (bl 1.6), glucose < 2 → from upper arm IV similar BMP, **except glucose 247**
AST: 914 ALT: 221 Alk-P: 171 T. Bili: 3.2 Direct 2.9
Troponin 0.76, lactate: 16
VBG: pH 7.15/27/9
SOsm: 300 (nl 285-295) Osm gap: 17, CK: 1092, proBNP: 127,000

Imaging:
EKG: normal sinus rhythm, no ST abnormalities
CXR: clear lung fields, enlarged cardiac silhouette
Echo: no pericardial effusion, no tamponade, grossly dilated IVC w/o respiratory variation. Greatly reduced EF
Urine tox: positive for cocaine & heroin

Problem Representation: Middle age man with HFrEF and substance use disorder p/w AMS found to have cardiogenic shock, an osmolal gap, and toxicology consistent with cocaine induced hyperacute heart failure exacerbation and heroin intoxication

Teaching Points (Jack):
Translate Found Down → AMS; Translate signs of hypoperfusion and JVD → Cardiogenic shock: In any clinical case, we translate individual clinical findings into an entity that allows us to deploy a schema.
Normal or elevated BP does not rule out shock. Shock is a state of systemic hypoperfusion, which often happens with hypotension, but can also occur in normo- or hypertension.
Rx before Dx in a patient found down: ABCs and emergent interventions (D50, Naloxone, Intubation, +/- Thiamine).
An initial approach to hypoglycemia involves differentiating between **true hypoglycemia** or **pseudo/peripheral hypoglycemia** (peripheral vasoconstriction, delayed sampling, or leuko/erythrocytosis), especially in a patient with **hypoglycemia out of proportion with their MS.**

- In this case, the combination of D50-refractory hypoglycemia, poor cap refill, and elevated JVP suggest cardiogenic shock even in the *absence* of hypotension.

Signs of a Cardiomyopathy + Clear Lungs? Chronic HF → increase in capacity of pulmonary lymphatics vs. pericardial disease.
Acute CHF: Endocardial causes (acute MR), myocardial causes (ACS, Takotsubo, myocarditis) and pericardial causes (tamponade). However, we also have to consider a mimic which is compensated CHF with a severe acute trigger (e.g., infection or acute ingestion, as in this case).