04/25/25 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter: Nikola Vladic (@VladicNikola) Case Discussants: Rabih (@rabihmgeha) and Deborah (@deboraclouseiro)

Scribing (Zakariyya)

Chief Concern: 70 yo male with a swollen, painful, bruised upper thigh. Happened 1 day after twisting ankle while hiking.

HPI:

Mild pain that then *progressively worsened* until it woke him up at night. Patient didn't fall or have any other trauma.

No fevers, chest/abdominal pain, dyspnea, weight loss, headaches, dizziness.

No other painful sites

ROS:

PMH:
HPT
Dyslipidemia
DM2
OA
Chronic venous stasis
Prior appendectomy and cholecystectomy

Meds:
Lisinopril.
Amlodipine
Vit D and calcium
Metformin

Fam Hx:
Father: Stroke in 70s
No malignant history, autoimmune diseases or coagulopathies

Soc Hx:
Lives with spouse
Retired

Health-Related Behaviors:
No smoking or significant alcohol use
Spends a lot of time in nature

Allergies:

Vitals: Temp 37.4. **HR**: 30. **BP** 103/67. **RR** 18. **O2** 97% on RA
Exam: Severely distressed due to excruciating pain
CVS: Bradycardic. S1, S2, no murmurs, rubs or gallops
Pulm: Clear lungs
Abd: SNT. No HSM
Neuro: Normal
MSK: Severely swollen, bruised right thigh. Weak femoral pulse, absent popliteal and foot pulses

Notable Labs & Imaging:

Hematology:
WBC: 15 (Neutrophilia) Hb:8.9 Plt: 750 PT: 12.5 PTT 28 D-dimer: 0.6 (normal 0.5) Trop: Normal. BNP Normal

Chemistry
CK 15000 LDH 800 AST 400 ALT 300 ALP 70 Na 130. Cl 99. K 8.8 Bicarb 15. Creatinine 2.1 BUN 38 CRP 32 Lactate 2.0 Trop: Normal. BNP Normal

EKG: Bradycardia with Wide QRS and peaked T-waves. No P-waves

Compartment Pressure: 40mmHg - emergent fasciotomy done. Rhabdo and Hyperkalemia treated. Patient improves clinically. Referred to ICU for monitoring

A few hours after fasciotomy: Profuse bleeding from surgical site.

Repeat Labs: Normal platelets, normal coagulation studies. Slightly increased D-dimer to 0.7 bleeding stopped after compression and Tranexamic acid

vWF: Antigen and activity normal. Normal Vitamin C, platelet aggregation studies. **Factors 2, 5, 7, 8, 9, 10, 11, 12:** All normal activity

Factor 13: low activity with antibodies

Final Diagnosis: Compartment Syndrome secondary to acquired factor 13 inhibitor

Problem Representation: 70 yo male, metabolic syndrome with excellent baseline, now with severe rhabdomyolysis of the thigh secondary to traumatic bleeding from acquired factor 13 deficiency

Teaching Points (Mohammad):

Imp. Evaluation
* Define the problem based on clinical history/exam.
* Assess the time course of symptoms.
* Check for underlying joint problems (e.g., osteoarthritis) or weak bones/osteoporosis.
* Determine the extent of injury.
* Hx of recurrent bleeds or mucocutaneous bleeding.

Hematoma
* Differentiate traumatic vs. spontaneous hematoma.
* If hematoma occurs after trivial trauma, evaluate for underlying bleeding diathesis/tendencies.
*Most common cause of a significant bleed in the context of normal PLTs/Coags is an underlying structural cause e.g burst of varicose veins

Important considerations during evaluation
* Review medications: anticoagulants, antiplatelets.
* Screen for liver disease, coagulopathies, vitamin K deficiency, clotting factor deficiencies, antiphospholipid syndrome (APLs), DIC
*Factor 13 Deficiency and VWD are **2 sneaky rare causes to look for**; VWD usually present w/ diffuse bleeding syndrome involving multiple sites

Complications to watch for
* Most important: Acute Compartment Syndrome (ACS), especially if bleeding is progressive and acute.
* Remember: the thigh can hold up to 1 liter of blood! Blood accumulation in the retroperitoneum or thigh should be considered significant until proven otherwise.

Cardiac/ECG Clues
* Slow, wide QRS: think of hyperkalemia and/or other differential diagnoses of such ECG findings
* Bradycardia: **think of 3 sinister causes:**
  * Cardiac ischemia (of SA/AV node).
  * Beta-blocker/calcium channel blocker toxicity (could be part of BRASH syndrome).
  * Hyperkalemia.
* Treat and evaluate for causes of hyperKa: CaGluconate essential whenever ECG changes or severe HyperKa, always address HyperKa causes
*Bleeding > Compartment syndrome > Rhabdo > HyperKa + AKI > more hyperKa > Bradycardia
*HyperKa Rx: Insulin/D5/SABA > dump K into cells, K+ GI binders, improve kidney function to enhance K excretion
Rhabdo Rx: FLUIDS + Rx underlying cause (ACS is an emergency! CT diagnostic +/- possible AE + Surgery for fasciotomy), monitoring