



10/21/20 Morning Report with @CPSolvers



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CC: R. Lower extremity pain
HPI: 20 R lower extremity pain presented to neighbor hospital due to motor vehicular accident. He got hit at the left side at 30 miles per hour. It was not a direct hit to the driver, more in the back of the car. He was wearing seatbelt. No loss of consciousness. He was removed by bystander. Initially, he only had pain in R elg. He denied SOB, headache, any other symptoms.

He was hospitalized and had External fixation of R ankle the next day. Acetabular fx was not repaired yet. Two days after he was hypoxic (70%). No oxygen required to requities 30L liters of O2. Saturation was 97%. Afebrile, BP 120/80 HR 80,RR 18. Mildly anxious, No SOB. Chest clear to auscultation., R swelling, external fixation device with not focal petechiae. He only received one dose of Opioid day before.

PMH: Asthma Anxiety GERD OSA	Fam Hx: None
Meds: Albuterol (Inh)	Soc Hx: 1 alcoholic drink per week
	Health-Related Behaviors: No
	Allergies: None

Vitals: T: Afebril HR: 76 BP: 126/63 RR: 18 SpO₂: 98%
BMI: 35
Exam:
Gen: Collar in place, back board, no distress
HEENT: No evidence of clear trauma, no deformities, PERRLA, moist mucosa. Trachea was in midline. No tenderness to palpation
CV: RRR, Pulm: CTBA
Abd: Distribution of ecchymosis mimicking seatbelt, soft abdomen, tenderness in R lateral hip, open wound with femur expose in knee, gross deformity of R ankle
Neuro: Strength and sensation was conserved
Extremities/Skin: Warm, scattered abrasions in body

Notable Labs & Imaging:
Hematology:
WBC: 19.8 (Normal dif) Hgb: 15.3 Plt: 256
Chemistry:
AST, ALT: N CK 460, COVID: Positive (no symptoms), D-dimer: 1.57; ABG: PH7.38 PCO2: 48 PO2: 74
Imaging:
EKG: Normal sinus rhythm
CXR: Diffuse opacities
Head, Chest CT: Normal
Chest CT: R Acetabular fracture, pilon fracture (tibia near the ankle)
Doppler of Lower extremities: Negative for DVT
CT PE: Left lower lobe segmental thromboembolism artery, subpleural glass opacity, nodular opacity.

Final DX: Fat embolism syndrome that resolved quickly

Problem Representation: 20 M COVID positive with recent trauma and surgical fixation. Sudden onset of hypoxemia and diffuse opacities in chest.
Dx: Fat embolism syndrome

Teaching Points (Sukriti):

A. Investigating the Sx of Leg pain In the context of a deep back story: Trauma

- 1.Vascular: arterial + venous circulation = Rupture -- compartmental pain, arterial dissection (typically in aorta).
- 2.Chronic process: Underlying infection, malignancy, osteoporosis.

CRP: In the context of trauma, mechanism of injury becomes extremely relevant-- severity of force, direction and acceleration
Remember, these patients often have underlying visceral injury without apparent outward evidence.

B. Collecting clues:

- 1.Is the degree of injury out of proportion to severity of trauma -- Is there an underlying process?
- 2.Thinking about the events that led up to the trauma.
- 3.Looking beyond the obvious pain that might be masking other sites of pathology.

Clinical Pearl: While Tx a pt, pertinent negatives are often as important as a positive findings: In trauma, (from top -> bottom) absence of face swelling bruising, midline trachea, signs of ruptured viscera/vessel in abdomen, adequate extremity perfusion

C. Framing a hypothesis: Long bone fracture + hypoxemia + diffuse lung opacities
Hypoxemia-- alveoli

1. ARDS: Inflammatory state -- pathogen/tissue damage
2. Coagulopathy -- >> PE, alveolar hemorrhage, fat embolism
Diffuse lung opacities - decreases pre-test probability of an embolus.

D. Testing the Hypothesis: Pre- test Probability?
Test: COVID> Embolism
CRP: GGO = partially filled alveolus (b/w normal and consolidation); can be caused by any and all pathological processes
CRP: Does an embolism have an effect on alveolar hypoxemia?
A fat embolism causes hypoxemia by infiltrating the alveolar space and causing problems with diffusion + production of toxins