Complicated Pulmonary Course Associated with Sepsis in an IV Drug Abuser

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Introduction / HPI:

27 yo male with past medical history of IVDA presented to Roxborough Memorial Hospital (RMH) with right leg swelling for 5 days and shortness of breath. The patient stated that 5 days prior he was using heroin and injecting the needle into his right medial foot. He said that the following day he noticed a blister forming and sliced it with a knife that he cleaned with soap and water. The next day he noticed swelling of his foot with progressing redness and pain traveling up his leg to his knee. He described the pain as a 5 out of 10 when at rest and a 7 out of 10 when walking on it. He stated that he has been taking 1 tablet of Motrin per day for last 3 days with minimal relief. He endorsed shortness of breath when at rest and exertion, chest discomfort, productive cough with green mucus, black/green diarrhea for 3 days, and decreased appetite. He states that he is a daily heroin user for the last 3 years with the morning of presentation being his last use. Pt stated that he had never been hospitalized for withdrawal but has had some withdrawal symptoms including agitation and trouble sleeping.

Methods / Testing:

Admission Blood Work and Testing:

CMP:
Na – **126**
K – **3.2**
Cl – **89**
CO2 – 27
AG – 10
BUN – 24
Glucose – 109
Ca – **7.8**
AST/ALT – **61/54**
Alk Phos – 70

ABG:
pH – **7.519**
pCO2 – **27.2**
pO2 – **51.4**
HCO3 – 21.7
sO2 – **90.5**

Hemogram:
WBC – **25.9**
RBC – **4.21**
Hgb – **12.0**
Hct – **36.7**
MCV – 87.2
Platelets – 271
Procalcitonin – **24.37**
CK – **414**
Lactate – 1.3

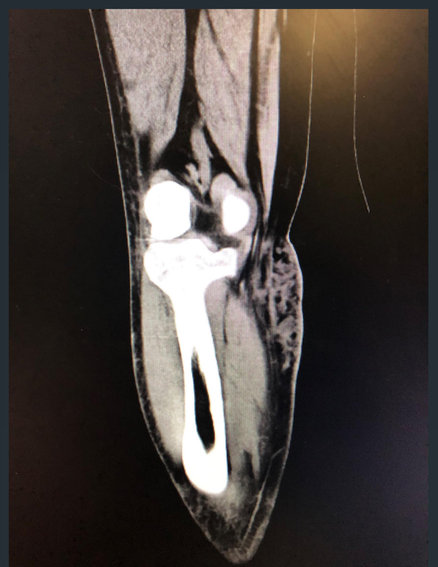
Urine:
Amphetamine – Neg
Barbiturate – Neg
Benzodiazepine – Neg
Cannabinoid – Neg
Cocaine – **Pos**
Opiate – **Pos**
Phencyclidine - Neg

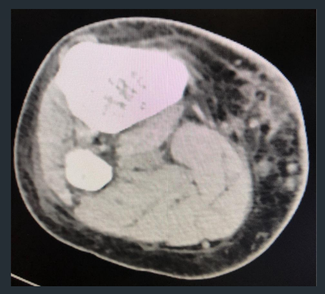
Abdominal U/S:
Reason: Elevated LFT's
Impression:
Hepatosplenomegaly.
Dilated CBD and probable central intrahepatic biliary duct dilation of uncertain etiology. Questionable recanalized umbilical vein.

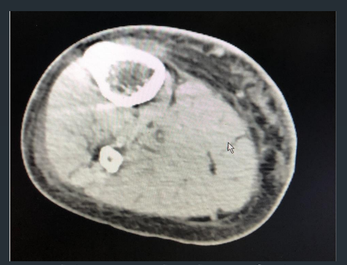
Right LE U/S:
Reason: RLE Swelling
Impression: No evidence of DVT in RLE.
Superficial thrombus within the medial calf.

EKG:
HR – 126bpm, QTC - 470
Sinus tachycardic
Probable LAE
Probable LVH

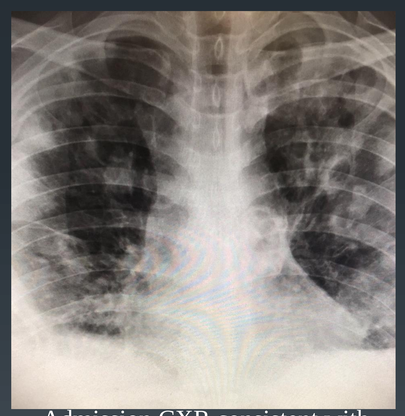
Imaging:



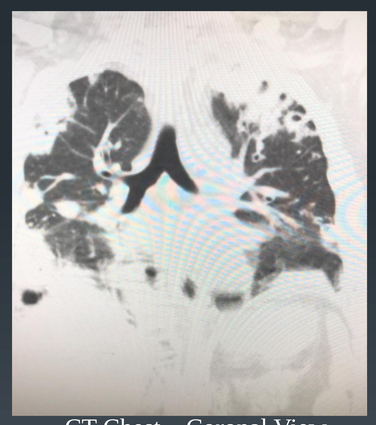




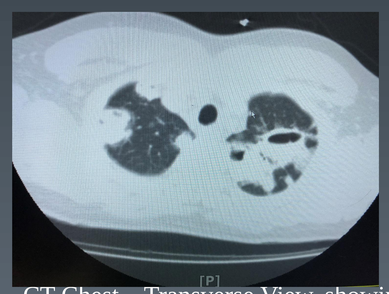
CT Imaging of RLE showing skin thickening and increased subq soft tissue density at medial RLE indicating cellulitis

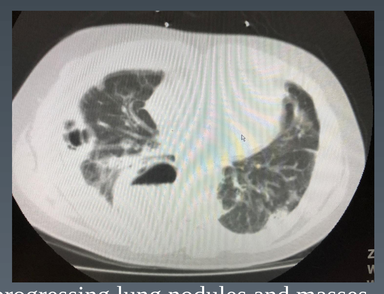


Admission CXR consistent with PNA and septic emboli



CT Chest – Coronal View





CT Chest – Transverse View, showing progressing lung nodules and masses consistent with septic emboli, b/l pleural effusions, possible hydropneumothorax

Results and Hospital Course:

- Patient initially presented to RMH on 8/20/2019. He was treated for RLE cellulitis with a washout; as well as, IV Cefazolin for MSSA + Blood cultures. Blood cultures remained positive x4; spurring a TTE, which was negative for vegetations. CXR preformed demonstrated concern for septic embolic, spurring a Chest CT with reported finding of hydropneumothorax. Patient was transferred to TJUH on 8/28 for the possibility of needing cardiothoracic surgery capabilities.
- He was admitted to the TJUH SICU. Subsequently the patient had multiple episodes of bloody BM's and his Hgb dropped to 6.9. He received 2 units pRBC's with appropriate hemodynamic response. GI was consulted, whom preformed an EGD and colonoscopy on 9/9. They revealed gastritis and duodenitis; H. pylori biopsies were negative. Patient was started on PPI therapy. His status improved allowing transfer from ICU to medical floor.
- IR and thoracic surgery were consulted for the hydropneumothorax. A chest tube was placed(later replaced by a "pigtail" catheter). Decision was made that tPA/dornase were to be injected into the tube to break up the loculations. During one of the injections on 9/11, >1,000mL of bloody fluid was drained and resulted in the patient noting 10/10 pain. Soon afterwards patient developed fever of 102, HR > 150bpm, tachypnea, and WBC count of 24,000 up from 14,000 in just 6 hours. Antibiotic coverage was broadened from Cefazolin to Vancomycin and Piperacillin/Tazobactam. Repeat blood cultures proved negative at this time, but pleural fluid cultures returned + for MSSA. Infectious Disease evaluated the patient and recommended de-escalation of antibiotics to Cefazolin alone, with recommended course until 10/2.
- In the following days, recurrent Hgb drop to ~ 7; he received 3 units of pRBC's and again responded appropriately. Thoracic surgery discontinued tPA/dornase due to Hgb drop and septic response. Pigtail catheter was removed on 9/17.
- Daily CXR were obtained to monitor the progression of the hydropneumothorax, which revealed overall improvement as the patient clinically improved. Pt was deemed stable and discharged from the hospital to SNF on 9/18.

Conclusion:

Patients presenting with sepsis in the setting of IV drug abuse may be prone to severe medical derangements and a complicated hospital course including implications regarding multiple organ systems that may require the attention of more advanced specialists and tertiary care centers.