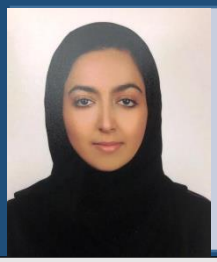


Case of the Month

Dr. Salama Al Neyadi

"The meticulous case of an IV Drug user"

Background

Intravenous Drug Users (IVDU) are at great risk of complications from infectious and non-infectious causes. The common challenge Emergency Medicine (EM) physicians face dealing with those patients is establishing the diagnosis, as they can present with subtle and vague symptoms. Fever may be the only isolated sign of a serious underlying disease; therefore, having a high clinical gestalt and a broad differential for a serious underlying disorder in IVDU can be life-saving. This case discusses the challenges, the approach and the management of an IVDU patient presenting with vague symptoms to the Emergency Department (ED).

CASE PRESENTATION

A 30-year-old male patient, known case of heroin and Crystal meth abuse for the past 10 years, presented to the ED with generalized weakness and fatigue for one month duration.

Upon the initial assessment, he appeared drowsy; possibly from the heroin injection he received prior to arrival, but was oriented x3. It was noted that the patient did not remove his sunglasses throughout the ED stay and was bothered by the overhead lights.

He reported that the fatigue and weakness has progressively worsened over the past two weeks, and currently he is unable to mobilize without assistance. This was in conjunction with the appearance of new purple lesions on his lower limbs, unintentional weight loss, night sweats, generalized headache and midline thoracic vertebral region pain.

Social history was significant for multiple female sexual partners, and the patient denied any other past medical or surgical history apart from what has been stated.

Vital signs upon arrival to ED were significant for temperature of 39.2°C, controlled blood pressure, sinus tachycardia at a rate of 132 beats/min, a respiratory rate of 20/min, and an Oxygen saturation of 98% on room air.

On examination, the patient was drowsy but non-toxic looking, he was actively coughing and expectorating blood-stained sputum. Chest auscultation revealed some fine crackles, cardiac examination was unremarkable for any murmurs. The lower limb motor power was 5/5 bilaterally.

Examination of the limbs showed purpuric rash bilaterally from the feet extending to his knees, along with multiple needle track marks with healing ulcers on both the upper and lower limbs. The patient was uncooperative and irritable through-out the examination and assessment.

During his stay in the ED the patient requested to go to the bathroom, he was not escorted by staff but was offered a wheelchair for ease of mobility. He has spent longer than usual time in the toilet and this was noted by the ED Staff. On reassessment the patient was found to be more euphoric and drowsier in comparison to his arrival. Patient later admitted injecting himself with heroin in the bathroom.

Laboratory studies were concerning for leukocytosis of 21.2x109/L (4.0-11.0), Microcytic anemia (Hemoglobin of 6), Thrombocytopenia of 2x109/L, Lactate of 3.1 mmol/L (0.5–2.0 mmol/L), CRP of 233, and severe hyponatremia of 117 mmol/L (135–145 mmol/L). No schistocytes on blood smear.

Chest X-ray (image below) revealed bilateral multiple cavitary lesions, and his CT head was unremarkable. Lumbar puncture was deferred due to his severe thrombocytopenia.

Broad-spectrum antibiotics (Piperacillin/tazobactam, vancomycin and meropenem) were initiated in the ED and the patient was admitted to a high dependency unit. Blood cultures were positive for MRSA. Transthoracic echocardiography (image below) was obtained during admission which revealed a large vegetation at the tricuspid valve measuring 4.8 cm. CT spine was done and was unremarkable. His HIV and TB statuses were negative. The Patient was diagnosed with right-sided Infective endocarditis.

During his inpatient course, he developed volume overload with respiratory distress, was placed on bipap and prepared for transfer to a cardiothoracic capable facility for urgent valve replacement.

DISCUSSION

In the case discussed, Infective endocarditis and epidural abscess were the most likely diagnoses.

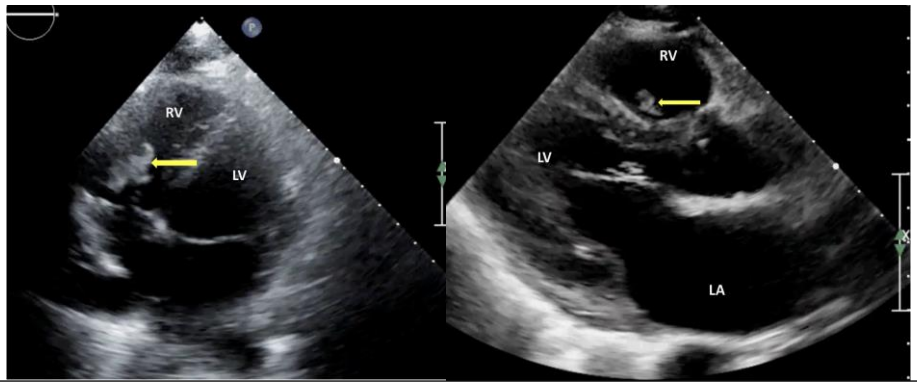
There are no reliable biomarkers available to exclude serious illness in IVDU who present with fever; therefore, it is highly imperative to broaden the differential diagnosis and to prioritize rare, yet serious conditions such as: epidural abscess and infective endocarditis.

Unexplained fever should raise concerns of Infective endocarditis (IE) until proven otherwise.[4] The incidence of endocarditis in IVDU is estimated to be 40 times that in the general population. In this population, IE is seen more in the right side of the heart around 57% to 86%.[6] Presenting symptoms are usually vague including weakness, cough and fever; murmurs are less often heard in right-sided infective endocarditis.[3] Diagnosis is based on clinical presentation of the patient, blood cultures (usually 3 blood samples), Echocardiography and modified Duke's criteria.

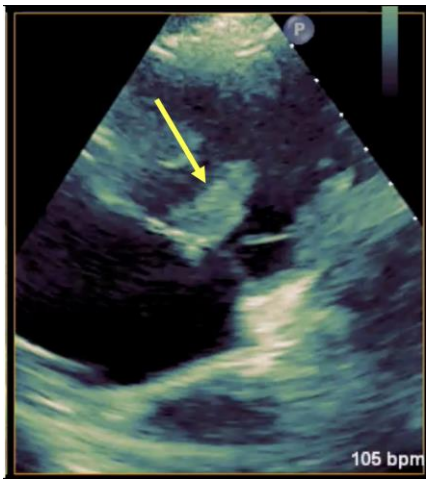
Epidural abscess is a cord-compromising infection, so if this diagnosis is considered, do not delay an urgent MRI along with a neurosurgical consult.[1]

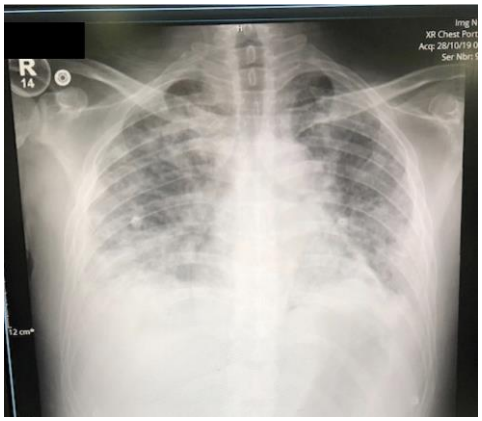
Injection drug use also places users at risk of acquiring HIV; patients must be checked because all-cause mortality is three times higher among HIV-positive IVDU in comparison to non-users.[2]

When encountering such patients, it is advisable to remove all garments and secure their personal belongings. This is done to eliminate the possibility of added drug intake while he or she is in your facility.



Long Axes and Apical views showing Tricuspid Vegetation (yellow arrow)





Chest radiograph showing septic emboli

CONCLUSION

IVDU tend to develop serious and life-threatening complications. Altered mental status might be the only clue in diagnosing such cases. Frequent assessment, collateral history, and a thorough physical examination are substantial. Drug intoxication and withdrawal should be further explored to exclude other possibilities and associations.

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