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A Medical Red Herring: Cardiomyopathy presenting as Acute Liver Injury

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Introduction

- Heart failure secondary to cardiomyopathy is a known cause of acute liver injury and in severe cases even progression to liver failure.
- In the setting of severe transaminase elevation, patients may often be misdiagnosed with primary liver injury secondary to acute viral hepatitis, or drug induced liver injury.

Case Presentation

- 32 y/o female 20 weeks post-partum with no past medical history presented with 2-week history of nausea, vomiting, abdominal pain and general malaise. She had no history of alcohol use, intravenous drug use, hepatitis, Acetaminophen use, or recent travel.
- She had no history of heart disease, autoimmune disease,

Physical Examination

- Exam: T:36.8 HR: 116 RR: 18 BP: 103/83
- Chest: Clear to auscultation Bilaterally
- CV: Tachycardia w/ regular rhythm, 2+ pulses
- Abdominal: Soft, Distended, dullness to percussion of lateral abdomen
- MSK: Bilateral pitting edema to knees, warm extremities

Imaging

CXR: enlarged heart with Lungs clear of any acute process

US abdomen: increased echogenicity, mild ascites, prominent hepatic veins, increased echogenicity and irregular surface

	Laboratory result	Reference range
ALT/SGPT	4,147 *	<52 IU/L
AST/SGOT	2,953*	<35 IU/L
Bilirubin, Total	1.5*	<= 1.2 mg/dL
Alkaline Phosphatase	451*	40-140 IU/L
INR	2.55*	

Figure 1

Clinical Course

- Patient was referred for liver transplant evaluation with concern for acute liver failure. Hepatology was consulted and patient as worked up for possible causes of acute liver injury.
- On day 2 of hospitalization patient developed worsening hypotension and was found to have lactate elevation, with cold extremities, and diminished peripheral pulses.
- Echocardiogram was done which revealed ejection fraction of 21%, hypokinesis of Left Ventricle, and severely reduced right ventricular function.
- Patient underwent heart catheterization which showed severely elevated right atrial pressure, pulmonary hypertension, and severely reduced cardiac output.
- Patient was admitted to CICU for catheter directed diuresis but developed worsening circulatory failure.
- Impella device was placed on day 5 of hospitalization and patient was evaluated for heart transplant.

Discussion

- This case highlights the importance of assessing cardiac function in patients with otherwise unexplained liver injury.
- In the absence of evidence of hypoperfusion to other organs, and in the presence of significantly elevated serum transaminases, patients may undergo in depth liver evaluation prior to assessment of cardiac function.
- Right Heart failure can often present with vague complaints including weakness, fatigue, lower extremity swelling, abdominal distension, and RUQ pain. These symptoms overlap significantly with symptoms in those experiencing acute liver injury or cirrhosis.
- Prompt recognition of cardiocirculatory failure in such patients may expedite further cardiac workup and timely use of inotropes, hemodynamic support devices, and cardiac transplant evaluation.
- Earlier recognition of cardiomyopathy in this patient may have lead to prompt hemodynamic monitoring, shorter onset to inotropic support, and expedited transplant workup.

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