Cardiac Tamponade Presenting as Acute Liver Injury

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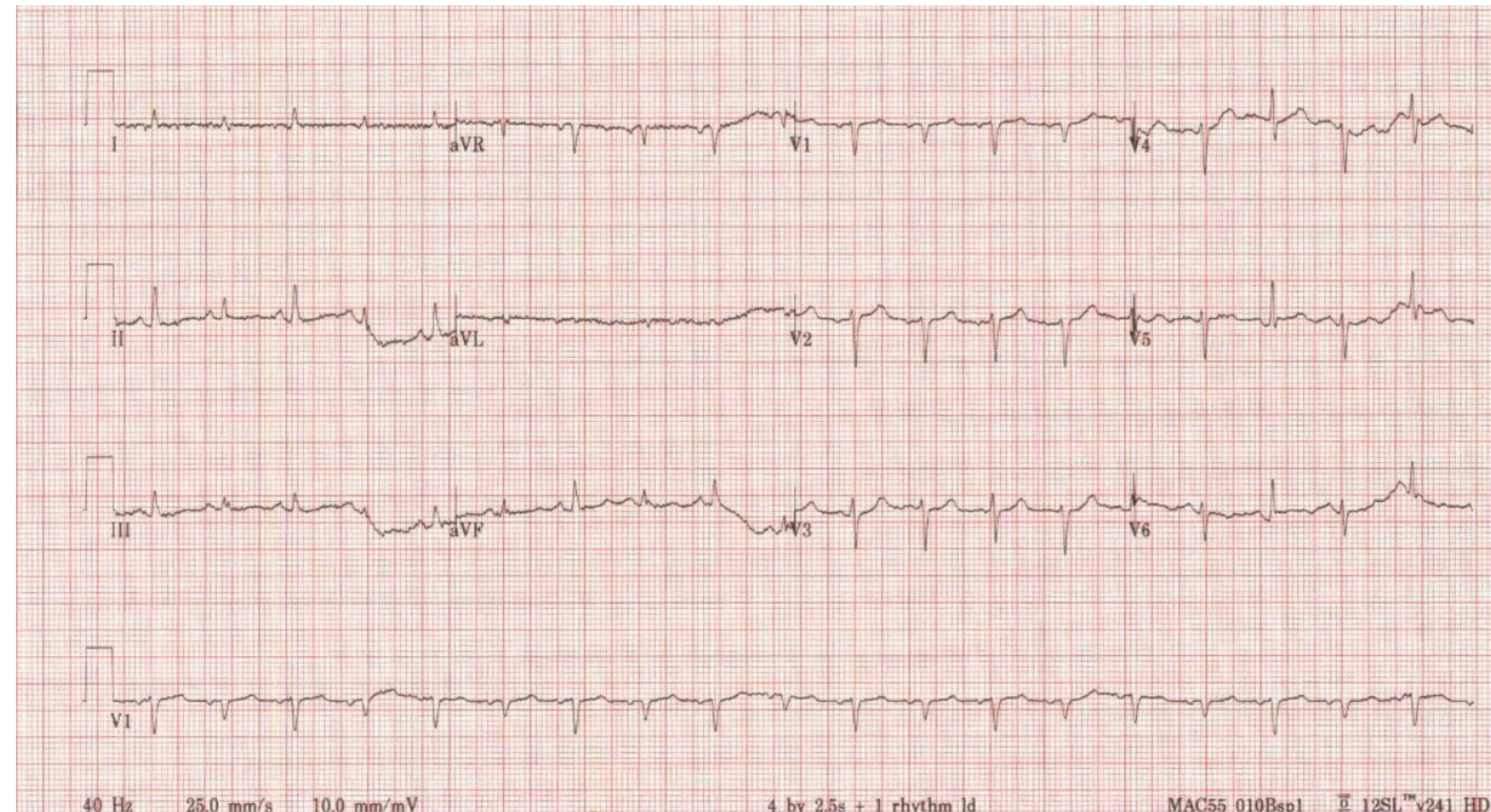
Introduction

Acute liver injury (ALI) has an extensive differential diagnosis list which can make diagnosis challenging. A few causes of elevation of AST (aspartate transaminase), ALT (alanine transaminase) in thousand is ischemic, toxic and viral hepatitis. One such rare cause is cardiac tamponade that can present as an acute liver injury. The literature of cardiac tamponade causing ALI is limited to few case reports and we present one such case.



Discussion

ALI can be a presenting sign of cardiac tamponade; a prompt diagnosis and treatment can be life saving. Cardiac tamponade is thought to cause liver injury by hepatic venous congestion and decreasing cardiac output causing ischemic injury. 50% cases of ischemic hepatitis do not have documented hypotension. A few lab abnormalities often seen with ischemic hepatitis are acute kidney injury, massive rise in LDH, hyperglycemia. The prognosis of ischemic hepatitis depends on the inciting cause rather than severity of liver injury. A 50% improvement in liver enzymes within 72 hour of correction of inciting cause is usually seen.

Case Description

A 55 year old male with squamous cell lung cancer on durvalumab, diabetes mellitus presented with worsening shortness of breath for the last one week. On presentation his vitals were stable and physical exam revealed distant heart sound with electrical alternans noted in electrocardiogram. Blood work was noted for elevated ALT 1481 U/L (units per liter), AST 803 U/L, ALP (alkaline phosphatase) 227 U/L, total bilirubin 1.3 mg/dl. Patient has had a normal LFT (liver function test) in blood work done 3 weeks ago. Initial chest x-ray showed large right pleural effusion. The next day, repeat lab revealed worsening of liver enzymes with INR (internationalized normal ratio) 3, ALT 4146 U/L, AST 4302 U/L, ALP 189 U/L, total bilirubin 2 mg/dl and LDH (lactate dehydrogenase) 3879 U/L. Serum creatinine was also noted to worsen to 2.06 mg/dL from baseline 0.89 mg/dL. CT chest revealed large right sided pleural effusion with possible underlying pneumonia or atelectasis in the right middle and lower lobe with moderate to large pericardial effusion. Patient underwent an echocardiogram which revealed a 3.1 cm circumferential pericardial fluid collection with tamponade physiology. He was taken for urgent pericardiocentesis with removal of 760 mL of fluid. Pericardial fluid cytology revealed adenocarcinoma. Post pericardiocentesis patients LFT improved, and he was discharged after 6 days.

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