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Rare Cause of Fatal Liver Disease: A Case of Acute Liver Failure in a Patient with Recently Diagnosed Metastatic Ovarian Carcinoma

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INTRODUCTION: Metastatic liver disease is a relatively common finding in autopsies of adults with aggressive tumors. In a majority of cases, affected patients do not have signs or symptoms of liver failure.

CASE PRESENTATION: A 41-year-old previously healthy Caucasian female presented to our ED with worsening abdominal pain and shortness of breath. Her symptoms started about a week prior to the ED visit. Her PCP ordered a CT scan of chest, abdomen, and pelvis which showed an ovarian mass concerning for carcinoma with multiple hepatic and pulmonary metastases. In the ED, vital signs were normal. A distended non-tender abdomen was appreciated during the physical exam. Laboratory workup revealed leukocytosis (WBC 31.1K/UL), abnormal LFTs (AST 1525U/L, ALT 396U/L, bilirubin 3.6MG/DL, alkaline phosphatase 366U/L), renal failure (Crea 1.76MG/DL, BUN 47MG/DL), elevated lactic acid (8.1MEQ/L), INR (1.6). A repeat CT scan of the chest, abdomen, and pelvis was unchanged. The patient was started on broad-spectrum antibiotics. On day 2, the patient was noted to have the worsening of liver function (AST 4652U/L and ALT 907U/L) as well as the development of respiratory failure. She was placed on BiPAP for increased work of breathing. She was started on CRRT for refractory metabolic acidosis and the worsening of renal failure. On day 3, the patient became confused with visible jaundice, asterixis, worsening of LFTs with AST and ALT (20845U/L and 2441U/L, respectively), elevated ammonia level as well as coagulopathy. Her MELD score was 46. Unfortunately, the patient suffered a cardiac arrest (PEA) twice within an hour with ROSC. The family made the decision to proceed with the withdrawal of care. The patient expired soon after that.

DISCUSSION: Acute (also known as fulminant) liver failure is characterized by severe acute liver dysfunction (INR ≥ 1.5 and hepatic encephalopathy) in the absence of preexisting liver disease within less than 26 weeks. The two most common causes of acute liver failure are viral and drug-induced hepatitis. Malignant infiltration is a rare cause of liver failure which has been increasingly recognized in recent years. Patients with acute liver failure in the setting of metastatic liver disease have a very poor prognosis.

CONCLUSIONS: In patients with signs and symptoms of acute liver failure, it is important to rule out metastatic liver disease as a potential etiology. Unfortunately, no definitive treatment is available at this point in affected individuals since liver transplant is contraindicated in patients with metastatic liver disease not meeting oncologic criteria for cure.

Reference #1: Polson J, Lee WM. AASLD position paper: The management of acute liver failure. *Hepatology*. 2005;41(5):1179-1197.

Reference #2: Nazario HE, Lepe R, Trotter JF. Metastatic breast cancer presenting as acute liver failure. *Gastroenterology & hepatology*. 2011;7(1):65.