Hepatocellular Carcinoma in hepatitis C without Cirrhosis

Subjects: Oncology

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The current NCCN guidelines recommend HCC surveillance in cirrhotic people every six months, using Ultra sound (U/S) abdomen and Alpha Feto Protien (AFP) levels. However, the National Comprehensive Cancer Network (NCCN) guideline only emphasizes the significance of screening if the patient has hepatitis B without cirrhosis, not hepatitis C without cirrhosis. This example illustrates the need for improved surveillance strategies for non-cirrhotic hepatitis C patients.

Cirrhosis, Liver | Hepatic Cirrhosis | Chronic Hepatitis C | Hepatocellular Carcinomas | Liver Cancer, Adult | NAFLD | Steatohepatitis, Nonalcoholic | Hepatitis B Virus Infection, Chronic | alpha-fetoprotein, human | Alcoholic Liver Cirrhosis

1. Introduction

Hepatocellular carcinoma (HCC) is the leading cause of primary liver cancer, ranked sixth in incidence and ranked third in mortality worldwide, according to the World Health Organization's International Agency for Research on Cancer in 2022. Of note, there is a 5-year prevalence of 60,043 cases in North America alone [1].

Hepatitis C (HCV) stands as the traditional risk factor as approximately 90% of HCV-driven HCC cases are preceded by cirrhosis, characterized by extensive fibrosis and scarring of the liver tissue [2]. This is seen as the annual incidence of HCC in persons with HCV-related cirrhosis ranges from 0.5–10% [3]. However, according to the National Comprehensive Cancer Network (NCCN) guidelines for HCC, further screening is only required in non-cirrhotic patients if they have hepatitis B (HBV), but it is not required if they have HCV [4].

Though the exact mechanisms of HCV-induced HCC are not completely understood, the complexities of chronic inflammation, viral replication, oxidative stress, and metabolic disturbances contribute to HCV-driven HCC. As chronic HCV infection induces liver inflammation, liver damage and regeneration result, causing accumulation of genetic mutations and carcinogenicity [5]. HCV replication within hepatocytes similarly causes direct cell damage, introducing the vicious cycle of liver injury and regeneration. Additionally, HCV core proteins induce oxidative stress within hepatocytes causing injury by impairing the mitochondrial electron transfer system and overproducing reactive oxygen species leading to DNA damage [5]. Moreover, HCV infection is also associated with lipid and glucose metabolism disorders, exacerbating liver damage and accelerating progression to HCC [5].

Altogether, though HCV-positive non-cirrhotic HCC incidents occur less frequently, further research is required to address this patient population. This phenomenon can cause delayed diagnosis and poorer patient outcomes from falling outside of the screening guidelines that do not consider non-cirrhotic patients who have HCV to be in the screening criteria. This is evident as one of the primary HCC screening criteria solely involved cirrhosis as the main symptom. Implementing surveillance programs including imaging of the abdomen and alpha-fetoprotein (AFP) testing at an earlier stage to detect tumors may be necessary. In all, the objective of this case report is to present the incident of HCC in a patient with HCV without evidence of cirrhosis and compare similar cases to establish clinical implications and improve future screening and management.

2. Case presentation

We present a case of a 68-year-old African American male with a past medical history who presented from the skilled nursing facility concerning for abnormal labs, hypercalcemia 15.

On primary survey, his blood pressure was 138/74, temperature 36.8 celsius, pulse 56, respiratory rate 16, 95% O2 sat on room air. The patient appears chronically ill-looking, non-communicative but responds to noxious stimuli (withdraws and opens his eyes), appears wasted and disoriented. Chest, cardiovascular system, abdominal, genital urinary system showed no pertinent finding except a percutaneous endoscopic gastrostomy tube. Patient showed mild contractures of joints of extremities. Neurologically, the patient is at baseline which is not communicating, not following directions. Pertinent labs showed that the patient was hepatitis C antibody reactive and had an alpha-fetoprotein >100,000, Aspartate transaminase/alanine transaminase 146/59, corrected calcium 15.3, potassium 5.7.

Secondary survey of CT abdomen showed a 10 cm mass in the right lobe of the liver, malignant appearing, and probably hepatocellular carcinoma although there is no evidence of cirrhosis. CT of the chest showed 1.3 cm cavitary lesion in the left upper lobe, possible metastasis. CT of the head/brain showed no lesions and the bone scan showed no metastasis.

Surgical oncology evaluated the patient and he was not a candidate either for resection or transplant. The patient was discharged back to the skilled nursing facility on 6/19/2024.

3. Discussion

The current NCCN guidelines recommend HCC surveillance in populations with known risk factors for HCC, such as hepatitis C and alcoholic (more than 80 g/day for 10 years) with liver cirrhosis, Hepatitis B with or without liver cirrhosis, and non-alcoholic steatohepatitis individuals, every six months using Ultrasound (U/S) and Alpha Feto Protein (AFP) levels.

However, the NCCN only emphasizes the significance of screening if the patient has hepatitis B without cirrhosis, not hepatitis C without cirrhosis. This example illustrates the need for improved surveillance strategies for non-cirrhotic hepatitis C patients.

However, the new findings of HCC in non-cirrhotic hepatitis C patients highlights HCV's direct carcinogenic potential. This necessitates comprehensive surveillance systems as well as updated recommendations that encourage early detection and treatment of HCC in all individuals.

This necessitates extensive surveillance systems and updated recommendations to promote early detection and management of HCC in all patient groups. In cirrhotic patients, continuous monitoring of liver function and imaging examinations can lead to earlier detection of HCC. Non-cirrhotic patients, on the other hand, lack these symptoms, allowing HCC to be ignored and came across later. HCC symptoms in non-cirrhotic patients can be vague, such as tiredness, stomach pain, and weight loss. Therefore, the NCCN screening criteria must be revised to cover non-cirrhotic hepatitis C patients. This might be accomplished by including biomarkers and imaging techniques into monitoring structures, which would increase early detection rates.

References

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